

**BULLETIN**  
**of THE**  
**MISSISSIPPI STATE**  
**UNIVERSITY**

ONE-HUNDRED TWENTY-SECOND ANNUAL  
BULLETIN 2002-2003

ANNOUNCEMENTS  
2003-2004

This Bulletin presents information which, at the time of preparation for printing, most accurately described the courses, curricula, degrees, policies, procedures, regulations and requirements of the University. No contractual relationships, however, can be established between students and the University upon the information contained herein. The University reserves the right to delete, substitute for, change, or supplement any statement in this Bulletin without prior notice.

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## 2003

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## 2004

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**ACADEMIC CALENDAR**  
for 2003-2004  
available on MSU website  
[www.msstate.edu/dept/registrar/calendar.html](http://www.msstate.edu/dept/registrar/calendar.html)

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STATE of MISSISSIPPI**

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# I. THE TOTAL UNIVERSITY

## I. INTRODUCTION

**A. The Setting.** Mississippi State University forms part of a cohesive town-university community with the growing agricultural-commercial-industrial town of Starkville. Located in the eastern part of north-central Mississippi, it is 125 miles northeast of Jackson and 23 miles west of Columbus; it is served by Highways 82, 12, and 25 and by feeder air service through the Golden Triangle Regional Airport 14 miles east. Away from urban complexities, the community enjoys many intellectual, cultural, and recreational advantages: the MSU-Starkville Civic Symphony and Chorus; the Starkville Community Theater; the University Lyceum series, bringing professional musical, dramatic, and artistic groups and performers to the campus; the Lecture series; art exhibits, plays, and recitals by local and visiting artists; public radio and public television programs through the Mississippi Authority for Educational Television; performances by popular musical groups of regional and national celebrity; frequent intercollegiate athletic events in modern facilities, and a variety of recreational opportunities on playing fields and courts, in neighboring forests, fields, and lakes, and along the nearby Tennessee-Tombigbee Waterway.

**B. The University.** Mississippi State University is a comprehensive, doctoral-degree-granting university offering to a diverse and capable student body a wide range of opportunities and challenges for learning and growth; to the world of knowledge, vigorous and expanding contributions in research, discovery, and application; and to the State and its people in every region, a variety of expert services. Mississippi State University is designated as a Doctoral/Extensive institution by the Carnegie Foundation for the Advancement of Teaching. It is representative of the American Land-Grant tradition and distinctive in its own character and spirit, born of its Mississippi heritage and the vision and loyal perseverance of those who have labored in its development. Mississippi State University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097; telephone (404) 679-4501) to award baccalaureate, master's, specialist, and doctoral degrees.

An able faculty, drawn from the best institutions in all parts of the nation, strive earnestly to demonstrate excellence in teaching, while producing in their specialized studies scholarly books, articles, and conference papers that gain respect for themselves, the University, and the state. They thus ensure for their students instruction that is in immediate touch with current knowledge and thought. A body of energetic researchers, both faculty and other, assisted by an effective research administration, places Mississippi State among the first one hundred universities in the nation in research and development in the sciences and engineering. The University's service agencies are similarly distinguished, earning the respect and support of their varied constituencies throughout the state, as well as in other states and in foreign countries.

**C. The History.** The University began as The Agricultural and Mechanical College of the State of Mississippi, one of the national Land-Grant Colleges established after Congress had passed the Morrill Act in 1862. It was created by the Mississippi Legislature on February 28, 1878, to fulfill the mission of offering training in "agriculture, horticulture and the mechanical arts . . . without excluding other scientific and classical studies, including military tactics." The College received its first students in the fall of 1880 in the presidency of General Stephen D. Lee. In 1887 Congress passed the Hatch Act, which provided for the establishment of the Agricultural Experiment Station in 1888. Two other pieces of federal legislation provided funds for extending the mission of the College: in 1914, the Smith-Lever Act called for "instruction in practical agriculture and home economics to persons not attendant or resident," thus creating the state-wide effort which led to Extension offices in every county in the State; and, in 1917, the Smith-Hughes Act provided for the training of teachers in vocational education.

By 1932, when the Legislature renamed the College as Mississippi State College, it consisted of the Agricultural Experiment Station (1887), the College of Engineering (1902), the College of Agriculture (1903), the School of Industrial Pedagogy (1909), the School of General Science (1911), the College of Business and Industry (1915), the Mississippi Agricultural Extension Service (1915), and the Division of Continuing Education, (1919). Further, in 1926 the College had received its first accreditation by the Southern Association of Colleges and Schools.

By 1958, when the Legislature again renamed the College, as Mississippi State University, the Office of Graduate Studies had been organized (1936), doctoral degree programs had begun (1951), the School of Forest Resources had been established (1954), and the College of Arts and Sciences had been created (1956).

The School of Architecture admitted its first students in 1973; the College of Veterinary Medicine admitted its first class in 1977, and the School of Accountancy was established in 1979.

**D. Purposes.** As a Land-Grant institution, Mississippi State University is dedicated to the three broad purposes already mentioned—learning, research, and service: learning, on-campus and off-campus, to enhance the intellectual, cultural, social, and professional development of its students; research, both to extend the present limits of knowledge and to bring deeper insight, understanding, and usefulness to existing knowledge; and service, to apply knowledge and the fruits of research to the lives of people.

Fulfilling these purposes is the chief work of the large number of educational units that make up the total university, including, among others, the academic departments, schools, and colleges; Continuing Education; the Mississippi State University Extension Service, and the Mississippi Agricultural and Forestry Experiment Station.

The quality of the faculty, staff, and administrators ensures the high quality of the instruction, research, and service provided. The quality of the University's programs ensures that its students receive a well-designed and comprehensive education that will assist them to lead constructive lives and achieve their personal and professional goals.

From its beginnings, Mississippi State University has been known as "The People's University"; through its state-wide efforts, it keeps that character. The main campus in Starkville is augmented by a degree-granting center in Meridian and a program center at the Stennis Space Center, a Master of Science degree in Engineering at the Waterways Experiment Station in Vicksburg, ten branch stations of the Mississippi Agricultural and Forestry Experiment Station, and offices of the MSU Extension Service in almost every county of the state. The University thus makes available degree and non-degree courses, programs, and services to all citizens, regardless of race, age, sex, or economic condition.

### Statement of Institutional Purpose

Mississippi State University was founded as a land-grant institution in 1878 to meet the needs of the people, institutions, and organizations of the state, the region, and the nation through undergraduate and graduate education, basic and applied research, and service to institutions and organizations. The University's fundamental purpose is to develop knowledgeable and skilled people who engage in the pursuit of intellectual truth, help constitute an informed electorate, and contribute to economic growth and prosperity. Mississippi State is committed to performing basic research to expand the bounds of knowledge, to using applied research to translate knowledge into practice, to providing service to institutions and organizations, and to providing education to its students.

**Educational Philosophy** - Mississippi State's primary responsibility is to provide a high quality educational opportunity to all adequately prepared students in the state and region. It seeks to inculcate in its students a lifelong love of learning; an appreciation of the cultural, intellectual, and historical impact of the search for truth and knowledge; the opportunity for professional specialization and emotional and social development through out-of-class experiences. All students are expected to master the skills that enable them to communicate clearly, to use mathematics, and to understand their cultural heritage and that of others. The University seeks to develop in its students the ability to think independently, to accept responsibility to interact with people different from themselves, to assess ideas, to challenge orthodoxies, and to criticize opinions in order to achieve the intellectual, ethical, and aesthetic maturity expected in educated citizens. Mississippi State affirms the right of all students to achieve an educational level limited only by their own commitment and ability.

**Academic Freedom and Responsibility** - Freedom of inquiry and expression is fundamental to the idea of a university and to a democratic society. Mississippi State affirms this principle and vigorously defends it. At the same time, faculty are obligated to exercise good judgment, to maintain the highest professional and personal standards of intellectual integrity, and to ensure that the free exchange of ideas is marked by both accuracy and relevance of information to the subjects or issues under consideration. Mississippi State recognizes the value of diverse opinions in decision making and pursues its mission in an atmosphere of shared governance and open communication. Faculty and staff are involved in policy formulation and in imple-

menting the learning, research, and service missions of the University. Faculty and staff also recognize their shared accountability for the performance of the University in carrying out its mission.

**Curricular Offerings** - Mississippi State offers high quality education at the bachelor's, master's, professional, and doctoral levels. The University offers a liberal education for all students in a broad-based curriculum of the sciences, the arts and the technological disciplines to prepare them for productive careers and positions of leadership. Methods of inquiry and critical thinking are emphasized to prepare students to solve complex societal problems and to engage in lifelong learning and exploration. As a comprehensive land-grant university, Mississippi State serves both in-state and out-of-state students through instruction in engineering and agriculture, along with significant elements of the humanities, sciences, arts, business, and education. Besides a comprehensive range of undergraduate academic programs, the University offers outstanding graduate programs, capitalizing on the unique ability of a research university to expand the horizons of its students.

**Traditional and Non-Traditional Education** - The University affirms its mission to address education as a lifelong process by providing appropriate opportunities for continuing education and interacting with the pre-college educational system to prepare students for university study. Mississippi State continually assesses both traditional and innovative educational delivery systems in order to provide education in the most efficient and effective ways to as many citizens as possible.

**Research** - Research is an integral part of the mission of Mississippi State. It expands the frontiers of human knowledge and provides practical applications of accumulated knowledge. The University fosters an environment in which faculty, together with students, can establish and maintain high quality research. The University makes available the results of its research to improve the well-being of the citizens of the state and to enhance the competitiveness of the state and nation in a global society. Research is essential to the instructional mission of the university. It brings state-of-the-art knowledge into the classroom and inspires superior undergraduate and graduate teaching and learning.

**Responsibility to Constituencies** - Mississippi State is responsive to numerous and rapidly changing constituencies. The University provides rigorous education to the state's citizens, preparing students for careers and positions of leadership in state, regional, national, and world institutions and organizations. Mississippi State's public service mission stresses problem-solving, economic development, social and ethical responsibility, and aesthetic awareness among the individuals, governments, businesses, and communities it serves. Recognizing its legal and ethical responsibilities, the University is committed to enhancing the cultural, artistic, and intellectual life of these multiple constituencies. This commitment includes sharing expertise through cooperative extension, technical assistance, professional development, and technology transfer.

**E. The University Today.** Mississippi State University now comprises the following academic units: the College of Agriculture and Life Sciences including the school of Human Sciences; the School of Architecture; the College of Arts and Sciences; the College of Business and Industry including the School of Accountancy; the Division of Continuing Education; the College of Education; the College of Engineering including the Swalm School of Chemical Engineering; the College of Forest Resources; the Office of Graduate Studies, and the College of Veterinary Medicine. In addition, the Mississippi Agricultural and Forestry Experiment Station, operating ten branch stations throughout the State, conducts research in a variety of areas and assists in the University's teaching and service functions. Finally, the Mississippi State University Extension Service offers programs and services to the people of the State through campus and county offices and personnel. Supporting the academic and educational programs of the total University are the Mitchell Memorial Library and branch libraries.

Within the framework of the University, several units perform specialized teaching, research, or service activities. Among these are the University Honors Program, the Biological and Physical Sciences Research Institute, the Division of Business Research, the Bureau of Educational Research and Evaluation, the Engineering and Industrial Research Station, the Food Science Institute, the Institute for the Humanities, the Research Center at the John C. Stennis Space Center, the Diagnostic Instrumentation and Analysis Laboratory, the Remote Sensing Program, the Social Science Research Center, the Water Resources Research Institute, the Cobb Institute of Archaeology, Engineering Services, the Division of Business Services, the Rasket Flight Research Laboratory, the Research and Curriculum Unit for Vocational-Technical Education, the A. B. McKay Food and Enology Laboratory, the Office of Planning, Evaluation, and Institutional Effectiveness, the John C. Stennis Institute of Government, the Forest Products Utilization Laboratory, the Engineering Research Center, the Southern Forest Experiment Station, the Division of Plant Industry, the State Seed Testing Laboratory, the State Chemical Laboratory, the Boll Weevil Research Laboratory, the South Central Poultry Research Laboratory, the Community/Economic Development Center, the Center for Environmental Studies, the Center for Robotics, Automation and Artificial Intelligence, the Research Services Biosafety Office, Electron Microscope Center, Hazardous Waste Office, Laboratory Animal Veterinarian, Radiological Safety Office, the University-Industry Chemical Research Center, the Research and Training Center for Blindness and Low Vision, the *Mississippi Quarterly*, the Center for International Security and Strategic Studies, and the Center for International Programs.

Mississippi State University operates an off-campus, degree-granting center in Meridian where both undergraduate and graduate programs are offered and a program center at the Stennis Space Center. In cooperation with the U. S. Army Engineer Waterways Experiment Station, the College of Engineering offers the Master of Science degree to qualified students in Vicksburg. At the request of the U.S. Navy, the College of Education offers the Master of Science degree in Counseling at the U.S. Naval Base in Roosevelt Roads, Puerto Rico.

The Board of Trustees of State Institutions of Higher Learning has designated Mississippi State University as a comprehensive, doctoral degree-granting university. These designations, in concert with the University's original Land-Grant mission, make Mississippi State University a major contributor to the educational system of the State. For over a century, the State has benefitted from the University and its graduates, most of whom have remained in Mississippi and aided the State's economic, social, and educational development. Through its membership in such organizations as the Southern Regional Education Board, the American Council on Education, and the National Association of State Universities and Land-Grant Colleges, Mississippi State University is justly recognized for its educational and technological contributions to the national and international communities. The commitment of faculty, administrators, and staff personnel is to continue the high quality of teaching, research, and service to Mississippi and her people and to people beyond the borders of this State and nation.

#### Past Presidents of the College/University

- |  |                                     |
|--|-------------------------------------|
| 1. General Stephen D. Lee (1880-1899)  | 9. George Duke Humphrey (1934-1945) |
| 2. John Marshall Stone (1899-1900)     | 10. Fred Tom Mitchell (1945-1953)   |
| 3. John Crumpton Hardy (1900-1912)     | 11. Benjamin F. Hilbun (1953-1960)  |
| 4. George Robert Hightower (1912-1916) | 12. Dean W. Colvard (1960-1966)     |
| 5. William Hall Smith (1916-1920)      | 13. William L. Giles (1966-1976)    |
| 6. David Carlisle Hull (1920-1925)     | 14. James D. McComas (1976-1985)    |
| 7. Buz M. Walker (1925-1930)           | 15. Donald W. Zacharias (1985-1997) |
| 8. Hugh Critz (1930-1934)              | 16. Malcolm Porter (1998-2001)      |

**F. The Grounds, Buildings, and Facilities.** The grounds of the University comprise about 4,200 acres, including farms, pastures, and woodlands of the Experiment Station. The net investment in buildings and grounds is approximately \$450 million.

## II. ADMISSION TO THE UNIVERSITY

### A. ENROLLMENT SERVICES

Enrollment counselors visit high schools and community/junior colleges to assist students in making a smooth transition to Mississippi State University by answering questions about admissions, financial aid and scholarships, on-campus housing, academic programs, fees and expenses, new student orientation, cooperative education, extracurricular activities, ROTC, and other areas of concern. Prospective students and their parents are encouraged to visit the campus, to meet students and professors, and to get an overall view of what the campus is like. To make an appointment, write to the Office of Enrollment Services, Box 6334, Mississippi State, MS 39762, or call 662-325-3076. The web address is: [www.enroll.msstate.edu](http://www.enroll.msstate.edu), and fax requests may be sent to 662-325-1MSU.

All new students (freshmen and transfers) entering the University are encouraged to participate in the summer orientation program. The purpose of the program is to enable the student to become familiar with the University, its activities, and its academic programs. The student participates in small

group activities, selects courses, completes schedules, receives academic advisement, and completes registration except for the payment of tuition and fees.

**Invitation to Parents.** At the time of student orientation, parents are invited and urged to attend a program designed to acquaint them with University policies, student activities, campus life, academic programs, and other interest areas. They also are given the opportunity to meet and talk with academic deans and department heads and with staff members in the Division of Student Affairs.

Prior to the beginning of each semester, there is an orientation program for those who are admitted to the University too late to participate in the summer programs. Students who for other reasons cannot attend orientation at an earlier date may attend these sessions.

For additional information, write to the Director of Enrollment Services, Box 6334, Mississippi State, MS 39762, or telephone 662-325-3076. Find the Office of Enrollment Services on the World Wide Web at [www.enroll.msstate.edu](http://www.enroll.msstate.edu).

## B. ADMISSIONS

### DISCLAIMER

Until further notice, the admission information contained in this Bulletin most accurately describes the admissions policies, regulations, requirements and procedures of the University and the Board of Trustees of Institutions of Higher Learning. The University reserves the right to delete, substitute, change or supplement any statement in this Bulletin without prior notice.

**Applications.** For consideration for admission for the fall term, freshmen applications must be received by May 1. Transfer applicants must submit applications by August 1 for consideration for the fall term. Applicants to the School of Architecture, Professional Golf Management, and the College of Veterinary Medicine have early application deadlines. Other departments may also have application deadlines. Contact the specific department for dates.

Out-of-State residents and International students must submit a \$25.00 non-refundable application fee. The application for admissions cannot be processed until this fee is received.

Mississippi State University may void enrollment in the following situations: if an original transcript is not received; if a student is not eligible for readmission to any college formerly attended; or if any document is fraudulent or altered.

Applicants may meet general admission requirements to the University and not meet the requirements for a specific department. Applicants should contact the academic department to which they are applying for additional requirements.

For admission information or to inquire further about university admission requirements, contact the Office of Admissions, Mississippi State University, P.O. Box 6305, Mississippi State, MS 39762-6305. Telephone: 662-325-2224. Fax: 662-325-7360. E-mail: [admit@admissions.msstate.edu](mailto:admit@admissions.msstate.edu). Students may apply online by visiting our website at [www.msstate.edu](http://www.msstate.edu). All applications must be submitted electronically.

### 1. Freshman Entrance Requirements

#### a. Regular Admission.

- (1) Submit application for admission. For consideration for admission for the fall term, freshmen applications must be received by May 1.
- (2) Out-of-State applicants and International students must submit a \$25 non-refundable application fee.
- (3) Must have graduated from an approved secondary school.
- (4) Submit an official American College Test (ACT) score or Scholastic Aptitude Test (SAT) scores.
- (5) Submit a high school transcript to Mississippi State University, as well as an official transcript upon graduation from high school. If the applicant has attended another college, he/she should request those transcripts also be sent to the Office of Admissions.
- (6) Must have earned in grades 9-12, at a minimum, the units shown in the following table:

Subject:	Units:
English	4 - All must have substantial writing requirements
Mathematics*	3 - Algebra I, Algebra II, and Geometry or a higher level mathematics (Algebra I taken in the 8th grade will be accepted for admission purposes provided the course content is the same as the high school course.)
Science	3 - Physical Science, Biology, Advanced Biology, Chemistry, Advanced Chemistry, Physics, Advanced Physics, Anatomy and Physiology, Botany, Marine Biology, or another science of comparable rigor . (Two units must be lab based.)
Social Science	3 - U.S. History 1 unit, World History 1 unit; Government 1/2 unit; and Economics 1/2 unit <b>or</b> Geography 1/2 unit.
Advanced Electives	2 - Elect 2 units from Foreign Language, World Geography-4th year laboratory-based Science, and 4th year Mathematics. One unit must be a Foreign Language <b>or</b> World Geography. (Foreign language taken in the 8th grade will be accepted for admission purposes, provided the course is the same as the high school course.)
Computer	1/2 - Computer as a productivity tool, not as a keyboarding device.

The high school course requirements above are applicable to high school students graduating after spring 1996. Students graduating prior to spring 1996 will be screened for admission under admission standards previously in effect.

Full admission to Mississippi State University will be granted to high school graduates who complete high school courses with one of the following:

- A minimum 3.20 grade-point average on the required high school courses.
- A minimum 2.50 grade-point average on the required high school courses or standing in the top 50 percent of the class and a composite score of 16 or higher on the ACT or a combined score of 760 or higher on the SAT.
- A minimum 2.0 grade-point average on the required high school courses and a composite score of 18 or higher on the ACT or a combined score of 860 or higher on the SAT.
- A satisfactory qualifier under the National Collegiate Athletic Association standards for student-athletes who are full qualifiers under Division I guidelines.

Mississippi residents who fail to meet the full admission standards as listed above may, as a result of review, be admitted to the fall or summer semester. The review shall involve a consideration of high school performance, ACT/SAT scores (if available), placement testing, and a special interests and skills, as well as other non-academic factors.

Entering freshmen with a high school grade point average of less than 2.5 in the pre-college core courses listed above and a composite ACT score of 20 or below will be placed in the undeclared major and will be advised by the University Academic Advising Center for 30 hours of core classes.

\* Four units of Mathematics are recommended for Engineering majors, to include Trigonometry

### b. Admission with Deficiencies.

If the initial **review** indicates inadequate readiness in English, reading, or mathematics, Mississippi students will be required to participate in counseling and testing, which will be held on campus (and other designated locations) prior to the beginning of the summer session. Students who successfully complete the counseling and testing program will be admitted to the University, with the requirement that they participate in the year long Academic Support Program.

Mississippi students who fail to successfully complete the counseling and testing program may be given admission with the requirement that they enroll in the Summer Developmental Program. This is an intensive program that concentrates on those high school subject areas (writing, reading, and mathematics) essential to success in first-year college courses. Students who successfully complete this summer program will be allowed to continue in the fall term, with mandatory participation in the Academic Support Program during their freshman year. Developmental courses taken during the Summer Developmental Program are remedial and neither count toward a degree nor are computed in a student's grade point average.

Students who fail to successfully exit the Summer Developmental Program will be counseled to explore other post-secondary opportunities.

A student athlete must meet the requirements of the Southeastern Conference and the National Collegiate Athletic Association (N.C.A.A.)\*.

Mississippi State University neither awards credit nor accepts transfer-college-credit based solely on ACT, SAT, or other comparable tests commonly administered to high-school students primarily for college admissions purposes. Documents and other proof that students have met the University entrance requirements are kept on file in the Admissions Office, Room 111, Allen Hall.

**c. Early Admission.** A superior secondary-school student may be admitted to the freshman class as an EARLY ADMISSION if he or she (a) has earned a minimum of fifteen (15) acceptable credits, (b) has earned a standard composite ACT score of 25 or an SAT combined score of 1130, (c) ranks in the upper twenty-five (25) per cent of his or her high-school class, and (d) is recommended for early admission in a letter from his or her high-school principal.

**d. Special Program for Academically Talented Students (SPATS).** Academically talented students who (a) have finished at least their junior year in high school, as judged by their high-school officials, (b) in the judgment of parents and high-school administrators are mature enough to profit from a summer's work in college, and (c) have a standard composite score of 25 on the American College Test, may apply for admission to a special summer program in which they may earn regular college credit.

A SPATS student may take a maximum of 6 credit hours (two courses) each summer term, selected from a list available for credit under this program. Courses taken must not be the equivalent of those which the student will take in the senior year of high school. Students are expected to return to high school and finish a normal senior year. The courses may not be substituted for high-school credits to meet college admission requirements. Credit is reserved until the student has graduated from high school. Information concerning the program and application forms may be obtained by writing to: Director, Special Program for Academically Talented Students, Box 5247, Mississippi State, MS 39762.

**e. Admission by Examination.** An applicant who has not graduated from high school may substitute the General Educational Development Test (high school level) for the requirement of high school graduation. The GED will substitute for the requirement of high school graduation only, and not for the other requirements for freshman admission. Therefore, applicants who took the GED must submit an acceptable ACT/SAT score. An interview is required, along with review of other information. Applicants who hold the GED and who cannot meet other requirements for freshman admission may enroll at Mississippi State as transfers after meeting the normal requirements for transfer admission from another regionally accredited institution.

**f. Admission to the College of Veterinary Medicine.** (See College of Veterinary Medicine section in Part II.)

## 2. Special Non-Degree Classification

An applicant who is twenty-one (21) years old and who does not meet the regular freshman admission requirements, may apply to the Admissions Office for acceptance into the Special Non-Degree (SND) student category. Students in this category will be advised by and will schedule classes through the University Academic Advising Center. Applicants must demonstrate adequate preparation for the courses they plan to schedule. SND students may schedule a maximum of twelve (12) semester hours during a regular term and three (3) semester hours during a five-week summer term. To move from the SND status, students should satisfactorily complete twelve (12) semester hours with a C or better average in core courses that are applicable to a degree at MSU. Students wishing to gain reclassification to a traditional major should discuss this during their initial meeting with one of the professional advisors in the University Academic Advising Center. For students admitted to a degree program, a maximum of eighteen (18) semester hours of credit earned while in the SND classification may be counted toward a baccalaureate degree, pending approval by the dean of the college or school from which the degree is sought.

Degree-seeking adult applicants with previous college attendance must meet regular transfer student requirements and, therefore, may not apply for admission under the Special Non-Degree option.

**Non-degree seeking** adult applicants with previous college attendance who do not meet regular transfer requirements may be allowed to schedule courses for self improvement and/or job enhancement only. Applicants should file a letter of intent with the Director of Admissions to enroll under this option.

## 3. Admission of Transfer Students

1. Submit application for admission. Transfer applicants must submit applications by August 1 for considerations for admission for the fall term.
2. Out of state applicants and International students must submit a \$25 non-refundable application fee.
3. Submit an official final transcript from each college or university attended. An applicant may not ignore previous college attendance and must list all colleges attended on the application for admission. An applicant who misrepresents information or fails to provide information about prior college attendance will be subject to disciplinary action, including dismissal from the University.
4. Submit an official high school transcript and ACT or SAT scores if they seek admission under Option 1.
5. Be in good standing at the last college or university attended.

### Admission Option 1:

1. Submit a high school transcript and ACT or SAT scores showing that the applicant qualified initially as a freshman enrollee (see Freshman Entrance Requirements).
2. Earn an overall 2.0 GPA (as computed by Mississippi State University) on all courses attempted at a regionally accredited institution of higher learning.

### Admission Option 2:

Any applicant who does not meet freshman requirements may attend a regionally accredited institution of higher learning and complete the core courses listed below and earn an overall 2.0 GPA (as computed by Mississippi State University) on all hours attempted. Official transcripts from all institutions attended must be submitted.

The applicant must complete the following 24 semester hours of college work at a regionally accredited college:

- 6 semester hours of English composition
- 3 semester hours of college algebra or higher level mathematics
- 6 semester hours of laboratory science
- 9 semester hours of transferable electives

### Admission Option 3:

\* 4 units of mathematics are recommended for Engineering majors, to include Trigonometry.

Any applicant who does not meet freshman requirements may attend a regionally accredited institution of higher learning and earn an A.A., B.S. or equivalent from the regionally accredited institution with a 2.0 GPA (as computed by Mississippi State University). Official transcripts from all institutions attended must be submitted.

Although the transfer applicant may meet general admissions requirements to the University, he/she may not meet the requirements for a specific department. Applicants should contact the academic department for additional requirements.

Transfer work earned from a non-regionally-accredited institution is not acceptable at Mississippi State University and applicants from these institutions must meet the admission requirements as an entering freshman.

International transfer students must meet the requirements in section 4.

**Transfer Credits.** Credits transferred from **regionally accredited** institutions are reproduced on the permanent records of Mississippi State University. Credits earned at another institution while on disciplinary suspension or dismissal may never be transferred or posted to the Mississippi State University record. In the case of students receiving VA benefits, enrollment certificates submitted to the Veterans Administration will reflect proper credit for previous education and training. This is done as a convenience for the student in providing him or her with an accurate consolidated record of his or her entire college career. This action is evidence that the credits are considered valid. **Validity**, however, is not to be confused with **acceptability** or **applicability**.

The Office of Admissions will accept academic transfer hours from other regionally accredited institutions. Depending on the course of study, technical credit may or may not be accepted. Remedial and Vocational credit will not be accepted. To meet graduation requirements, a transfer student must have an overall C (2.00) average, calculated by the method currently in use at Mississippi State University, on all hours scheduled and rescheduled at all institutions attended, including Mississippi State University. Excess quality points earned at other institutions cannot be used to offset any deficiencies at Mississippi State. Acceptance of junior or community college work is limited to one-half the total requirements for graduation in a given curriculum. The last half of the total hours applied toward graduation must be earned in a senior college.

**Applicability** of transfer work depends upon the equivalence of transfer credits with the requirements of a particular curriculum. **Applicability** varies from curriculum to curriculum, not only for transfer students from other institutions but for students transferring from one school or curriculum to another within Mississippi State University. In either case, the upper limit of the number of applicable credits is the number of accepted credits. Applicability is determined by the dean of the college or school to which one is admitted.

Non-traditional credits awarded by another college or university will be evaluated in terms of current policy at Mississippi State University. Unless the basis for awarding the credit is readily identifiable, no credit will be allowed until such time as the student, through the awarding institution, can establish the credibility of the work. Credits for ACT, SAT, CLEP General, or other comparable tests will not be accepted as transfer credit.

#### 4. Admission of International Students

Undergraduate international students must submit the following documents in order to be considered for admission:

1. International application form
2. \$25.00 non-refundable application fee
3. Certified, translated copies of all transcripts, mark sheets and diplomas. **Mississippi State University may void enrollment if an original transcript is not received; if a student is not eligible for readmission to any college formerly attended; or if any document is fraudulent or altered.**
4. Mississippi State's Declaration of Financial Support form
5. Bank or employer letter documenting financial support
6. Required test scores (see below)

**TOEFL Requirement** - All undergraduate international students must submit an acceptable score on the Test of English as a Foreign Language (TOEFL). The university minimum is 525, for paper based test or 195 for computer based tests but many departments have established higher requirements for their own students. TOEFL scores must be no more than two years old and must be verifiable. Completion of intensive English training or English Composition courses at a U.S. college does not waive the TOEFL requirement. Only students who are citizens of Australia, Bahamas, Canada, England, Guyana, New Zealand, Trinidad and Tobago, and Ghana and The Gambia are automatically exempt from this requirement. Citizens of South Africa, Botswana, Lesotho, and Swaziland are only exempt if English is listed as the first language on the Senior Certificate.

**Freshman Admission Requirements** - Diploma from secondary school or secondary leaving examination, Scholastic Aptitude Test (SAT) score of 980 or higher and appropriate TOEFL score.

##### **Transfer Admission Requirements:**

Option A: One year of successful study at a foreign university and appropriate TOEFL score.

Option B: Meet freshman admission requirements and maintain a quality point average of 2.00/4.00 or higher (as evaluated by Mississippi State University) on all college level work attempted.

Option C: Appropriate TOEFL score and 24 semester hours of transferable credit from a regionally accredited U.S. college, with a quality point average of 2.00/4.00 or higher, as evaluated by Mississippi State University, including all of the following credits:

- 6 semester hours of English Composition
- 3 semester hours of College Algebra (or a higher mathematics)
- 6 semester hours of laboratory science
- 9 semester hours of transferable electives

**Transfer Credit from Foreign Universities** - The Office of Admissions certifies appropriate transfer credit from foreign universities. These courses are recorded on the Mississippi State University permanent record with the grade of S, rather than with letter grades. However, these courses are treated as graded courses (rather than pass-fail courses) in satisfying degree requirements. The student's dean has the discretion to apply this transfer credit toward degree requirements or to reject any or all of it, just as with domestic students. Students may be asked to supply course descriptions, syllabi, tests, or other documentation to the dean or department to justify the applicability of a transferred course toward a particular degree requirement. No transfer credit will be awarded for English composition courses completed in colleges or universities outside the United States of America.

**English as a Second Language Course** - Courses in English as a Second Language (ESL) are considered developmental and are not transferable. They may not be used to satisfy any of the requirements for admission listed above. English courses taken at universities in non-English-speaking countries are considered to be ESL courses unless specific documentation is provided that literature, rather than language acquisition, was the primary focus of the course.

**Deadlines for Submission of Materials** - International students who are already inside the United States should submit all required materials for admission at least two months prior to the date of expected enrollment. Students who are outside the United States should apply at least four months in advance of enrollment. Undergraduate international application forms, required declaration of financial support forms, and additional information are available from the following address:

Director of Admissions  
Box 6305  
Mississippi State, MS 39762 USA

#### 5. Admission to Teacher Education

The College of Education is responsible for all teacher education at Mississippi State University. All students who expect to qualify to teach must be formally admitted to the teacher education program. For specific information, see "Admission Procedures in the College of Education" in the College of Education section of the catalog.

## 6. Graduate Admissions

Any person admitted to Graduate Studies for any purpose must hold a bachelor's degree; normally the undergraduate degree must be awarded by an institution having regional accreditation. A prospective applicant, who holds a bachelor's degree from an educational institution that does not have regional accreditation, may request consideration from the Academic Dean of the College or School to which they wish to apply. Such a request to the Academic Dean should be made prior to making application for admission.

The Academic Dean of the College or School may prescribe specific undergraduate level courses as prerequisites to admission without regard to the accreditation status of the institution awarding the bachelor's degree. The Academic Dean of the College or School has the authority to grant admission to all graduate programs in that College or School.

Graduate program areas may prescribe requirements in addition to the above conditions described for regular admission. See the current Graduate Bulletin for additional requirements.

Meeting minimum requirements for admission does not necessarily guarantee admission into a program. Each applicant must compete with all other applicants for availability in the respective programs.

Graduate applicants should consult the Graduate Bulletin or write for information and application materials to this address:

Office of Admissions  
Mississippi State University  
P.O. Box 6305  
Mississippi State, MS 39762

MSU gives preference to self-managed applications. Applicants are encouraged to submit all required materials in one envelope. See Graduate Bulletin for additional information.

## C. LEGAL RESIDENT STATUS

Students are classified as in-state or out-of-state for the purpose of paying University fees. The initial classification will be made by the Admissions Office at the time a student's application for admission is processed. The burden of proof for establishing residency resides with the applicant. If a student misrepresents his or her status, he or she shall be responsible for paying the fees he or she would have otherwise been required to pay and will be subject to disciplinary action or dismissal from school. The University Registrar is authorized to change a student's residence status upon receipt of evidence that the student is improperly classified.

The following state laws and regulations apply to determining the residential status for the purpose of enrolling and paying fees at a state supported institution of higher learning:

No student may be admitted to any institution of higher learning as a resident of Mississippi unless his residence has been in the State of Mississippi preceding his/her admission.

A person who has entered the State of Mississippi from another state and enters an educational institution is considered a nonresident. Even though he/she may have been legally adopted by a resident of Mississippi, or may have been a qualified voter, or landowner, or may otherwise have sought to establish legal residence, such a person will still be considered as being a nonresident of Mississippi if he/she has entered this state for the purpose of enrolling in an educational institution.

**Legal Residence of a Minor.** The residence of a person less than twenty-one (21) years of age is that of the father. After the death of the father, the residence of the minor is that of the mother. If the parents are divorced, the residence of the minor is that of the parent who was granted custody by the court, or, if custody was not granted, the residence continues to be that of the father. If both parents are deceased the residence of the minor is that of the last surviving parent at the time of that parent's death, unless the minor lives with a legal guardian of his or her person duly appointed by a proper court of Mississippi, in which case his or her residence becomes that of the guardian.

**Legal Adoption of a Minor.** Even though a minor may be legally adopted by a resident of Mississippi, he or she remains a nonresident if the parents are domiciled outside the State of Mississippi.

**Legal Residence of an Adult.** The residence of an adult is that place where he or she is domiciled; that is, the place where he or she actually resides with the intent of remaining there indefinitely, or of returning there permanently when temporarily absent.

**Removal of Parents from Mississippi.** If the parents of a minor who is enrolled as a student in an institution of higher learning move their legal residence from the State of Mississippi, the minor is immediately classified as a nonresident student.

**Twelve Months of Residence Required of Adult Students.** No student may be admitted to any institution of higher learning as a resident of Mississippi unless his or her residence, as defined herein above, has been in the State of Mississippi for a continuous period of at least twelve (12) months after becoming 21 years old, and immediately preceding registration for the period concerned (see factors regarding residency below).

**Residence Status of a Married Person.** A married person may claim the residence of his or her spouse, or may claim independent resident status as any other adult.

**Children of Parents Who are Employed by Institutions of Higher Learning.** Children of parents who are members of the faculty or staff of any institution under the jurisdiction of the board of trustees may be classified as residents without regard to the residence requirement of twelve (12) months, for the purpose of attendance at the institution where their parents are faculty or staff members. Full-time faculty and staff are also considered residents. Children or spouses of full-time faculty and staff are not automatically considered residents for tuition purposes at the College of Veterinary Medicine.

**Military Personnel Assigned an Active Duty Station in Mississippi.** Members of the armed forces on extended active duty and stationed within the State of Mississippi, except those military personnel whose active duty assignment in the State of Mississippi is for educational purposes, may be classified as residents, without regard to the residence requirement of twelve (12) months, for the purpose of attending state-supported institutions of higher learning and junior colleges of the State of Mississippi. Resident status of such military personnel who are not legal residents of Mississippi, as defined under "Legal residence of an adult" shall terminate upon their reassignment for duty in the continental United States outside the State of Mississippi.

**Children of Military Personnel.** The resident status of children of members of the armed forces on extended active duty shall be that of the military parent for the purpose of attending state-supported institutions of higher learning and junior colleges of the State of Mississippi during the time that their military parents are stationed within the State of Mississippi and shall be continued through the time that military parents are stationed in an overseas area with last duty assignment within the State of Mississippi, excepting temporary training assignments en route from Mississippi. The resident status of minor children shall terminate upon reassignment under Permanent Change of Station Orders of their military parents for duty in the continental United States outside the State of Mississippi, excepting temporary training assignments en route from Mississippi.

**Certification of Residence of Military Personnel.** A military person on active duty stationed in Mississippi who wishes to avail himself or herself or his or her dependents of these provisions must submit a certificate from his or her military organization showing the name of the military member; the name of the dependent (if for a dependent), the name of the organization of assignment and its address (may be in the letterhead); that the military member will be on active duty stationed in Mississippi on the date of registration at the state-supported institution of higher learning or junior college of the State of Mississippi; that the military member is not on transfer orders; and the signature of the Commanding Officer, the Adjutant or the Personnel Officer of the unit of assignment with signer's rank and title. A military certificate must be presented to the registrar of the state-supported institution of higher learning or junior college of the State of Mississippi each semester or trimester at (or within ten (10) days prior to) registration each semester for the provisions hereof to be effective.

**Aliens.** All aliens are classified as nonresidents except that alien students with permanent resident status, temporary resident status, or refugee status can establish Mississippi residence by meeting the other normal requirements for legal residence under these regulations.

In addition to state laws and regulations, the University has established certain IHL Board approved regulations concerning the payment of non-resident tuition. Mississippi State University (except the College of Veterinary Medicine) may waive a percentage of the non-resident tuition for the following groups of students:

1. Those who are currently awarded athletic scholarships.
2. Those who are currently awarded band scholarships.
3. Those who are currently awarded choral scholarships.
4. All graduate students holding assistantships. (Rules applicable to these awards may be found in the Graduate Studies Bulletin or in the Graduate Assistant Handbook. Both publications are available on the MSU Web: [www.msstate.edu/dept/grad/publications](http://www.msstate.edu/dept/grad/publications).)
5. Children of Mississippi State University alumni. (**Application deadline is April 1**) (For this purpose, an alumnus or alumna is defined as one who has earned a minimum of 48 MSU undergraduate credit hours or 30 MSU graduate credit hours of course work or received a degree from Mississippi State University. Graduate students must maintain a B (3.0) grade point average to continue eligibility for this award. STUDENT AFFAIRS OP 91.178: Policy on Out-of-State Tuition Waivers is available on the MSU Web: [www.msstate.edu/dept/audit/mainindex](http://www.msstate.edu/dept/audit/mainindex).)
6. Non-resident students who are certified participants in The Academic Common Market.

**Academic Common Market.** Academic Common Market out-of-state tuition waivers are available for specific academic programs for students from certain states. Application must be made first with the awarding state. The student must be a legal resident of that state and approved for a specific major at MSU. Both undergraduate and graduate students are eligible to apply. A qualified student must maintain full time status. The waiver is 100 percent of out-of-state tuition and will remain at this level unless the student's field of study changes, or a student no longer has full time status.

To be eligible for the non-resident waiver during the first semester of enrollment, applications and resident verification must be submitted to and approved by the Office of the Provost and Vice President for Academic Affairs prior to the first day of class. For more information about submission and deadlines, please contact that office at 662-325-3742.

Students seeking information on the Academic Common Market waiver should write to the Academic Common Market at the Southern Regional Education Board, 592 10th Street, N.W., Atlanta, GA 30318-5790. The SREB website may be accessed at [www.sreb.org/programs/acm/acmindex.asp](http://www.sreb.org/programs/acm/acmindex.asp).

**Petition for Change of Residency Classification.** A person who enters the State of Mississippi from another state and enters an educational institution is considered a non-resident. Any person who has attained twenty-one (21) years of age and has thereafter actually established residency and resided within the State of Mississippi for twelve (12) consecutive months after attaining twenty-one (21) years of age upon sworn affidavit and other representation, and who can prove financial independence, may petition for a change in residency classification for the purposes of fees and tuition assessment. Residency changes are not retroactive.

1. The institution may make reasonable inquiry into the validity of the petitioner's claim.
2. Such petition for change of residency must be received **prior to the first day of class** of the term for which the student is applying for residency.

#### Factors Regarding Residency

Although domicile and residency for educational purposes are largely matters of intention, this intention is determined objectively from the facts and circumstances surrounding a claim of in-state residency. Some of the factors relevant to determining residency include:

- Actual physical residence of habitation
- Length of actual physical residence- Residence used for income tax, loan, banking and other purposes
- Voter registration
- Motor vehicle registration (Persons moving into the state on a permanent basis have thirty days to register vehicles.)
- Driver's license held (Persons moving into the state on a permanent basis have sixty days to acquire driver's licenses.)
- State to which personal income taxes or other taxes paid
- Status of income sources
- Location of bank, savings and other accounts

**Responsibility for Reporting Change.** It is the individual student's responsibility to report immediately to the Registrar any change which will affect his or her residence status under these regulations.

## D. THE COOPERATIVE EDUCATION PROGRAM

The Cooperative Education Program is a special way of going to college. Increasing numbers of students in various fields are taking advantage of the opportunity the program offers for combining practical experience with formal schooling in a five-year program of alternating semesters of study and gainful work with a cooperating employer. For the qualified student, the program can provide an expanded college education and a direct avenue to a career.

The work under this program is in, or closely related to, the student's field of study. Upon completing at least 52 weeks of alternating work experience in the program and becoming academically eligible for graduation, a co-op student is designated a Cooperative Education Graduate. Permanent job offers to graduates of the Cooperative Education Program often provide substantially higher starting salaries and more responsible positions than for regular four-year graduates. The co-op student is not obligated for permanent employment with his or her employer, nor is the employer obligated to hire him or her upon graduation.

A high-school graduate becomes eligible to begin a work assignment after satisfactorily completing one year at Mississippi State University; during this year he or she must establish at least a 2.50 average (on a 4.00 grading system). The student must be at least 18 years of age to begin the first work semester. Co-op credit hours may not be used to satisfy **University-wide degree requirements**.

A junior-college or senior-college transfer student who has at least a 2.50 overall average (on a 4.00 grading system), is eligible for participation. A student interested in the program who plans to transfer to Mississippi State University should communicate with the Cooperative Education office for application materials.

Qualified students majoring within the following colleges and schools are eligible to participate:

School of Accountancy	College of Business and Industry
College of Agriculture and Life Sciences	College of Education
School of Architecture	College of Engineering
College of Arts and Sciences	College of Forest Resources

The program requires a semester-to-semester rotation. Once a student has accepted employment with one of the cooperating organizations, he or she is expected to regularly rotate each semester from work—to school—to work, etc. Approximate change dates are January 1, May 15, and August 15.

Co-op students are required to pay a \$25.00 registration fee for applicable work semesters. Co-op students may optionally elect to pay part-time student activity fees and a Sanderson Center usage fee during scheduled work semesters. Part-time student activity fees cover use of student facilities, participation in intramural sports, admission to intercollegiate athletic events, the student newspaper (*Reflector*), student health services, and other benefits. Optional activity fees are calculated at the current hourly rate times three (3) hours. Assessment of optional activity fees may be requested and paid at the cashier's office. Co-op students are not required to purchase a yearbook (*Reveille*) and the yearbook fee is not included in the activity fee for part-time students. Co-op students may purchase a yearbook, pending availability, from the *Reveille* office. (All fees are subject to change by action of the Board of Trustees of State Institutions of Higher Learning, State of Mississippi.)

Those interested in learning more about the opportunity of participating in this program with one of the many cooperating industrial, business, or governmental organizations should write to the Director, Cooperative Education Program, Box 6046, Mississippi State, Mississippi 39762 or review the

Co-op web page at [www.coop.msstate.edu](http://www.coop.msstate.edu). Final approval of all students for the program, specifically with respect to the University, rests solely with the University.

## E. NATIONAL STUDENT EXCHANGE

The National Student Exchange program is a consortium of 174 colleges and universities in the United States and extends beyond the borders of the United States to include some Canadian Provinces. Mississippi State University is a member of this program.

The NSE program provides the opportunity for the eligible student to attend a college or university in another state for up to one calendar year without having to pay for the high cost of out-of-state tuition. Students register, pay tuition and fees at Mississippi State University as they usually do; they do not pay tuition and fees at the host campus, but are responsible for room and board.

Mississippi State University students who participate in the National Student Exchange program remain as degree-seeking, registered students at Mississippi State University. Any financial aid that is normally available can be applied to the exchange obligations. Because NSE is an officially approved program of the university, all courses with their respective credit hours and earned grades will be recorded on the Mississippi State University transcript and be calculated in the GPA.

For further information, contact the NSE Coordinator in the Office of Academic Affairs, 608 Allen Hall or (662) 325-3742. You may also review the web site [www.nse.org](http://www.nse.org).

## INTERNATIONAL STUDY PROGRAMS

### COOPERATIVE CENTER FOR STUDY ABROAD (CCSA)

Both undergraduate and graduate students may earn academic credit in courses identified to meet MSU degree requirements by the major department. CCSA courses in diverse disciplines are offered in English-speaking countries abroad – England, Scotland, Ireland, New Zealand, Australia, Kenya and Barbados. Consortium faculty members from the twenty-two American member institutions include outstanding MSU faculty members. Costs of program participation vary according to location and time.

For more information: Cooperative Center for Study Abroad

45 Magruder Street, University Honors Program

[UHP@honors.msstate.edu](mailto:UHP@honors.msstate.edu)

[Bgardner@honors.msstate.edu](mailto:Bgardner@honors.msstate.edu)

[www.msstate.edu/dept/uhp](http://www.msstate.edu/dept/uhp)

(662) 325-2522

### SCHOOL OF ARCHITECTURE

The School of Architecture offers fourth year students the opportunity to study during the fall semester at the University of Plymouth, England or the Delft University of Technology in Delft, The Netherlands where classes are taught in English. Ideally, an equal number of students come from Plymouth and Delft to study at MSU. School of Architecture students are selected by March 1 based upon GPA and faculty assessment of their overall academic careers. These students pay normal MSU tuition.

For more information contact, The School of Architecture, Box AQ, Mississippi State, MS 39762 or 662-325-2202.

### COLLEGE OF ARTS AND SCIENCES

#### Art Study Abroad

In the Department of Art students can have a studio art experience in a stimulatory cultural context. Examples of past encounters include: Horn Island, Gulf of Mexico; Blue Ridge Mountains, North Carolina; Scotland; France. The encounter duration is for a summer only and students enroll at Mississippi State University, pay Mississippi State University tuition and study abroad.

For more information contact, Brent Funderburk, Box 5182, Mississippi State, MS 39762. 662-325-8926 or [brent@ra.msstate.edu](mailto:brent@ra.msstate.edu).

#### Laval University Foreign Language Study Abroad

The Department of Foreign Languages offers a French language program in Quebec City, with the option of an internship in a Canadian business firm. Students will have the unique opportunity to attain fluency in French, while gaining experience in an international setting. The French language program at Laval University is specially designed for non-native French speakers. Courses are taught every morning, Monday through Friday, for a period of four hours by carefully selected native French speakers. A 3-day review session and introduction to Quebec City will precede the start of classes. Students will be awarded 7 credit hours for the language component of the program. In addition, 2-5 credit hours may be earned from MSU upon completion of a project agreed upon by the student and the director of the program. Honors credit may be arranged for this program.

For more information contact, Dr. Edmond Emplaincourt, Box FL, Mississippi State, MS 39762. 662-325-3480.

#### Pueblo, Mexico Foreign Language Study Abroad

The Department of Foreign Languages will offer FLS 2133 and FLS 2143 in Pueblo, Mexico. This unique opportunity helps students sharpen language skills and satisfy the foreign language requirement with six hours of credit in Spanish. Classes held each morning provide a basic review of grammar, readings at an intermediate level, and intensive oral-aural practice. Special assignments and afternoon activities with native "acompanantes" will help to involve students linguistically, socially, and culturally in their Mexican history and folklore of Mayan, Aztec, and Toltec civilizations. The opportunity to study the Spanish language in its natural setting is a unique and unforgettable experience.

For more information contact, Dr. Edmond Emplaincourt, Box FL, Mississippi State, MS 39762. 662-325-3480.

#### Quebec, Canada Foreign Language Study Abroad

The Department of Foreign Languages will offer FLS 2133 and FLS 2143 in Quebec City, Canada to help sharpen language skills in French and to fulfill the foreign language requirement with 6 hours credit in French. Classes are designed for intermediate level students, provide over 17 hours a week of review of grammar, intensive oral-aural practice and readings, plus being a French-speaking area makes this a unique educational experience. Classes are held in the morning, leaving the afternoon and evening to study, for extra-curricular activities, or to explore on your own the museums, monuments and other places of interest of this city where you will find a rich blend of two cultures, North American and French. Organized excursions take students through historic and modern Quebec City, the Beapre Coast, the Island of Orleans, the beautiful Montmorency Falls, Parliament and several museums.

For more information contact, Dr. Edmond Emplaincourt, Box FL, Mississippi State, MS 39762. 662-325-3480.

#### San Jose, Costa Rico Foreign Language Study Abroad

Specially recommended for Foreign Language majors, International Business double-degree majors, double majors and minors. Limited to 15 students. Participants take two upper-division courses, Advanced Spanish, and Business Spanish at the University of Costa Rica. Taught specifically for our students in the morning by faculty from UCR. Each course will carry three credit hours. In the afternoon, participants have internships in businesses selected and supervised by the Chamber of Commerce of Costa Rica. Three hours of credit in FLS will be given for a project on the internship. Total credit hours is 9.

For more information contact, Dr. Edmond Emplaincourt, Box FL, Mississippi State, MS 39762. 662-325-3480.

#### Bahamian Field Program



The Bahamian Field Program was developed at MSU, in cooperation with the Bahamian Field Station (BFS) on San Salvador Island, Bahamas, to present MSU undergraduate and graduate students the opportunity to do field research in a cultural and physical environment unlike that found in Mississippi. Faculty, in addition to mentoring undergraduate and graduate students, have been able to develop additional research projects of their own. The program is generally run over the winter break, after Christmas but prior to the start of the Spring semester, and occasionally between the spring semester and the start of summer school. The BFS is affiliated with MSU, which grants MSU students and faculty reductions in costs and increased access to field sites.

The field course begins with structured field trips to expose students to the environment of living and fossil reefs, caves, beaches, inland water bodies, archaeological sites, lagoons, and other sites of natural history significance. Evening lectures are given, and labs are used to analyze samples. As students gain a greater familiarity with the island's many environments, they make decisions about doing research projects with faculty, graduate students, other students, or alone. The remainder of the time on the island is used to execute these research projects. Students are encouraged to schedule free time to enjoy both the Bahamian culture and the scenic landscapes. All students are required to keep a journal and submit it in at the end of the trip.

For more information contact, John Mylroie, Box 5448, Mississippi State, MS 39762. 662-325-8774 or mylroie@geosci.msstate.edu.

## COLLEGE OF BUSINESS AND INDUSTRY

### International Business Academic Internship

The International Internship is an agreement among Mississippi State University, the International Business Academic Programs' student and a company in this area. The intern work experience builds skills in business application and provides cultural immersion while living abroad. A business resume, passport, and academic achievement are required to participate.

For details, see the Director of International Business Programs, John Lox, Box 9582, Mississippi State, MS 39762. 662-325-7005 or jlox@cobilan.msstate.edu

## COLLEGE OF ENGINEERING

### Engineering Summer Study Abroad

The Engineering Summer Study Abroad Program takes place during the time frame of MSU's second summer session (July-August). It includes 4 weeks of study at the University of Bristol, one of the top engineering universities in England. Students live with local families who provide them 2 meals a day. The experience of living with a host family is one of the most rewarding experiences of the trip. After the 4 weeks of study in Bristol, the students have 2 weeks for independent travel in Europe. The students receive six credit hours toward their engineering degree. Three credit hours are for HI 4653, The History for Science and Technology, which can be used as a humanities elective. The other three hours are for Computer Aided Design and Manufacturing, which can be used as a technical elective in engineering.

For more information you may contact, Dr. Roger King, Box 9571, Mississippi State, MS 39762. 662-325-3912 or rking@ece.msstate.edu .

### Global Engineering Educational Exchange

The Global Engineering Education Exchange is a consortium of US engineering institutions with counterpart institutions in Europe, Latin America, and Asia to provide reciprocal opportunities for undergraduate and graduate students to receive academic and practical training in each other's countries with no net exchange of funds between participating universities. Students spend a complete term at the international institution. Courses are selected with an academic advisor to apply toward MSU engineering degrees. Students pay tuition and fees at MSU. Scholarships and other financial aid can still apply. Many institutions are available where English is the language of instruction.

For more information you may contact, Dr. Roger King, Box 9571, Mississippi State, MS 39762. 662-325-3912 or rking@ece.msstate.edu

## III. DEGREES, REQUIREMENTS, ADVISEMENT, THE ACADEMIC PROCESS, GRADUATION

### A. DEGREES, DEGREE REQUIREMENTS, and SCHEDULING

**1. Baccalaureate Degrees Offered.** The University awards the following baccalaureate degrees: Bachelor of Arts (B.A.), Bachelor of Business Administration (B.B.A.), Bachelor of Fine Arts (B.F.A.), Bachelor of Science (B.S.), Bachelor of Landscape Architecture (B.L.A.), Bachelor of Music Education (B.M.E.), Bachelor of Architecture (B.Arc.), Bachelor of Accountancy (B.P.A.), and Bachelor of Social Work (B.S.W.) (Master's, Specialist, and Doctor's degrees are listed and described under Office of Graduate Studies later in this catalog, and in the Graduate Bulletin.)

**2. University-Wide Requirements.** In order to complete a baccalaureate degree, a student must (1) satisfactorily complete the curriculum requirements, (2) make an overall C average on all hours scheduled and rescheduled at all institutions attended, including Mississippi State University, (3) make a C average on all hours scheduled and rescheduled at Mississippi State University, (4) complete in residence at Mississippi State University no less than 1/4 of his/her degree program in junior and senior subjects (courses numbered 3000 through 5000) approved by the dean of the college or school in which he or she is enrolled, and (5) complete the last 32 hours of course work taken to fulfill degree requirements in residence at Mississippi State University. (Any exception to the 32 hour residence requirement must be made in writing with the Dean **prior** to taking course work at another institution.)

**a. Board of Trustees Core Curriculum.** All students who enter Mississippi State University as first-time entering freshmen in the fall semester of the 1984-85 academic year, or later, must meet the common core curriculum requirements approved by the Board of Trustees, Institutions of Higher Learning of the State of Mississippi, to qualify for any bachelor's degree. This core curriculum consists of:

English Composition	6 semester hours
College Algebra	3 semester hours
Laboratory Science	6 semester hours
Humanities and Fine Arts	9 semester hours
Total:	24 semester hours

(Note: These requirements are included in the University Core Curriculum which follows.)

**b. University Core Curriculum.** All students graduating after January 1, 1990, in order to receive any bachelor's degree from Mississippi State University, must earn a minimum of 45 semester hours of credit (or equivalency) in courses making up the University Core Curriculum, as follows. (Specific courses to satisfy the Core Curriculum will vary by academic major.)

Students may obtain list from their advisor or Dean's office of courses SELECTED from the following approved to meet individual Degree requirements.

English Composition	6 semester hours
Refer to Core Curriculum Requirements—Numbers and Course Titles for approved choices.	
Mathematics and Natural Sciences:	15 semester hours
Mathematics: 6-9 semester hours, including College Algebra (MA 1313 or equivalent) and at least one additional college-level mathematics course. Approved choices: Mathematics: MA 1323, 1463, 1613, 1623, 1713, 1723, 1763, 1773, 3113, 2733, 2743, 2783, 2793; Statistics: ST 2113, 3113. (Special and elementary education majors only: MA 1413, 1423, 1433.)	
Natural Sciences: 6-9 semester hours, including laboratory work in at least two courses. (Credit by examination does not carry laboratory credit.) Approved choices: Biological Sciences: BIO 1004, 1023, 1043, 1123, 1203, 1504, 3304; Chemistry: CH	

1043, 1053, 1211, 1221, 1051, 1213, 1223, 1293; Entomology: EPP 4154; Geology: GG 1111, 1113, 1121, 1123, 1151, 1153, 1161, 1163; Geography: GR 1114; Physics: PH 1013, 1023, 1041, 1042, 1011, 1063, 1021, 1113, 1123, 1133, 2213, 2223, 2233; Poultry: PO 3103. (Architecture majors only: ARC 2713.)

Humanities/Fine Art	9 semester hours
Six hours must be humanities and three hours must be fine art.	
Refer to Core Curriculum Requirements—Numbers and Course Titles for approved choices.	
Social/Behavioral Sciences	6 semester hours
Refer to Core Curriculum Requirements—Numbers and Course Titles for approved choices.	
Public Speaking	3 semester hours
Refer to Core Curriculum Requirements—Numbers and Course Titles for approved choices.	
Junior/Senior-Level Writing	3 semester hours
At least one upper-level (junior/senior) course in which writing is the major component. Consult an advisor in your major.	
Computer Literacy	3 semester hours
At least one course in which use of the computer is the major component. Departments determine the course acceptable for their majors.	
Total:	45 semester hours

**Core Curriculum Requirements—Numbers and Course Titles**

**NOTE:** Students must check course descriptions of core classes for prerequisites and/or grade requirements.

**English Composition—Freshman level (6 hours)**

EN 1103	English Composition I	EN 1113	English Composition II
EN 1163	Accelerated Composition I	EN 1173	Accelerated Composition II
EN 1183	Honors Composition I	EN 1193	Honors Composition II

**Public Speaking (3 hours)**

CO 1003	Fundamentals of Public Speaking	CO 1093	Honors Oral Communication
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**Mathematics and Statistics (6-9 hours)**

MA 1313	College Algebra or MA 1303	MA 1303	Quantitative Reasoning
MA 1323	Trigonometry (fulfills second mathematics only with Credit for college algebra)	MA 1463	Finite Mathematics and Introduction to Calculus
MA 1123	Informal Geometry and Measurement (Special and elementary education majors only)	MA 1113	Structure of the Real Number System (Special and elementary education majors only)
MA 1623	Calculus for Business and Life Sciences II	MA 1613	Calculus for Business and Life Sciences I
MA 1723	Calculus II	MA 1713	Calculus I
MA 1773	Honors Calculus II	MA 1763	Honors Calculus I
MA 2733	Calculus III	MA 3113	Introduction to Linear Algebra
MA 2783	Honors Calculus III	MA 2743	Calculus IV
ST 2113	Statistics for the Behavioral Sciences	MA 2793	Honors Calculus IV
		ST 3113	Introduction to Statistical Inference

**Natural Sciences (6-9 hours)**

ARC 2713	Passive Building Systems I (Architecture majors only)	BIO 1001	Biology Lab*
BIO 1004	Anatomy and Physiology*	BIO 1023	Plant and Humans*
BIO 1033	Biological Science*	BIO 1203	Plant Biology*
BIO 1123	Animal Biology*	BIO 1504	Principles of Zoology*
BIO 3304	General Microbiology*	CH 1043	General Chemistry
CH 1053	General Chemistry	CH 1211; 1221	Investigations in Chemistry (Lab)
CH 1051	Experimental Chemistry (Lab)	CH 1213	Fundamentals of Chemistry
CH 1223	Fundamentals of Chemistry	CH 1293	Honors in Chemistry
EPP 4154	General Entomology*	GG 1111	Earth Sciences I (Lab)
GG 1113	Survey of Earth Sciences I	GG 1121	Earth Sciences II (Lab)
GG 1123	Survey of Earth Sciences II	GG 1151	Earth Materials and Processes (Lab)
GG 1153	Geology for Scientists and Engineers	GG 1161	Earth's History (Lab)
GG 1163	Earth's History	GG 1183	Honors in Physical Geology
GG 1193	Honors in Historical Geology	GR 1114	Elements of Physical Geography
PH 1013	Physical Science Survey	PH 1023	Physical Science Survey
PH 1041	Physics Laboratory A	PH 1042	Physics of Sound and Music
PH 1011; 1021	Physical Science Lab	PH 1063	Descriptive Astronomy
PH 1113	General Physics	PH 1123	General Physics
PH 1133	General Physics	PH 2213	Physics I
PH 2223	Physics II	PH 2233	Physics III
PO 3103	Genetics I*	PH 2283	Honors Physics I
PH 2293	Honors Physics II		

\* Life Sciences indicated with \*; remaining Natural Sciences are considered Physical Sciences

**Humanities (at least 6 hours)**

EN 2203	Introduction to Literature	EN 2213	English Literature
EN 2223	English Literature	EN 2243	American Literature
EN 2253	American Literature	EN 2273	World Literature
EN 2283	World Literature	EN 2383	Sophomore English Honors
EN 2393	Sophomore English Honors	FL* 1113;1114	Elementary Foreign Language
FL* 1123;1124	Elementary Foreign Language	FL* 2133;2143	Intermediate Foreign Language
FL* 2183	Honors Foreign Language III	FL* 2193	Honors Foreign Language IV
HI 1213	Early Western World	HI 1183	Honors Problems in Modern World Civilization
HI 1063	Early U.S. History	HI 1073	Modern U.S. History
HI 1083	Honors Problems in American Civilization	HI 1163	World History Before 1500
HI 1173	World History Since 1500	HI 1223	Modern Western World
HI 3813	Modern Latin America	PHI 1103	Introduction to Philosophy
PHI 1113	Introduction to Logic	PHI 1123	Introduction to Ethics
PHI 1183	Honors Introduction to Philosophy	PHI 1193	Honors in Ethics
PHI 3023	History of Western Philosophy: Part I	PHI 3033	History of Western Philosophy: Part II
PHI 3013	Business Ethics	PHI 2133	Introduction to Aesthetics

REL 1103	Introduction to Religion	REL 3213	World Religions: Part I
REL 3223	World Religions: Part II		

\* French, German, Greek, Japanese, Latin, Russian, and Spanish

#### Fine Arts (3 hours)

ARC 1013	Architectural Appreciation	ARC 2313	History of Architecture I
ARC 3313	History of Architecture II	ARC 3323	History of Architecture III
ART 1013	Art History I	ART 1023	Art History II
ART 1113	Art Appreciation	ART 1193	Honors in Art Appreciation
ART 3143	Italian Renaissance Art History	CO 1503	Introduction to Theater
PSS 2343	Floral Design	LA 1803	Landscape Architecture Appreciation
MU 1113	History and Appreciation of Music	MU 2213	History and Literature of Music I
MU 2323	History and Literature of Music II	PE 1123	History and Appreciation of Dance
TKI 2413	History and Appreciation of the Arts		

#### Social/Behavioral Sciences (6 hours)

AEC 2713	Introduction to Agricultural Economics	AN 1103	Introduction to Anthropology
AN 1193	Honors Introduction to Anthropology	AN 1343	Introduction to Biological Anthropology
AN 1143	Introduction to Cultural Anthropology	AN 1543	Introduction to Archaeology
AS 3013	Air Force Leadership and Management I	AS 3023	Air Force Leadership and Management II
AS 4013	National Security Forces in Contemporary Society I	AS 4023	National Security Forces in Contemporary Society II
CO 1223	Introduction to Communication Theory	CO 1403	Introduction to Mass Media
CO 4213	Political Communication	CO 4223	Advanced Communication Theory
CO 4323	Mass Media and Society	EC 2113	Principles of Macroeconomics
EC 2123	Principles of Microeconomics	EC 2183	Honors Principles of Macroeconomics
EC 2193	Honors Principles of Microeconomics	EPY 2513	Human Growth and Development
EPY 3543	Psychology of Adolescence	EPY 3503	Prin. of Educational Psychology
GR 1123	Introduction to World Geography	GR 2013	Cultural Geography
GR 3113	Conservation of Natural Resources	GR 4123	Urban Geography
GR 4203	Geography of North America	MS 3113	Advanced Military Skills I
MS 3123	Advanced Military Skills II	MS 4113	2nd Year Advanced Army ROTC
MS 4123	2nd Year Advanced Army ROTC	PS 1113	American Government
PS 1193	Honors in American Government	PS 1313	Introduction to International Relations
PS 1393	Honors in International Relations	PS 1513	Comparative Government
PS 1593	Honors in Comparative Government	PS 2713	Politics of American Bureaucracy
PSY 1013	General Psychology	PSY 1093	Honors in General Psychology
PSY 2153	Psychology of Adjustment	PSY 3073	Psychology of Interpersonal Relations
SO 1003	Introduction to Sociology	SO 1093	Honors in Introduction to Sociology
SO 1103	Contemporary Social Problems	SO 1203	Marriage and Family

#### Computer Literacy (3 hours)

At least one course in which use of the computer is the major component. Departments determine the course acceptable for their majors.

#### Junior/Senior-level Writing (3 hours)

At least one upper-level (junior/senior) course in which writing is the major component. Consult an advisor in your major.

**3. Other Degree Requirements.** The announcements of the various colleges and schools specify the additional requirements for the bachelor's degree in the various departments and programs.

**4. Second Baccalaureate Degree Requirements.** In order for a student to qualify for a second baccalaureate degree, requirements for the second degree must be certified by the appropriate dean as having been met and must include 30 hours in courses numbered 3000 or above, in residence beyond the requirements for the first degree.

**5. Advisement and Registration.** Every student in the University is provided with an academic advisor. A student who has selected a specific major will find the names of the advisors for that major listed under the name of the department or the major subject in the appropriate college or school section in Part III of this catalog. A student who is uncertain of his or her choice of major may register as Undeclared. In addition, advisors are assigned in the appropriate colleges for students wishing to pursue degrees in General Agriculture, General Business, General Liberal Arts, and General Science.

Before registering for any semester, each student is responsible for consulting his or her advisor to work out and secure approval for a specific schedule of courses. With the signed schedule, the student then enters his/her schedule in the computer by using the MSU-INFO system or Student/Faculty Web System, resolves conflicts, and the student is officially enrolled in each class on the perfected schedule.

A period for schedule planning and registration for the following semester is provided near the end of each regular term; registration for the summer school terms may also be accomplished in the spring registration period. Prospective new students may be advised and register during Summer Orientation. Late registration, as always, is conducted immediately prior to the beginning of classes.

A student who for any reason has been unable to register during these scheduled registration periods may still do so up to the last day for registration and adding courses as listed in the Academic Calendar, but may find the choices of courses and sections limited.

**6. Readmission.** Students who have previously attended Mississippi State University and who wish to re-enter must apply for readmission and secure a registration permit from the Registrar's Office. Former students who have attended another college for at least one quarter or semester must be eligible to re-enter that institution, if they desire to return to Mississippi State University. Students who have attended another institution are required to provide the Registrar's Office official transcripts from all other institutions attended prior to receiving a registration permit. Provisional permits may be issued to former MSU students whose MSU and cumulative GPA's are 2.0 or higher.

All readmission students must meet the academic standing guidelines outlined in section 4-Academic Standing. If their GPA is less than the required average, they may be readmitted only on the recommendation of their dean and with the approval of the provost.

Students readmitted with an MSU or cumulative average less than 1.95 will be readmitted on academic probation.

**7. Student Load.** The normal load for an undergraduate student in a regular semester is 15-18 credit hours. Mississippi State University has established undergraduate student course limits based on cumulative and MSU grade point averages. The limits are as follows:

- (1) Students whose GPA is below a 1.95 GPA are limited to 14 semester hours including ensemble and academic support/developmental classes.
- (2) Students whose GPA is between a 2.0 and 2.99 GPA are limited to 19 semester hours excluding music ensemble classes.
- (3) Students between a 3.0 and 4.0 GPA may elect to take up to 24 semester hours. Students in this category must secure permission of their advisor and academic department head to schedule more than 19 semester hours.
- (4) Entering freshmen and transfer students without an established GPA will be limited to 19 semester hours.

With the dean's approval, a student with a 3.5 or higher GPA in the preceding semester may take one course in addition to the normal load during one of the summer sessions. A student with an overall cumulative GPA of 3.5 or higher may take one course in addition to the normal load in each of the two summer sessions.

Independent study or extension courses will be included in determining the maximum number of hours a student may take on campus, if registration therein overlaps any period of regular enrollment at the University. Such credits earned by either independent study or extension, in excess of the loads specified above must be approved by the student's dean; these hours will count in certifying a student's full time or part time enrollment status for financial aid or other purposes.

For purposes of reporting a student as full-time to the Board of Trustees, Veterans Administration, Social Security or other similar agencies, an undergraduate student must be enrolled in at least twelve (12) semester hours and a graduate student must be enrolled in at least nine (9) or more semester hours at the time the report or certification is submitted. This applies to fall and spring semesters only.

(1) A student's enrollment status is classified according to the following chart:

	Regular Fall-Spring Semesters		Summer School term*	
	Undergraduate Students	Graduate Students	Undergraduate Students	Graduate Students
Full-time	12 sem. hrs. or more	9 sem. hrs. or more	6 sem. hrs. or more	6 sem. hrs. or more
Half-time	6 to 11 sem. hrs.	5 to 8 sem. hrs.	3 to 5 sem. hrs.	3 to 5 sem. hrs.
Less than Half-time	less than 6 sem.hrs.	less than 5 sem.hrs.	less than 3 sem.hrs.	less than 3sem.hrs.
"Regular" Load	15-18 sem. hrs.	12-15 sem. hrs.	6 sem. hrs.	6 sem. hrs.

(2) Concurrent enrollment in independent study, off-campus centers and other institutions will be considered as part of a student's load, and must be approved by his or her dean before it may apply toward meeting degree requirements. All MSU course hours will count in certifying a student's full time or part time enrollment status for financial aid or other purposes.

**8. College/School Changes.** A student changing from one college or school to another must complete all arrangements for the transfer prior to beginning the new course of study. Before making the change, the student must initiate a change form in the Office of the Registrar or the college or school in which the student is currently, or was last, enrolled. Transfer to a new college or school is subject to approval by the new dean.

**9. Schedule Changes - Fall and Spring Semesters.** A student has through the fifth class day into the semester to add a course and through the tenth class day to drop a course without being assessed a fee or academic penalty. After the tenth class day through the 30<sup>th</sup> class day, a student who elects to drop a course must receive the approval of his/her advisor, will be assigned a "W" on his/her academic record, and be assessed a \$50.00 fee. After the 30<sup>th</sup> class day, a student cannot drop courses except in documented cases of serious illness, extreme hardship, or failure of the instructor to provide significant assessment of his/her performance. A request to drop a course after the 30<sup>th</sup> class period must be approved by the student's advisor and academic dean (Dean of Graduate Studies for graduate students). A student receiving permission to drop will receive a "W" on his/her academic record and be assessed a \$50.00 fee after the last day to drop a course.

**Summer Terms.** A student has through the third class day into a 5-week summer term and through the sixth class day into a 10-week summer term to drop a course without being assessed a fee or an academic penalty. A student may not add a course after the third class day into a 5-week summer session or after the sixth class day into a 10-week summer session. After the third class day through the 14<sup>th</sup> class day in a 5-week summer term and the sixth class day through the 28<sup>th</sup> class day in a 10-week summer term, a student who elects to drop a course must receive the approval of his/her advisor, will be assigned a "W" on his/her academic record, and be assessed a \$50.00 fee. After the 14<sup>th</sup> class day into a 5-week summer term and after the 28<sup>th</sup> class day into a 10-week summer term, a student cannot drop a course except in documented cases of serious illness, extreme hardship, or failure of the instructor to provide significant assessment of his/her performance. A request to drop a course during this period must be approved by the student's advisor and academic dean (Dean of Graduate Studies for graduate students). A student receiving permission to drop will receive a "W" on his/her academic record and be assessed a \$50.00 fee.

**Undergraduate/Graduate Policy -** Regardless of these and/or other University policies, a student's dean may remove a course (or courses) from a student's schedule at any time during a period of enrollment in case of special circumstances such as accident, illness or scheduling errors. Requests for such changes should be directed to the student's dean. A student will not be permitted to drop a course after the 30<sup>th</sup> day of classes because of a heavy course load, a change of major, or the likelihood of poor grades. All requests must be documented in writing.

**10. Auditing.** During registration and the first ten days of class in the semester, students are not permitted to enter classes as auditors unless authorized by the Dean of the College or School and by the Registrar, **upon recommendation of the instructor concerned.** A student may not change from credit to audit or audit to credit status after the tenth day of class. A course being audited counts as part of the regular load on the same basis as if taken for credit. Auditors are not required to take tests and/or examinations or to prepare other written assignments. Otherwise, conformity to regular classroom decorum is the same as that required for all students. At the time the request for audit is approved, the professor will inform the auditor of attendance expectations.

**11. Pass-Fail Option.** An undergraduate student who has successfully passed fifteen (15) semester hours may elect, with the approval of his or her academic dean, to schedule courses under the pass-fail option. This program is open to undergraduate students only and is limited to a maximum of four (4) courses, no more than two (2) of which may have the same course symbol.

A student may register under the pass-fail option for only one course per semester and must meet the prerequisites for the course or have permission of the instructor teaching it. A change from pass-fail enrollment to enrollment for a regular grade, or vice-versa, must be made by the deadline date for adding courses published in the University calendar.

Courses taken to satisfy University core requirements may not be scheduled under the pass-fail option, nor may courses that are specified by course title in the curriculum in which a student is currently enrolled. In the event that a student changes majors, credit for any courses passed and required in the new major may be allowed with the approval of the student's dean. The instructor shall be informed which students are enrolled in his or her course under the pass-fail option, and he or she shall report a regular grade at the time progress grades are submitted and either S for satisfactory or U for unsatisfactory at the end of a term or semester. A grade of A, B, or C will be considered as satisfactory and a grade of I (incomplete) will be allowed. Other than a grade of I, only a grade of S, U, or W will be recorded on a student's permanent record.

The number of hours passed will be applied toward the hours required for graduation; however, neither a passing nor a failing grade will be considered in the computation of the grade point average.

**12. Assessment.** Students may be required to undergo testing for the purpose of assessing institutional effectiveness.

**13. ROTC Course Credit Toward Academic Degrees.** All ROTC courses are bona fide University courses. The total number of ROTC hours allowed as elective credit toward a specific degree varies. Most schools and colleges at the University accept six (6) or more hours of ROTC courses offered toward degrees conferred. The advanced ROTC courses are options for meeting social/behavioral science core requirements. A student should contact the appropriate college, school, or department to determine allowable ROTC course credit toward a particular degree.

**14. Military Credit.** Mississippi State University offers credit for training and experience in the Armed Services to currently enrolled students. Those wishing to receive this credit must furnish the University Registrar's Office with a DD214 (discharge papers), a DD295, or a Certificate of Achievement. The student's dean will determine applicable credit toward a degree. Air Force veterans may request Community College of the Air Force transcripts by

\* Enrollment status for any semester or summer term is based on the total number of hours attempted during that term. For the summer term, the enrollment status is calculated on the combined number of hours attempted during the three (3) summer terms.

writing directly to their Registrar at CCAF/RRRA, Simler Hall, Suite 128, 130 W. Maxwell Blvd., Maxwell AFB, AL 36112-6613. The transcript should be forwarded to the Office of Admissions.

## B. ACADEMIC RECORDS

### 1. Confidentiality and Disposal of Student Records

The University recognizes that the maintenance of student information and educational records is necessary and vital to assist the student's education and development and to provide opportunities for University research and policy formulation. The University recognizes its obligation to exercise discretion in recording and disseminating information about students to insure that their rights of privacy are maintained.

The University will furnish annual notification to students of their right to inspect and review their educational records/ the right to request amendment of educational records considered by them to be inaccurate or misleading or that violate privacy or other rights; and of their right to a hearing should the University decline to amend such records. This annual notice will be published in the University's Bulletin. The University utilizes The Guide for Retention and Disposal of Records as published by American Association of Collegiate Registrars and Admissions Officers as the policy for disposal of student records.

The following guidelines have been developed to insure the privacy rights of students. For the purposes of this policy statement a student is defined as an individual who has been admitted and has been in attendance in a component unit of the University. Classification as a student in one component unit of the University (e.g., an undergraduate program) does not infer that the person has been accorded the rights outlined below in other component units (i.e., graduate school, professional schools, branch campus).

### 2. Student Access to Records

Students have the right to be provided a list of the type of educational records maintained by the University which are directly related to the student; the right to inspect and review the contents of these records; the right to obtain copies of these records; the right to a response from the University to reasonable requests for explanation and interpretation of these records; the right to an opportunity for a hearing to challenge the content of these records; and if any material or document in the educational record of a student includes information on more than one student, the right to inspect and review only the part of such material or document as relates to the student.

Students do not have access to: financial records of their parents; confidential letters and statements of recommendation which were placed in the educational record prior to January 1, 1975, provided such letters or statements were solicited or designated as confidential and are not used for purposes other than those for which they were specifically intended; confidential recommendations, if the student signed a waiver of the right of access, respecting admission, application for employment, and the receipt of an honor or honorary recognition.

Students do not have access to: instructional, supervisory, and administrative personnel records which are not accessible or revealed to any other individual except a substitute; Campus Security records which are maintained apart from educational records, which are used solely for law enforcement purposes, and which are not disclosed to individuals other than law enforcement officials of the same jurisdiction; employment records except when such employment requires that the person be a student; and the Alumni Office records.

Students do not have access to physical or mental health records created by a physician, psychiatrist, psychologist or other recognized professional acting in his or her capacity or to records created in connection with the treatment of the student under these conditions which are not disclosed to anyone other than individuals providing treatment. These records may be reviewed by a physician or appropriate professional of the student's choice.

### 3. Procedures for Access

Students should contact the appropriate office to inspect and review their records. An office may require that a University official be present when a student inspects and reviews his educational records. Any questions concerning a student's access to records should be directed to the Registrar.

### 4. Release of Directory Information

Directory information may be released by the University without the student's written consent. Directory information is identified in Academic Operating Policy and Procedure AOP 12.13 Academic Record. It also includes email addresses. Participation in recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended, and other similar information is considered directory information.

A student may deny the release of directory information by requesting that the information not be released. The student who is in attendance must notify the Registrar's Office in writing to deny the release of this information. To deny the release of participation in recognized activities the student must notify the Provost and the Academic Dean in writing. To deny the release of athletic information the student must notify the Directory of Athletics in writing. To deny the release of directory information a student must give the above notification prior to registration. A former student, one who is not in attendance, must contact the appropriate offices above to deny the release of directory information.

Student Directory Information will be made available to private businesses, religious organizations, and other non-university organizations in the following manner: (1) the *Campus Directory* for the current school year is available for purchase in the MSU Bookstore. While the *Campus Directory* is believed to be accurate (some students may have requested their names not be listed), the University is not responsible for inaccuracies in the data; (2) a list or computer labels will not be available to any non-university group; (3) appeals will be handled by a subcommittee composed of the Registrar, the Director of Admissions, and the Dean of Office of Graduate Studies.

### 5. Release of Educational Records

The University will release a student's educational record(s) upon the student's written request. The student must:

1. Specify the records to be disclosed.
2. Include the purpose or purposes of the disclosure.
3. State the party or parties and the address to whom the information is to be disclosed.

The student shall, upon request, receive a copy of the record that is to be disclosed. It is University policy to furnish single copies of a student's record at no charge except for the standard transcript fee, if applicable.

The University may release students' educational records to the following without prior written consent:

1. University officials who have a legitimate educational interest in the records. University officials are defined as teachers, administrative personnel and other employees except personnel of the security or law enforcement unit of Mississippi State University who in the performance of their normal duties require access to student records. If University officials are required in the performance of their duties to review the educational records of a student, this will be considered to be a legitimate educational interest.

2. Officials of another school in which the student intends to enroll upon request of the transfer school.

3. Government representatives of the Comptroller general of the United States, the Secretary of Education, the U.S. Commissioner of Education, the Director of the National Institute of Education, the Assistant Secretary for Education, State educational authorities, and State officials to whom such information is specifically required to be reported or disclosed by State law adopted prior to November 19, 1974.

4. Appropriate authorities in connection with financial aid with the understanding that only the necessary records will be released.

5. Organizations conducting studies for, or on behalf of, the University or its agencies for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction and student life provided that the studies will not permit the personal iden-

tification of students and their parents by individuals other than representatives of the organization and provided that the personally identifiable information furnished will be destroyed when no longer needed for the purposes for which the study was conducted.

6. Accrediting organizations to carry out their accrediting functions.
7. Parents of a dependent student as defined in section 152 of the Internal Revenue code of 1986. University officials may release educational records to parents on the basis of written certification from the parent that the student is a dependent as defined under the Code.
8. Comply with a judicial order or lawfully issued subpoena with the understanding that the student will be notified in advance insofar as possible.
9. Appropriate parties to protect the health and safety of the student or other individuals in emergencies with the understanding that only information essential to the emergency situation will be released, that information will only be released to a party who would be in a position to deal with the emergency, and that the student will be notified insofar as possible of the information released, the purpose for the release, and to whom the information was released.

No personal information on a student will be released without a statement from the University to the party receiving the information that no third party is to have access to such information without the written consent of the student.

This policy is adopted pursuant to the Family Educational Rights and Privacy Act of 1974, as amended (20U.S.C. #8 1232g), and is not intended to impose any restrictions or grant any rights not specifically required by this Act.

### 6. Disciplinary Suspension and Expulsion

The following information will be recorded on a student’s academic record:

1. Permanent Expulsion - a “W” grade will be recorded on the permanent record for each course on the student’s schedule at the time of expulsion. “Permanent Expulsion” and the effective date will also be placed on the permanent record. This will remain on the permanent record indefinitely or until an appeal is held by the Dean of Students and the expulsion is approved for removal. In a case of appeal and approval by the Dean of Students to remove the expulsion, the words “Permanent Expulsion” will be replaced by the word “Withdraw”.
2. Disciplinary Suspension - a “W” grade will be recorded on the permanent record for each course on the student’s schedule at the time of suspension. “Disciplinary Suspension” and the effective date will also be recorded on the permanent record. Students may petition the Dean of Students to have “Disciplinary Suspension” removed from the permanent record. If the Dean of Students approves the request, the words “Disciplinary Suspension” will be replaced by the word “Withdraw”.
3. Credits earned at another institution while on disciplinary suspension or dismissal may never be transferred or posted to the Mississippi State University record.

### C. CREDITS, GRADES, and STANDING

All credits earned at Mississippi State University are in semester hours. In most curricula, taking an average load of 16-18 hours for a regular semester will enable a student to make normal progress toward graduation.

Year or quarter hours transferred from another institution are converted into semester hours for purposes of uniformity in determining graduation requirements.

Transfer credits are accepted only from institutions accredited by or in candidate status with a regional accrediting body, such as the Southern Association of Colleges and Schools.

A total of not more than 25 per cent of any curriculum may be earned by advanced standing examinations, College-Level Examination Program (CLEP), evaluated military service credits, correspondence, tutorial, extension, and USAFI courses. Evaluated military service credits are classified as extension work, and USAFI credits are classified as correspondence work.

Not more than 20 per cent of any curriculum may be earned through correspondence courses. Correspondence courses must be approved by the dean before being taken by students in residence.

#### 1. Credit by Examination

**a. Advanced Placement Examinations.** Students entering Mississippi State University for the first time are allowed credit on the advanced placement examination administered by the College Entrance Examination Board. Grades of Satisfactory (S) appear on the transcript for courses in which advanced placement credit is earned. These courses do not affect grade-point averages. Applicability of such credit to a specific degree is to be determined by the appropriate dean. The following table provides the details on how credit is presently assigned in the various subject areas by the deans.

AP EXAMINATION	SCORE	HOURS	CREDIT RELATED COURSE
1. ART			
General studio credit	3	3	ART 1213
2. BIOLOGICAL SCIENCE			
(no lab credit)	4	3	BIO 1123
	5	6	BIO 1123 and BIO 1023
3. CHEMISTRY			
	3	3	CH 1213
	4 or 5	6	CH 1213 and CH 1223
4. COMPUTER SCIENCE			
A Exam	4 or 5	3	CS 1233
AB Exam	3	3	CS 1233
	4 or 5	3	CS 1233
5. ECONOMICS			
Macroeconomics	4 or 5	3	EC 2113
Microeconomics	4 or 5	3	EC 2123
6. ENGLISH			
Language & Comp.	3	3	EN 1103
Language & Comp.	4 or 5	6	EN 1103 and 1113
Literature & Comp.	3	3	EN 1103
Literature & Comp.	4 or 5	6	EN 1103 and 1113
7. FRENCH			
Language Level 3	3	11	FLF 1114,1124,2133
Language Level 3	4 or 5	14	FLF 1114,1124,2133, 2143
Literature Level 3	3	11	FLF 1114,1124,2133
Literature Level 3	4 or 5	14	FLF 1114,1124,2133, 2143

8. GERMAN				
Language Level 3	3	11	FLG 1114,1124,2133	
Language Level 3	4 or 5	14	FLG 1114,1124,2133, 2143	
9. GOVERNMENT and POLITICS				
Comparative	4 or 5	3	PS 1513	
United States	4 or 5	3	PS 1113	
10. HISTORY				
American	3	3	HI 1063	
	4 or 5	6	HI 1063 and HI 1073	
European	3	3	HI 1213	
	4 or 5	6	HI 1213 and HI 1223	
11. LATIN				
Vergil	3	9	FLL 1113,1123,2133	
Vergil	4 or 5	12	FLL 1113,1123,2133, 2143	
Catullus-Horace	3	9	FLL 1113,1123,2133	
Catullus-Horace	4 or 5	12	FLL 1113,1123,2133, 2143	
12. MATHEMATICS				
AB Exam	3,4 or 5	3	MA 1713	
BC Exam	3	3	MA 1713	
	4 or 5	6	MA 1713 and MA 1723	
13. PHYSICS (no lab credit)				
B Exam	3 or 4	3	PH 1113	
	5	6	PH 1113 and PH 1123 or PH 2213	
CI Exam	3	3	PH 1113	
	4 or 5	3	PH 1113 or 2213	
CII Exam	4 or 5	3	PH 2223	
14. PSYCHOLOGY				
	4 or 5	3	PSY 1013	
15. SPANISH				
Language Level 3	3	11	FLS 1114,1124,2133	
Language Level 3	4 or 5	14	FLS 1114,1124,2133, 2143	
Literature Level 3	3	11	FLS 1114,1124,2133	
Literature Level 3	4 or 5	14	FLS 1114,1124,2133, 2143	

As more high schools develop Advanced Placement courses, Mississippi State University will consider their inclusion in this listing for credit.

Advanced Placement credit earned by approved testing may be applied to UHP credentials if the student successfully completes an MSU honors course in the same subject matter, i.e., both credits for testing and for graded courses may apply to UHP Phases I and II. (For example: AP credit for Composition I and Honors Composition II or AP credit for Calculus I and Honors Calculus II would yield six hours for each subject area.)

**b. Advanced Standing Examinations.** Applications for advanced standing examinations must be submitted to the Provost and Vice President for Academic Affairs; application forms are available in that office and must be filled out in quintuplicate. The Academic Calendar, published in the annual *Catalog* and the *Bulletin* of the summer school, will specify the final date for filing applications. The applicant must be a regularly enrolled student in residence on the campus, when he or she files the application and takes the examination.

Advanced standing examinations must be taken within two weeks from the date of approval by the Provost and Vice President for Academic Affairs and the grade card (signed by the instructor who graded the examination, the head of the department, and the student's dean), fee slip, a copy of the examination questions, and the examination paper must likewise be filed in the office of the Provost and Vice President for Academic Affairs within the same two-week period; otherwise, the student's application becomes null and void.

After an application is approved, the instructor whose name appears on the application form, and the student, will be notified. It is the responsibility of the student to make arrangements with the instructor as to the time and place of the examination. The student must appear for the examination on the date agreed upon.

Grades of C or better are passing grades and will be recorded on the student's permanent record. No student is permitted to take more than one advanced standing examination during any semester or summer term, and only fifteen hours of credit so earned will count toward graduation.

Credits earned through an advanced standing examination in any course considered prerequisite for an advanced course will be applied toward graduation hours and the grade-point average only if the examination is passed **before** the advanced class has been completed. **Under no circumstances will any credit earned by advanced standing examinations count toward graduation if the student already has credit for the course or its equivalent on his or her high school record.**

**c. College-Level Examination Program (CLEP).** A total of not more than 25 per cent of any curriculum may be earned by advanced standing examinations, College-Level Examination Program (CLEP), evaluated military service credits, correspondence, tutorial, extension, and USAFI courses. Evaluated military service credits are classified as extension work, and USAFI credits are classified as correspondence work. Mississippi State University serves as an open testing center for both the General and Subject Examinations. Academic credit on the Subject Examinations is awarded to students who are enrolled at the University and who make a scaled score of 50 or above. Credit is neither awarded nor accepted for transfer credit for the General Examinations. Credit is considered the same as extension credit and is subject to the same limitations. The applicability of credit toward degree requirements is determined by the dean and/or department head concerned. At present, the only courses for which credit may be obtained through the CLEP Program are these:

MKT 3013 Principles of Marketing  
 CS 1013 Basic Computer Concepts and Application  
 HI 1213 Early Western World  
 HI 1223 Modern Western World  
 HI 1063 Early U.S. History  
 HI 1073 Modern U.S. History  
 MA 1313 College Algebra  
 MA 1323 Trigonometry  
 MA 1713, 1723 Calculus I, II  
 EPY 2513 Human Growth and Development  
 EPY 3503 Principles of Educational Psychology  
 CH 1213, 1223 Fundamentals of Chemistry

ACC 2013 Principles of Financial Accounting  
 PS 1113 American Government  
 SO 1003 Introduction to Sociology  
 EC 2113 Principles of Macroeconomics  
 EC 2123 Principles of Microeconomics  
 FLF 1114 French I  
 FLF 1124 French II  
 FLF 2133 French III  
 FLF 2143 French IV  
 FLG 1114 German I  
 FLG 1124 German II  
 FLG 2133 German III  
 FLG 2143 German IV

MGT 3113 Principles of Management  
 PSY 1013 General Psychology  
 BL 2413 The Legal Environment of Business

FLS 1114 Spanish I  
 FLS 1124 Spanish II  
 FLS 2133 Spanish III  
 FLS 2143 Spanish IV

For further information about CLEP and a form for application to take the tests, please write to: Computer Based Testing, P.O. Box 9747, Mississippi State, MS 39762, or call 662 325-6610.

**2. Course Evaluation**

- a. Each course will have a syllabus describing the general content and objectives of the course, the method to be used for the final course evaluation and assignment of grades. The syllabus should be presented to students during the first week of classes.
- b. Dead days are defined as the last three class days immediately preceding the first day of the official university examination period as established by the university calendar. During the period of designated dead days the following regulations shall apply:
  - 1. No tests of any form may be given. This regulation includes unannounced or “pop” quizzes.
  - 2. No term papers, presentations, projects, or other out-of-class assignments may fall due during the dead days or thereafter. Any exceptions to this *must* be noted in the course syllabus with students being informed of such at the beginning of the semester *and* given an opportunity to complete such prior to the dead days. In addition, routine or daily assignments that are part of a normal class operation may be made as long as these have been noted in the syllabus and students informed at the beginning of the semester.

**3. Grades and Quality Points**

The class work of the student will be rated according to the following pattern of values:

Grade	Quality Points Per Credit Hour
A Excellent	4
B Good	3
C Satisfactory	2
D Poor	1
F Failure	0
I Incomplete	0
S Satisfactory	—
U Unsatisfactory	—
W Withdrawn Without Penalty	—

The quality-point average shall be determined on the basis of semester hours scheduled and rescheduled in which grades of A, B, C, D, and F are recorded. However, a student may not earn credits or quality points for a course or its equivalent in which he or she has already earned a grade of A or B.

A grade of I (incomplete) may be submitted in lieu of a final grade when the student, because of illness, death in his or her immediate family, or similar circumstances beyond his or her control, is unable to complete the course requirements or to take final examinations. A grade of I will not be submitted for reasons other than previously described. Except for circumstances noted above, an I grade will not be given to extend the semester so that a student may complete a required assignment(s).

Undergraduate students who receive an I grade must complete all work within thirty (30) calendar days from the date of the student’s next enrollment. A student who receives an I grade may make up only that part of course work not completed because of an emergency. If a grade of I is not resolved into a passing grade within the allotted time, the grade becomes an F.

Graduate students who receive a grade of I must complete all work no later than the last day of class of the next semester (excluding summer) whether the student is enrolled or not. Failure of graduate students to remove an I grade during the specified time will result in an automatic grade of “F”

Once a grade of I has been converted to an “F” because of the student’s failure to complete necessary course work or a lapse of the allowable time, no additional grade change will be allowed except under extreme circumstance(s) as recommended by the deans and approved by the Vice President for Academic Affairs. In the case of students receiving VA benefits, all courses scheduled will appear on the permanent record and a final grade will be recorded for each course. If the student withdraws from school and/or drops a course, the last date of attendance will be recorded.

**4. Academic Standing**

a. Minimum standards of scholarship are prescribed by the University for determining whether a student is to be continued or discontinued. This determination is made at the end of the fall and spring semesters, at the end of the summer session, or any part of a semester in which the student has been enrolled. While the academic standing of a student is determined by the MSU Cumulative Grade Point Average (GPA), students must earn a 2.0 GPA on both the MSU **and** overall cumulative GPA’s to earn a degree.

- 1. Students whose cumulative MSU GPA falls between 1.95 and 1.99 at the end of any term will enter the following term on academic alert. Students whose cumulative MSU GPA is less than 1.95 at the end of any term will enter the next term on academic probation and will remain on probation until the GPA reaches 1.95 or higher. The course load for students on probation is restricted to 13 hours.

In addition to meeting with their faculty advisor, it is recommended that probationary students visit The Learning Center for evaluation and/or additional academic assistance.

- 2. Students with a semester GPA of less than 2.0 who have been enrolled at MSU for at least two terms who fail to meet the following minimum MSU Cumulative GPA’S will be suspended.

Classification	MSU Cumulative GPA
Seniors	1.9
Juniors	1.7
Sophomores	1.3
Freshmen	1.0

No student will be suspended for failing to achieve the required grade point average without first having had at least one semester of probationary notice (not necessarily the immediate preceding semester).

Academic suspension shall be for at least one regular (fall or spring) semester. The student will be readmitted on academic probation following the expiration of the first suspension. A student who attends another university during a suspension from MSU must have maintained a 2.0 GPA (calculated by MSU standards) on all transfer work since leaving MSU. Students who fail to meet these criteria may be readmitted only on the recommendation of their dean and with the approval of the Provost. A student may continue in school during the second term of summer session, irrespective of his or her record during the first term. For this determination a student who officially withdraws from the University in such a manner that the grade point average is unchanged has not completed the semester.

- 3. A student who has one academic suspension and who does not earn a current semester GPA of 2.0 or higher and has less than the required MSU Cumulative GPA will be placed on academic dismissal. A student who becomes an academic dismissal is not automatically or routinely readmitted. The Vice President for Academic Affairs may approve the readmission of a student on academic dismissal upon the recommendation of the student’s academic dean based on a written petition by the student. Readmission will not normally be granted until the student has been absent from the University for one calendar year. Application for readmission should be made with the student’s dean no later than fifteen days prior to final registration.



4. Appeal for waiver of suspension or dismissal because of unusual circumstances should be made through the student's academic dean, with final approval by the Vice President for Academic Affairs.

**b. Veterans' Academic Status.** The following regulations, in addition to those above, apply to all students receiving U.S. Dept. Veterans Affairs benefits:

1. A student must maintain an acceptable cumulative GPA to be in good standing. If the cumulative average falls below the acceptable level, the student will be placed on "first probation." During the probation semester, the student must improve his cumulative GPA or benefits will be suspended at the end of the semester. However, if the cumulative GPA improves but, an acceptable level is still not achieved a "second probation" semester will be allowed. Should the standards of progress not be achieved at the end of the second probation semester, benefits will be suspended and students will not receive further benefits until approved by the VA.

#### ACCEPTABLE STANDARDS of PROGRESS

Semester	Cumulative GPA
1	1.00
2	1.50
3	1.75
4	2.00

A student must maintain at least a 2.00 cumulative GPA after the fourth semester or he/she will be placed on first probation and follow the order of procedure as outlined above.

2. Based on VA rules and regulations, students receiving VA educational benefits will receive benefits for courses that apply toward a degree program only. **NOTE:** Any change in student status, such as drops/adds, major changes or withdrawals from the University, must be reported to the VA Supervisor located in the Registrar's Office.

**c. Academic Amnesty.** Students who have not been enrolled in any post-secondary institution for five years may apply for admission or readmission under the academic amnesty policy through their academic dean's offices. Academic Amnesty may be applied to a student's record only once. Students admitted under this policy must complete current curriculum requirements in residence to earn a degree. (AOP 12.19 applies.)

**d. Academic Fresh Start.** Students who have not been enrolled in any post-secondary institution at any time for at least 24 consecutive months may petition for admission or readmission through their academic dean's offices under the academic fresh-start policy. All college credits earned prior to being granted academic fresh start will be eliminated from the computation of the student's grade point average and may never be used toward graduation at Mississippi State University. (AOP 12.17 applies.)

### D. CLASS ATTENDANCE

Upon registration the student accepts the responsibility of attending all classes and doing any work the instructor may prescribe. When absence from class is essential, it is the responsibility of the student to make arrangements satisfactory to the instructor with regard to work missed. These arrangements should be made prior to the absence when possible.

Instructors shall record and report the absences of all students on both the midterm (where applicable) and final grade reports submitted to the Registrar. The same procedure will be followed by the instructor when at any time, in the opinion of the instructor, the student is not making satisfactory progress. All absences and last dates of attendance (where applicable) will become a part of the student's file in the Registrar's Office. Instructors may report absences to the Division of Student Affairs at any time they feel it appropriate to do so and are expected to report students with continued, consecutive absences.

### E. WITHDRAWAL

Any student leaving the University prior to the end of the period of enrollment, except for temporary absences, should initiate withdrawal procedures at his/her Academic Dean's office. By completing this procedure, the student may prevent future difficulties in obtaining transcripts, or in reentering the University, and will avoid having F's automatically recorded for all courses taken during the semester.

A student who withdraws after the 10th day of classes will receive a grade of W for each course scheduled. No withdrawals will be allowed during the last two weeks before the beginning of final examinations for the fall and spring semesters, and during the last week prior to the beginning of examinations for each five week/ten week summer term.

The withdrawal of any student shall not be effective on a date prior to the last day of class attendance.

In highly unusual circumstances resulting from extreme hardship, a student may petition to withdraw retroactively from a semester within one calendar year. The request for withdrawal will be considered only when accompanied by appropriate documentation of the situation (e.g. medical emergency or administrative error) which was related to the student's recorded academic performance for the semester in question. Such requests must be approved by the student's advisor, department head, dean, and the Provost. For cases other than administrative error in which final grades were recorded, the students' instructors should be consulted before a final decision is rendered and should be notified after the decision is made. In no case will more than one semester's work be retroactively withdrawn during a student's matriculation at Mississippi State University.

### F. CLASSIFICATION OF STUDENTS

Students are classified according to the total hours earned:

Freshman	29 or fewer semester hours
Sophomore	30-59 semester hours
Junior	60-89 semester hours
Senior	90 or more semester hours

### G. UNIVERSITY HONORS PROGRAM

The University Honors program is a challenging variation of the standard curriculum, through which many undergraduate students throughout the University enrich their academic experiences. For many courses, both required and elective, Honors sections have been established. These are limited enrollment sections taught by selected senior faculty members. There are Honors courses and seminars in addition to these sections of regular courses. To enroll in Honors courses, one must have been admitted to the program. Requirements for joining the program and a full explanation of its phases and offerings are explained below.

Students who complete Phase I and/or Phase II of the University Honors Program are identified as participants in the Program, and their achievement is noted in all official University records.

The Honors Program exists primarily to offer outstanding academic experiences to highly qualified students. Courses applicable to every degree program are available through the UHP, and Honors students benefit from priority scheduling in pre-registration. The Honors sections differ from regular sections because the smaller classes-five to fifteen students-focus on individualized instruction that emphasizes each student's training and experience. The most outstanding members of the faculty teach Honors courses; therefore, UHP sections are more challenging and interesting than the regular sections for which they substitute. Many students find the courses appealing because they are guided to inquire beyond what they have studied previously. Freshmen and sophomores take courses applicable to basic curriculum requirements for all majors; juniors and seniors take seminars and advanced courses. Seniors may intern in a governmental or research agency in Washington or Jackson, or conduct research and write an Honors thesis. (Consult the index for Honors courses)

The University Honors Program is a university-wide program that reports to the Provost. It equally serves all eight colleges/schools and cooperates with all academic departments in tailoring programs for talented students. Credits offered through the Honors Program support the unique Honors design sequence in the School of Architecture; the programs for Schilling, Hearin-Hess, Stennis, Truman, and Rhodes preparatory scholars; the Early Admissions Program of the College of Veterinary Medicine; and the Chairman's Scholars Programs in the Departments of Nuclear and Mechanical Engineering. Individual departmental courses in five colleges offer field trips and exchanges with other regional, national, and international institutions. Advanced students frequently conduct independent research and special projects in their major fields for Honors credit. Recent notable curricular additions are a guide to honors options in Biomedical-Engineering, the College of Engineering Entrepreneurial Seminar, and study abroad programs in technical fields.

The UHP provides experiential study programs under the auspices of the University. The program supports several study-travel programs in Europe, the Far East, Canada, and the Caribbean, as well as the Honors Semester Program under the auspices of the National Collegiate Honors Council. The Honors Program also offers diverse study opportunities in England, Scotland, Ireland, New Zealand, Barbados, Kenya, and Australia through its membership in the Cooperative Center for Study Abroad.

The University Honors Program has an important role in the cultural and social lives of hundreds of students and faculty members. The Honors Forum and co-sponsored programs with every college and with the Cultural Diversity Center, the President's Commission on the Status of Women, the Stennis Institute, the Women's Study Program, the Black Student Association, the Institute for the Humanities, the Architecture lecture series, the Presidential Forum, the Mock United Nations, the Lectern Series, and the Center for International Security and Strategic Studies offer Honors students unique opportunities. Only a few examples of former participants are Hartnut Michel, 1988 Nobel Laureate in Chemistry/ Harvey Gantt, Architect; Dr. Christian Barnard; playwright Beth Henley; writers Alex Haley and Ellen Gilchrist; historians William McFeely; Edwin R. Newman, journalist; Shirley Chisom; Board Chairman of Arthur Anderson, Von Graham; Editor of *Inostrannaya Literature*, Nikolai Anastasiev; Baucu van der Wal, director of the Anne Frank Center in Amsterdam; Takashi Miyazaki, Consul General of Japan; Guenther Van Well, Ambassador of West Germany/ Emmanuel de Margerie, Ambassador of France, Rita Klimova, Ambassador of Czech-Slovak Republic, and many government officials including former U.S. Ambassador Robert Pugh, the late Senator John C. Stennis, former Senator Amy Tuck, and former State Representative Scott Ross (UHP alumnus). The UHP also has co-sponsored presentations and symposia on W. B. Yeats, Eudora Welty, William Faulkner, Haley's Comet (American Astrological Society), Caribbean ecology, Emily Dickinson, and Gabriel Garcia Marquez, exhibitions of agrarian art and the works of William Dunlap, Walter Anderson, Marie Hull, and Maude Gatewood, and performances by notables such as Sarah Johnson, violinist; John Paul, harpsichordist; the Vienna Chamber Trio, Ballet Mississippi, the Alvin Ailey Dance Company, the National Shakespeare Company, and Malagro Vargas.

Students' achievements in every realm of university life confirm an advocacy that study and personal development are complementary in the undergraduate experience. UHP students hold leadership roles in the Student Association, Housing and Residence Life, the Greek system, the bands, and every major honorary society, including Phi Kappa Phi, The Society of Scholars, Who's Who, Mortar Board, Golden Key, Cardinal Key, Omicron Delta Kappa, and college organizations. In recent years, the editors of *The Reflector* and *The Reveille* have been UHP students. The slate of elected officers of the Student Association has been dominated by UHP leaders in the past five years.

Students are central to the Honors Program. They elect representatives to the Honors Council, which advises the Director and plans activities of the program. The UHP has earned national recognition for its participation in regional and national meetings of the National Collegiate Honors Council, to which students have traveled with expenses paid to such cities as New Orleans, Chicago, and Miami. The Council supervises the Honors House, where all Honors students have access to electric typewriters, a xerox machine, and a video system. The 1989 facility also provides a separate Council office, a browsing library, and a seminar room. The students form intramural teams and organize social activities such as film showings, dances, and picnics. At the end of each academic year, outstanding students are honored at an awards ceremony.

Outstanding faculty contribute significantly to students' opportunities to learn from teaching and research that have yielded numerous awards for that faculty. The Giles Distinguished Professors serve as the faculty advisory group for the program; winners of the John Grisham Master Teacher Awards, the Burlington Northern Teaching Awards, and the MSU Alumni Association Awards routinely teach lower division honors classes and serve as mentors for students; conducting independent research. Students conduct separate evaluations of all honors courses and make the results available to all students selecting honors courses; students also select outstanding UHP faculty members for recognition each year.

Entering freshmen have the opportunity to apply to live in Hull Hall, the only co-residential facility that houses both freshmen and upper division students who are qualified for admission to the University Honors Program. The Office of Housing and Residence Life makes assignments on the basis of first come, first-served applications. Residents have access to both academic and co-curricular programming intended to offer the most productive orientation to a total university experience.

To apply for the Honors Program, an entering freshman should have a minimum composite ACT of 26 and/or an outstanding academic record of grades and rank in class. The UHP offers detailed information on admission requirements to more than twenty courses each semester stressing the importance of individual advising and access for all interested students at any class level. A transfer student should have a 3.40 QPA on at least fifteen hours of course work. Transferred Honors credits may be applied to UHP certifications. Anyone who enters the Program must maintain a 3.40 average, but an individual may enroll in a single course or selected courses, pursue certification in Phase I or Phase II or both, and earn recognition as a "University Honors Scholar". Inquiries regarding the UHP should be directed to:

Director, University Honors Program  
P.O. Box EH/FAX 662-325-0086  
E-Mail: Director, [jwhite@honors.msstate.edu](mailto:jwhite@honors.msstate.edu)  
Admission, [bgardner@honors.msstate.edu](mailto:bgardner@honors.msstate.edu)  
Mississippi State, Mississippi 39762

Application to the Honors Program may be made online at [www.msstate.edu/dept/uhp](http://www.msstate.edu/dept/uhp). The regularly offered Honors courses are listed on pages 424-425; however, the diversity of the program is reflected in topics of advanced departmental courses and UHP seminars. Some of the recent topics include:

Alternate Energy Sources	Cell Biology
Interdisciplinary Seminar on the 1920's	Ascent of Man
Endangered Species: Ecosystems, Aesthetics, Economics	Land and Society
The Soviet Mind in Film and Literature	Art, Architecture, Music
Science and Pseudoscience	Agrarian Film
Scientific, Social, and Ethical Impact of Biochemical Research	French Civilization
Utopias, Dystopias, and Contemporary America	Australian Film and Literature'
Vietnam and American Politics and Literature	Literature of Imperialism
Words in Collision	Mythology
The U.S.S.R.	Physical Geography
	Literature of the Caribbean

After qualifying for a Freshman Academic Scholarship and gaining admission to the Honors Program, an entering freshman may compete for one of fifty Honors Program Scholarships. The Honors Program Scholarship is one of the few awards that can be added to a Freshman Academic Scholarship. Recipients receive widespread recognition and play a dynamic role in the UHP. The Stewart Bridgforth Honors Scholarships are awarded to students accepted for admission to the University Honors Program who have earned the status of National Merit Scholar. All scholarship inquiries and applications must be directed to the Office of Student Financial Aid and Scholarships.

## H. RECOGNITION OF ACADEMIC ACHIEVEMENT

Recognition for outstanding academic achievement is accorded to full-time students each regular semester (does not apply to students in College of Veterinary Medicine). For these purposes, a student must complete at least twelve (12) semester hours of course work toward graduation, with no incomplete grades nor grades lower than C. The levels of recognition are as follows:

**President's Scholars.** Students who achieve a 3.80 average or above.

**Dean's Scholars.** Students who achieve a 3.5 to a 3.79 average.

## I. GRADUATION and COMMENCEMENT

**1. Commencement.** Candidates should submit formal application for degrees during registration for the period of enrollment in which they expect to complete their degree requirements, but not later than the last day to apply, as published in the Academic Calendar. Candidates will not be allowed to participate in the commencement ceremony until requirements have been met for a degree. Payment of debts to the University is a requirement for the granting of degrees and awarding of diplomas. All University holds must be cleared before a student can graduate.

**2. Graduation with Honors.** Students completing the requirements for baccalaureate degrees with exceptional scholastic averages and with a minimum of one-half the total hours required for their degrees at Mississippi State University may be graduated with honors. The levels of recognition will be recorded on the students' diplomas and permanent records.

In determining eligibility for recognition, the grade point average will be figured on the basis of all hours attempted. If a student's last period of enrollment raises his or her average to the level required for honors, or to a higher level of honors, this notation will be made on the diploma and transcript. The hours may include, not only residence credit, but also correspondence and extension credit to the extent permitted by the University regulations for graduation.

Transfer students must achieve the specified grade point average in two senses: (1) on all hours attempted at all institutions attended and (2) on all hours attempted at Mississippi State University. The level of attainment will be determined by either the overall average or the Mississippi State University average, whichever is lower. The grade-point values currently in use at Mississippi State University will be used to calculate the quality-point average on all transfer credits.

The levels of recognition and the grade point averages required for each are as follows: *Summa Cum Laude*—3.80, *Magna Cum Laude*—3.60, and *Cum Laude*—3.40.

## IV. STUDENT HOUSING

### A. GENERAL INFORMATION

A student desiring a definite room reservation for the fall semester must submit a completed housing application and a nonrefundable \$50 application fee to the Department of Housing and Residence Life. Reservations must be made in the full name of the student as it appears on the application for admission or readmission. A nine-month housing contract must be signed and returned to the Department of Housing and Residence Life once an assignment is offered and accepted.

Priority is given to students retaining their assigned room and paying required fees. Students wishing to request one another as roommates should submit applications at the same time to the Department of Housing and Residence Life or together in the same envelope by mail. Both students wishing to room together **MUST** request each other in writing. Mutual requests received by April 1 have priority.

MSU students **cannot** cancel their housing contract and room assignment after the residence halls officially open each semester. The residence hall contract is for both semesters (nine months) if the student is enrolled in school. The residence halls open several days before the first day of classes.

Requests for private rooms will be accepted and honored as space for assignments is available. First priority will be given to double occupancy assignments. The rate for a private assignment will be higher than for a double room. Check with the Department of Housing and Residence Life for rates.

All room changes must be approved by the residence director. A student who makes an unauthorized change must pay a \$25 penalty and move back to the assigned space. The assigned occupants are financially responsible for all property in the room, including doors and windows.

The University reserves the right to inspect rooms and to move any student to another assignment for reasons of space management or for the maintenance of order. At the beginning of each school term, students without roommates may choose one of three options: 1) move together voluntarily with another student who is without a roommate, 2) be reassigned with another student who is without a roommate, or 3) pay the private room rate if private rooms are an option. Whatever the option chosen, the student must coordinate his/her actions with his/her residence director.

The Residence Hall Fee covers any University holiday which occurs as a one-day extension of a normal weekend (i.e., an all-day suspension of classes on a Monday or a Friday); the fee does not cover a holiday of longer duration (i.e., Winter and Mid-semester - "Spring Break"). The University closes all residence halls during holiday periods. Students may check into Herbert Hall for \$10.00 per night during holidays and break periods if space is available.

### B. HOUSING APPLICATION PROCESS

Freshman and transfer students may submit housing applications after August 1, 2002 for the 2003-2004 academic year. Assignment of transfer students and currently enrolled off-campus students will not be made until after assignment of returning residence hall students has been completed at the end of spring semester, and into summer, as space is available. Freshman and transfer students will receive their assignments after summer orientation.

Please contact the Department of Housing and Residence Life for more information: Box 9502, Mississippi State, MS 39762; Phone: (662) 325-3555; FAX: (662) 325-HOME (4663); email: [housing@saffairs.msstate.edu](mailto:housing@saffairs.msstate.edu); website: [www.msstate.edu/dept/housing](http://www.msstate.edu/dept/housing).

### C. FACILITIES

All single student residence halls are air-conditioned. All halls have card-access security systems. The following are provided in all single student rooms: closet or wardrobe space, beds, desks, chairs, microwave/refrigerator/freezer, telephone line, (with voice mail and caller ID), ethernet port, and super basic cable TV. There is no additional charge for utilities.

All single student apartments are air-conditioned and include stove; refrigerator; dining room, living room, and bedroom furniture; telephone line (with voice mail and caller ID), ethernet port, and super basic cable TV. There is no additional charge for utilities. University Drive apartments are not ethernet connected.

### D. FRESHMAN STUDENTS

Freshman students are housed in separate residence halls, where specially designed programs are carried out during the year under the direction of student leaders and hall staff. All students are housed in double rooms. Approximately 1500 spaces are available. If all spaces in the freshman halls are filled, freshmen will be assigned to upperclass halls.

## E. UPPERCLASS AND GRADUATE STUDENTS

Approximately 2000 spaces are available in traditional residence halls, and 139 spaces are available in 3-person apartments. Arbour Acres is an all private room complex. Rent for Arbour Acres and University Drive Apartments is paid monthly and includes the December break and spring break at no additional charge. Additionally, a limited number of 1-bedroom apartments are available for graduate students.

## F. FACILITIES FOR STUDENTS WITH FAMILIES

Aiken Village is for married couples living together, single parents with children living with them, and families. One adult in each unit must be enrolled as a full-time student. The complex is located approximately one mile from the center of the campus, is made up of 59 one-bedroom units, 207 two-bedroom units, and an office-laundry-pre-school building. Each unit is equipped with stove, water heater, forced-air furnace, electric refrigerator, ceramic tile bath and tub-shower; local telephone service, super basic cable TV, a 220 volt outlet in the living room (also in larger bedroom of the two-bedroom units) for air conditioner; individual meters for gas and electricity. Apartments have at least one air conditioner. Window units up to 30K can be accommodated. A second unit must be installed by University personnel. (Suggested sizes: For one-bedroom-not less than 10,000 BTU, 220 V; for two-bedroom-not less than 14,000 BTU, 220V.)

Once a couple or family is assigned to an apartment, a \$200 deposit is due. Mail is delivered six days per week by the Starkville Post Office. Address all communications for information to the Department of Housing and Residence Life, Box 9502, Ms State, Mississippi 39762.

## V. SERVICES

### A. LIBRARIES

The Mississippi State University Library System is composed of the Main Library (Mitchell Memorial Library) and its library branches which include Architecture, the College of Veterinary Medicine, the Jackson Center Library and the Meridian Campus.

The University Libraries include a collection of over 1,994,239 volumes and over 16,036 journal/serial titles, including 1,412 electronic subscriptions. The Libraries regularly receive many of the publications of leading universities and scholarly societies. An approval plan in support of teaching and research greatly strengthens the collection. The Library, already a 95% Government Documents Depository, is also a United Nations Depository.

The Libraries have significantly increased electronic access to bibliographic and full text information held locally as well as at remote sites. Through Galaxy and/or the Libraries' webpage, patrons have access to a wide variety of over 148 databases, many of which provide full-text articles from journals not owned by the Libraries. The Access Services Electronic Reserves program further supports teaching and research. Membership in a number of consortiums within the state and region extends the collection. These memberships include KUDZU, a consortium of fourteen (14) Association of Southeastern Research Libraries.

Expedited electronic document delivery services in support of research materials and journal articles not available in the Libraries' immediate collections are obtained via Infotrieve in support of graduate students, researchers and faculty. Initial work in partnership with the University's Engineering Research Center, has begun toward the development of the University's Geospatial Digital Library.

The resources of the Special Collections Department include materials of research value on the local, state, regional and national levels. Among the valuable documentation in the Archives of the University are papers of the university's presidents and other officers, college, division and departmental records, faculty papers, records of committees and university related organizations. The Manuscripts Division includes many significant collections, especially in the areas of journalism, civil rights, agricultural, and political history. Among the most important are the Turner Catledge Papers, Hodding and Betty Werlein Carter Papers, Mississippi Republican Party Papers, and the Delta and Pine Land Papers. The Mississippiana Collection contains significant works about Mississippi and by Mississippi authors and a large rare book collection. The Congressional and Political Research Center houses the papers of Senator John C. Stennis, Congressmen G. V. "Sonny" Montgomery, David Bowen, Charles Griffin, Mike Epsy, and Chip Pickering as well as papers of Wiley Carter and Wayne Weidie, aides to Senator Thad Cochran and Representative Gene Taylor respectively. The Center is working with the Stennis Institute of Government and the Stennis Center for Public Policy to produce newsletters, seminars and other programs to promote research and interest in all levels of government. Other notable papers within the department include those of Norma Fields, Eugene Butler, Norman Bradley, Bill Monor, Sid Salter, Mark Bolton and John Grisham.

The Templeton Music Collection, a unique collection of ragtime, blues, show tunes and war song sheet music is highly recognized and used by musicians, scholars and researchers throughout the region and nation. Digitized portions of this collection are available on the web.

The Library computer lab contains approximately eighty-five Pentium IV 1.6 gigahertz PC's with 17-inch color monitors, and five G4 iMac computers. Students who want to use the sound capabilities of the World Wide Web may plug their own headphones into headphone jacks on the PC's and Macs. The lab also offers two laser printers and a color laser printer. As the University's newest and largest computer lab, the Computer Commons is open until 2:00 a.m., Sunday through Thursday and closes at 8:00 p.m. On Friday and Saturday.

The Instructional Materials/Media Center (IMC) provides an environment for educational technology activities and a learning center to utilize techniques related to digital multimedia. The staff provides assistance in identifying, digitizing, and organizing content materials including resources from the Libraries' collections for use in web page design or presentation. IMC houses eight computers with CD-ROM players, four computers with flatbed scanners that can be used for scanning documents, pictures, photographs, etc., two typewriters, five TV/VCR stations for students to listen to music as required for various courses. Two of these stations also have record players. Music composition stations consist of electronic keyboards attached to Macintosh computers. The IMC also provides small listening areas with TVs and VCRs for groups to view videos for classes.

The Libraries, a charter member of the Southern Library Network (SOLINET), hold memberships in the American Library Association, Association of College and Research Libraries, the Networked Digital Library of Theses and Dissertations (NDLTD), EDUCAUSE, EPSCOR/ESIG libraries, CNI and CLR, and was a founding member of SPARC. The Libraries are one of five supporting regional libraries within the National Agricultural Library Aquaculture Library Network, established to link the research and extension activities of the Regional Research Centers with the Network. The Main Library plays a major role in Mississippi's statewide consortium MAGNOLIA (Mississippi Alliance for Gaining New Opportunities through Library Information).

### B. BOOKS and SUPPLIES

The MSU Bookstore is operated on behalf of the University by Follett College Stores Corporation. The store's primary function is to provide students, faculty and staff with textbooks, reference and trade books, and related supplies.

The newly remodeled Bookstore is located on the ground floor of the Student Union Building. It stocks all course required texts and supplies, carries a complete stock of school supplies and a selection of paperback books and insignia items. In addition, Apple and IBM computers, related hardware, and software packages are available at substantial educational discounts.

During the academic year, the Bookstore is open Monday through Friday from 8:00 a.m. to 6:00 p.m. Reduced hours are observed during the summer months and between academic semesters. The Bookstore extends its hours of operation concurrent with campus activities such as home football games.

### C. UNIVERSITY DINING SERVICES

The University operates a variety of campus dining facilities which provide the student with a wide range of menu choices, atmospheres, and prices. The campus community may choose from the newly remodeled Perry Cafeteria, the Union Food Court, the Pegasus Dining Room in the Wise Center, the State Fountain, Gooch's, McArthur Court in McArthur Hall, and Food for Thought in Mitchell Library, as well as a full service Catering Department.

MSU's historic **Perry Cafeteria**, located in the heart of campus, offers a varied breakfast menu, from omelets and Belgian waffles to hearty southern style fare. For lunch, students will find hot food lines serving home style meals, a salad bar, a deli bar, a potato bar and a pizza bar. Char-grilled entrees and a pasta line are featured daily. Satisfy that craving for something sweet with MSU ice cream or MSU baked pies, cakes or cobblers. For dinner, students may feast on "all you can eat" buffet.

The **Union Food Court** features **Chick-fil-A**, **Wendy's**, **Subway**, and the **Great Wall of China** as an alternative choice for students.

One of the best kept secrets on MSU's campus is the **Pegasus Dining Room** at the Wise Center. Great food is enhanced by a cheerful dining room and patio area. The Pegasus serves a continental breakfast, hot Home-style lunches, salad and potato bars, grilled sandwiches and a soup kettle. The student plate is a daily feature at the Pegasus.

The **State Fountain** is always a favorite stop for MSU ice cream, milk shakes and sundaes. Students are drawn into the Fountain early each morning by the tempting trays of MSU pastries, fresh baked breads and steaming mugs of **Starbucks** coffee. The pleasant greenhouse atmosphere is a wonderful place to relax and take a well deserved study break with cookies or a slice of cheesecake. When the occasion calls for a gift, the Fountain offers cakes, pies, balloons, and its special MSU cookie tins delivered on campus or anywhere in the continental United States. Parents may phone in orders for birthday cakes, special occasions, or the **Bully Birthday Special**.

The Residence hall area location of **Gooch's** makes it a popular stop for students. Located next to the Laundry, Gooch's offers Stone Willy's pizza, an assortment of short order items, soft drinks, and snacks. An "After hours packaged meal" is available for those on the meal plan who miss the evening meal at the Perry Cafeteria.

**Food for Thought**, located in the Library, is a snack shop that offers a quick bite for students on the run. The shop offers soft drinks, sandwiches, snacks, and a lot of other items.

Dining Service's newest food location, **McArthur Court**, is located in McArthur Hall on Barr Avenue. It is convenient for those located on the west side of campus who need a snack, light breakfast or lunch. The shop offers a sandwich bar, a salad bar, a choice of two soups each day and a "build your own" potato bar, in addition to pastries, bagels and sausage biscuits for your "pick me up" breakfast. It is an ideal place to sit and study or to just take a break with a friend.

Students may pay for purchases at the above locations with cash, personal checks, MoneyMate, Dining Only, or Meal Plan.

**MoneyMate**. MoneyMate is a declining balance account that utilizes the student's ID card. MoneyMate is accepted at Dining Service locations, as well as many other locations on campus.

Dining Only works in conjunction with a student's MoneyMate account, earmarking a certain amount of MoneyMate funds for use in Dining Service locations.

Dining Service offers four voluntary meal plans from which students may choose. The meal plans are discounted, so they cost less than if cash were used each time you eat. Meal plans are for one Academic year (fall & spring) and are billed to student accounts at the beginning of each semester.

The **Bailey Howell** offers five evening meals (all-you-can-eat) each week, Monday-Friday at the Cafeteria for \$410.00 per semester.\*

The **Doubles** offers a daily allowance of \$4.00 per day, Monday-Friday at all Dining Service locations and dinner (all-you-can-eat) at the Cafeteria or \$695.00 per semester.\*

The **Johnie Cooks** offers a daily allowance of \$7.00 per day, Monday-Friday at all Dining Service locations as well as dinner (all-you-can-eat) at the Cafeteria for \$905.00 per semester.\*

**Weekend Series!** Add a weekend option to any of the three above meal plans. This option allows an additional \$5.00 per Saturday and Sunday for \$140.00 per semester.\*

The **Local Joe** is a seven-day-a-week meal plan. Start with a daily allowance of \$10.00 (Monday-Friday) at any Dining Service location and dinner (Monday-Friday) at the Cafeteria (all-you-can-eat). Then, on Saturday and Sunday spend up to \$15.00 per day for meals at any of our Dining Service locations. You get all of this for only \$1770.00 per semester.\*

For information about Dining Services, or meal plans, contact Dining Service, P. O. Box 6229, Mississippi State, MS 39762, (662) 325-2965.

\* Prices subject to change without notice. See [www.msstate.edu/dept/dining](http://www.msstate.edu/dept/dining) for up-to-date information.

## D. JOHN C. LONGEST STUDENT HEALTH CENTER

The Longest Student Health Center is designed to provide comprehensive, accessible, high-quality and economic healthcare to students during college years. The Center is open during regular school sessions to all Mississippi State University students who pay the student health fee.

It is recommended that all students use the Longest Student Health Center as their preferred provider of care while at Mississippi State. The Center is staffed with well-qualified family practice physicians and registered nurses to provide primary medical care for students. Ancillary services include pharmacy, laboratory, x-ray, and physical therapy. Other services offered include nutrition counseling and health education. The health fee covers the physician's professional charge for an unlimited number of clinic visits. Ancillary services are provided on a fee-for-service basis. Ambulance service is available through Oktibbeha County Hospital.

Those who need more specialized care than the Center can provide will be referred to the appropriate resource.

Clinic hours: 8:00 a.m. - 5:00 p.m., Monday - Friday. The Center is closed on Saturday and Sunday and during regularly scheduled student holidays.

Health records are to be sent directly to the Longest Student Health Center, where they are kept confidential. Health records are not a part of the school records and will be kept indefinitely for future reference.

The Student Health Center does accept insurance assignments from health insurance companies recognizing the Center as an authorized provider of health care. Medicare does not recognize the Center as an authorized provider and will pay only to the patient or physician. A Student Accident and Sickness Insurance Plan has been developed specifically for Mississippi State University students and is intended as a supplement to the care provided by the Student Health Center. Sponsored by the Student Association, it is a voluntary plan for students and their dependents. International students are required by the University to subscribe to this policy *unless* they provide proof of equal coverage.

Information on student health services and student health insurance is available by writing to Director, John C. Longest Student Health Center, P. O. Box 6338, Mississippi State, MS 39762; telephoning (662) 325-2431; or emailing [health@saffairs.msstate.edu](mailto:health@saffairs.msstate.edu). Visit our Web page at: <http://msstate.edu/dept/health/>

## E. INTERNATIONAL SERVICES OFFICE

The International Services Office (ISO), a unit of the Division of Student Affairs, is charged with the responsibility of immigration matters as they relate to students and exchange visitors. This includes advising and providing information to students, research scholars, visiting professors, and MSU faculty and administrators about rules and regulations of the Immigration and Naturalization Service (INS), maintenance of lawful status, work authorization, and other matters which affect the international community at Mississippi State University. The Department of State's Exchange Visitor Program is administered in this office, providing DS 2019 documents for qualified J-1 visitors. Through liaison with community organizations and businesses, cultural experiences for international participants are facilitated and encouraged. Semiannual orientation programs for new students are conducted by the ISO. An ISO-administered electronic mail bulletin provides current information regarding immigration regulations, university deadlines, campus and community activities, issues of importance on a national or international scale which affect some or all of MSU's international community, opportunities for employment, and other matters of interest to the subscribers. The ISO is located in the Callejas International Center at 15 Morgan Avenue.

## F. THE COUNSELING CENTER

The Counseling Center, located in the YMCA Building, offers a variety of services free to all full-time students, Monday through Friday, from 8:00 a.m. to 5:00 p.m. Appointments may be made in person or by calling 325-2091. The center also provides walk-in services for urgent concerns, as well as on-call services for serious crises 24 hours per day, 7 days per week, when the University is open. The Counseling Center also offers very brief crisis intervention and referral services to faculty and staff. If a counselor is needed after regular business hours, contact campus police at 325-2121.

**STAFF:** The Counseling Center staff is composed of competent professionals with extensive training in counseling psychology, social work, and counseling, who are experienced in facilitating personal growth and development. They respect the ability of each individual to make actualizing choices.

**PERSONAL COUNSELING:** Many university students have personal concerns which may interfere with their academic success. The Counseling Center staff provides an atmosphere in which students may discuss problems with the assurance that all counseling information is confidential and would be released only with the student's written consent.

**GROUP COUNSELING:** The Counseling Center provides a variety of small group experiences ranging from personal growth groups, to study skills groups, to vocational exploration workshops. Students who wish to improve communication or interpersonal skills may participate in growth groups where they can experiment with new types of behavior in a safe and accepting environment. For those students experiencing academic difficulty, study skills groups provide instruction and supervised activity designed to improve study skills and habits. Students can gain insight regarding their interests, abilities, and decision-making styles, as well as the world of work, while participating in vocational exploration workshops.

**CAREER COUNSELING:** Counselors assist students in making thorough self-appraisals of interests, abilities and personality traits so that they may utilize this information in making wise career choices. Counselors interpret test data and assist the student in viewing alternatives.

**OUTREACH AND CONSULTATION:** Counseling staff provide psycho-educational outreach to the MSU campus and local communities, as well as psychological consultation to students, faculty, and staff. Check out our web site at [www.msstate.edu/dept/cts](http://www.msstate.edu/dept/cts) for more information.

**TESTING:** The Counseling Center serves as the University's testing center for national testing programs such as ACT, CEEB, GRE, NTE, LSAT, CLEP, GMAT, MCAT, and MAT. Applications for these tests, which are available at the Counseling Center, should be completed and fees paid well in advance of the desired testing date. Other tests used in counseling are also administered at the Counseling Center. These include personality tests, and tests of ability, and other instruments as needed to assist students.

**COMPUTER-BASED TESTING (CBT):** Counseling and Testing Services also administers the University's Computer Based Testing program located at 54 Magruder Street. Students and community members may call 325-6610 to register for computerized applications of the GMAT, GRE, Praxis, and TOEFL. See our web site at [www.msstate.edu/dept/cts/testing](http://www.msstate.edu/dept/cts/testing).

## G. THE TEACHING and LEARNING CENTER

The major purpose of The Learning Center (TLC) is to help Mississippi State University students improve their academic performance. TLC offers both credit courses and non-credit services, available to all students of the University. Graduate and undergraduate students are served, including both strong students and those having problems in their courses. Any person who desires to enroll in TLC programs or to inquire about the programs should come to 267 Allen Hall or call 325-2957.

**Credit Classes.** The primary focus of the credit classes of the Teaching/ Learning Center is to assist in retention of students by strengthening their reading and study efficiency. The credit course, LSK 1023 College Reading and Study Skills, is intended primarily for freshmen and sophomores. This course emphasizes development of specific study skills and critical reading and thinking abilities. In addition, TLC offers a speed reading course, LSK 2013, and a one-hour study skills course, LSK 1011, that focuses on specific learning skills.

**Non-credit Laboratory Services.** The heart of TLC services is the TLC Laboratory. Assistance is available in grammar and punctuation, study methods, writing effective essay examinations, spelling, outlining techniques, writing research papers, vocabulary improvement, reading effectiveness, critical reading, technical reading, English as a Second Language, mathematics, and preparation for professional examinations. Any student of the University may receive these services free simply by coming to TLC to request assistance.

## H. CAREER SERVICES CENTER

Career Services is one of the two major components of the Career Center. Career Services provides comprehensive services to Mississippi State University students and alumni relative to issues related to the career planning process. Assistance is provided that compliments the career decision process in the form of personality and interest inventories, career counseling, resume writing, resume critiques, and mock interviewing. In addition, special events are hosted by Career Services that provide students and alumni with enhancements related to the job search process. Major events held on a regular basis include Career Day and Education Interview Day each fall/spring semester, and special emphasis workshops including dining etiquette, dressing for success and evaluating job offers.

The capstone Career Services activity is the on-campus interview program connecting students with employers who come to the campus to interview prospective employees. Students should register with Career Services three (3) semesters prior to the expected date of graduation. Advanced internet technology is utilized to gain maximum exposure for students and alumni. The Career Services office also administers internships, summer employment and part-time employment for currently enrolled students.

## I. LAUNDRY and DRY CLEANING

The University-owned and operated laundry and dry-cleaning facility provides students, faculty, and staff with quality wash, dry and fold; wash, starch and press; dry cleaning; minor alterations; repair; uniform rental; linen rental services; Priority One service, and a 24 hour laundromat.

## J. THE HOLMES CULTURAL DIVERSITY CENTER

The Holmes Cultural Diversity Center, formerly known as the Office of Minority Affairs (established in 1979) strives to create a campus atmosphere where individuals will value and respect all members of the university and surrounding communities from different cultural, ethnic, economic and racial backgrounds. The Center provides support and encouragement for African-American and other students, to assist them in achieving academic efficiency, to make a smooth transition to college life, and to grow in their awareness and appreciation of different cultures. In addition, the Center coordinates and/or co-sponsors cultural programming and cultural diversity/sensitivity sessions, among other efforts.

## K. INFORMATION TECHNOLOGY SERVICES

The Division of Information Technology Services (ITS) manages computing, networking, system development and telecommunications services for students and university departments. The mission of ITS is "to enhance learning, service and research through an advanced information technology environment."

[www.its.msstate.edu](http://www.its.msstate.edu)

**User Services** • 46 Magruder Street • (662) 325-0631. User Services operates the **Help Desk**, which serves as the primary point of contact for students, faculty, and staff when requesting services or reporting problems to Information Technology Services. Additionally, **User Training and Support** conducts training sessions, short courses, and provides consulting services to campus information technology users while **Desktop Services** provides computer support to faculty and staff.

**Telecommunications** • 10 Lee Hall • (662) 325-2212. Telecommunications manages the university telephone system and card access systems. All residence hall rooms are equipped with a telephone line for **Local Telephone Service**. Standard features on all residence hall lines include basic caller ID, voice mail, call waiting, and more. **Long Distance** service is also available to students, faculty, and staff at competitive rates. For access to

campus network resources and the Internet, **Dial-Up Network Access** accounts are set up and managed by Telecommunications. This department also operates the **Campus Card Office** and the University's declining-balance spending account system, **MoneyMate**.

**Systems and Networks** • 117 Allen Hall • (662) 325-0728. Systems and Networks is responsible for the planning, deployment, support, and operation of the University's information technology infrastructure. This infrastructure is comprised of the campus fiber optic backbone, departmental and building networks, the campus wireless data network, wide area network connections (including Internet and Internet2), and large scale computer, server, and information resources. The **Network Operations Center** in Allen Hall is the focal point for oversight of the campus network which encompasses over 140 campus buildings, numerous off-campus locations, and several thousand PC, Macintosh, and UNIX workstations. This facility also houses the Internet and Internet2 gateways, a dial-up modem pool, and several large-scale UNIX, Novell, and Windows servers used by academic, research, and administrative units of the University. Systems and Networks also maintains general-use **Computer Labs** in Butler Hall, Mitchell Memorial Library, and several of the Residence Halls. The Butler Hall and Mitchell Memorial Library facilities are open to all students, faculty, and staff, providing PC, and Macintosh workstations with a robust array of applications software. The Residence Hall facilities are open only to students living in campus housing.

**Information Systems** • 117 Allen Hall • (662) 325-0610. Information Systems is responsible for application development, maintenance, and support of a broad array of systems throughout the University. Systems supported range from small departmental applications to the comprehensive, integrated Enterprise Resource Planning system (Banner) for financial, human resources, and student administration. Information Systems is composed of the following units: **Data Administration, Business Systems, and Student Systems**. Responsibilities include database administration and the system design, programming, implementation, and on-going maintenance and support of the various information systems utilized by students, faculty, and staff.

## L. STUDENT SUPPORT SERVICES

The department of Student Support Services (SSS) is a federally funded program through the U.S. Department of Education. It is a TRIO program designed to assist eligible low income college students, first generation college students, and college students with disabilities to succeed in completing their college education. A limited number of students can be served under the federal grant program. The primary mission of SSS is to enhance educational opportunities for eligible students to improve their academic and social skills, increase their retention toward graduation and as appropriate, facilitate their entrance into graduate and/or professional schools. Additionally, Student Support Services verifies legitimacy of students who identify themselves as having disabilities. Students with disabilities who need academic accommodations must identify themselves to SSS, provide appropriate documentation of their disability, and make their requests known to the department. Documentation guidelines can be obtained from SSS. Student Support Services staff reviews the documentation, assesses the needs of students with disabilities, and makes recommendations to the faculty and the University regarding the needs. The department serves as a resource and clearing house for dissemination of information related to disabilities and compliance with section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA). For additional information or services visit Student Support Services, 01 Montgomery Hall or call (662) 325-3335.

## VI. STUDENT and CAMPUS LIFE

### A. THE COLVARD UNION

The Colvard Union, named for former President Dean W. Colvard, serves as the community center of the Mississippi State campus. The Union organizes and implements many social, cultural, educational, and recreational activities and events for the MSU community throughout the year.

The Campus Activities Board (CAB) and Music Maker Productions develop and coordinate a variety of programs that include films, speakers, concerts, musical performances, holiday programs, craft fairs, skills presentations, and the like.

The Colvard Student Union makes available to the campus community meeting and conference rooms, reception rooms, the multi-purpose Ballroom, the Small Auditorium, the Art Lounge, display space, banquet and dining rooms, and food service in the Union Food Court. The Union also houses the Office of Student Life, the CAB and Music Maker offices, Union Station Hair Designers, and the MSU Bookstore.

The Union Information Desk, located on the second floor, is open daily until 10:00 p.m.; it furnishes information about activities and events happening in the Union and around campus. Adjacent to the Information Desk is the Campus Outreach & Service Learning Center, and the Ticket Office which distributes tickets to campus concerts during the year.

### B. THE STUDENT ASSOCIATION

The Student Association exists to serve all Mississippi State University students. The five officers, who are elected during the spring semester, are the leaders of the SA. These officers include the president, vice president, secretary, treasurer, and attorney general. They not only work to ensure that established policies and programs are successfully continued, but also initiate improvements in MSU's student government.

The president and the SA cabinet comprise the executive branch of the Mississippi State Student Association. These cabinet members are selected to work with their student committees to implement programs and services which will benefit the entire student body.

The vice president heads the legislative branch and presides over the SA Senate. These are fifty senators elected to represent the various colleges and schools, as well as areas of student residence.

The judicial branch of the SA includes the Judicial Board, which is made up of seven students appointed by the SA president and approved by the senate. The Judicial Board rules in cases involving student discipline and other matters dealing with MSU students.

All students are automatically members of the SA when they enroll at MSU. Students who want to learn more about the SA and become involved should visit the SA office located behind the State Fountain and Bakery in the lower level of Perry Hall Cafeteria or call 325-3917.

### C. STUDENT PUBLICATIONS

Students of the University are responsible for producing two major publications.

*The Reflector*, the campus newspaper, appears twice weekly during the regular term. Edited and managed by students, it provides a wide range of news, features, and commentary of interest to the campus community. Its editorial offices are in the Student Media Center.

*The Reveille*, the annual yearbook, is published each year by a selected student staff to provide for the participants a lasting record of life in the University. The *Reveille* offices are in the Student Media Center.

*The Bulldog*, is an on-line publication that is the University's official student handbook. It provides a wide range of information about the campus and campus life, regulations governing student conduct, the disciplinary process for students in the University, and student organizations.

### D. STUDENT ORGANIZATIONS

Mississippi State University has more than 300 registered organizations, grouped as follows: Departmental/Academic (95), Fraternities (17), Sororities (10), Honoraries (40), International/Ethnic (16), Fine/Performing Arts (11), Political (4), Recreation/Hobby (24), Religious (27), Residence Life (17), Service (34), and Publications (4).

Organizations which represent the interests of a large segment of or the entire campus include: The Student Association (SA), the Residence Hall Association (RHA), the Inter-Fraternity Council (IFC), the National Pan-Hellenic Council (NPHC) Undergraduate Council, the Black Student Alliance (BSA), the Panhellenic Council (PH), the Campus Activities Board (CAB), *The Reflector* (newspaper), and *The Reveille* (yearbook). The name and phone number of the advisor of each organization on campus are listed on the MSU website and in the SA Office (lower level of Perry Cafeteria).

## E. SOCIAL SORORITIES and FRATERNITIES

Seventeen national social fraternities have established chapters at the University; twelve have chapter houses on the campus, and two have bought or leased houses off campus. Self-governance of the fraternities is provided by the Interfraternity Council, composed of the president and one delegate from each of the national fraternities. The national fraternities at Mississippi State University are: Alpha Gamma Rho, Alpha Kappa Lambda, Alpha Phi Alpha, Alpha Tau Omega, Delta Chi, FarmHouse, Iota Phi Theta, Kappa Alpha Order, Kappa Sigma, Lambda Chi Alpha, Phi Beta Sigma, Phi Delta Theta, Phi Gamma Delta, Pi Kappa Alpha, Sigma Alpha Epsilon, Sigma Chi, and Sigma Phi Epsilon.

Eleven national women's social sororities have established chapters at Mississippi State University; six have built chapter houses on the campus. Pan-hellenic Council is the self-governing body for sororities and is composed of two delegates from each sorority. State's sororities include: Alpha Kappa Alpha, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Sigma Theta, Delta Xi Phi, Kappa Delta, Phi Mu, Sigma Gamma Rho, Zeta Phi Beta, and Zeta Tau Alpha.

Included among the 28 Greek organizations at MSU seven historically African-American chapters: Alpha Kappa Alpha, Delta Sigma Theta, Sigma Gamma Rho, and Zeta Phi Beta sororities, and Alpha Phi Alpha, Iota Phi Theta, and Phi Beta Sigma fraternities. These organizations belong nationally to the National Pan-Hellenic Council (NPHC), and they are represented on campus by the NPHC Undergraduate Council, their self-governance body.

## F. PROFESSIONAL and HONORARY FRATERNITIES

More than seventy professional and honorary fraternities are active on the campus. They include: Alpha Epsilon Delta Pre-Med (Pre-Medical), Alpha Kappa Delta Sociological (Sociology), Alpha Lambda Delta (Freshman Scholastic), Alpha Pi Mu (Industrial Engineering), Alpha Theta Chi (Leadership), Assoc. of Economic Scholars, Alpha Theta Chi, Beta Beta Beta Biological (Biology), Blue Key National Honor Fraternity (Activities), Cardinal Key (Leadership), Chi Sigma Iota (Counseling), Elder Statesmen (Upper-Classmen), Eta Kappa Nu (Electrical Engineering), Gamma Beta Phi (Educational Service), Gamma Iota Sigma (Business), Gamma Sigma Delta, Golden Key (Student Leadership), Kappa Delta Pi (Education Honorary), Kappa Omicron Nu (Leadership/Home Economics), Kappa Pi (Home Economics), Lambda Pi Eta (Communication), Lambda Sigma, (Sophomore Collegians), Mortar Board (Leadership), Mu Kappa Tau (Marketing), Omicron Delta Kappa (Leadership), Phi Alpha Theta (History), Phi Delta Kappa (Educational), Phi Eta Sigma (Freshman Scholastics), Phi Kappa Phi (Scholastic Honorary), Phi Sigma Pi, Phi Theta Kappa Alumni (Transfer Students), Pi Delta Phi (French), Pi Omega Pi (Business Education), Pi Sigma Alpha (Government), Psi Chi (Psychology), Sigma Gamma Epsilon (Earth Science), Sigma Gamma Tau (Aerospace Engineering), Sigma Tau Delta (English), Society of Scholars in Arts and Science, Tau Beta Pi (Engineering), Theta Tau (Professional), University Honors Council (General Scholarship), Upsilon Pi Epsilon (Computer Science).

## G. LYCEUM, SPEAKERS FORUM, BLACKFRIARS

Numerous groups and agencies to enrich the cultural life of the campus. Important among these are the Lyceum series, the Lectern program, and Blackfriars Drama Society, which utilize the excellent theater and gallery in McComas Hall.

For many years, the Lyceum series has brought the community a select and varied program of musical, dramatic, dance, and other artistic offerings, including symphony orchestras, ballet companies, traveling theatrical companies, and noted individual artists and performers. The Lyceum is supported by student fees, season ticket sales, an allocation from the University, and private contributions and managed by the student-faculty Performing Arts Committee.

The Speakers Forum series, managed by a committee of the Campus Activities Board, brings to the campus speakers of current interest to students and faculty. The Speakers Forum Committee is made up entirely of students. Admission to the lectures is typically free to students.

The Blackfriars Drama Society, supported by the Department of Communication, usually presents at least two major plays each semester, as well as programs of student-directed one-act plays. In addition, in the fall of each year Blackfriars plays host to the M. S. U. Drama Festival.

## H. MUSICAL ORGANIZATIONS

A broad selection of musical ensembles is available for students with a wide variety of musical backgrounds and interests. The groups perform numerous concerts on and off campus throughout the year, and are featured at university-wide events such as Homecoming, Discovery MSU, and football and basketball games. All groups are available for credit, and several offer scholarships and out-of-state tuition waivers for satisfactory participation. Credit hours earned for participation in all ensembles are not applied to the credit-hour totals used in computing academic overloads or overload fees.

Instrumental ensembles offering one semester hour credit include the Famous Maroon Band, the Symphonic and Concert Bands, the Wind Ensemble, the Stage Band (one ensemble), and the Basketball Pep Band. A variety of smaller woodwind and brass ensembles are available to students for one semester hour credit.

Vocal ensembles offering one hour credit include the Concert Choir and the University Madrigal Singers, in which membership is by audition.

The Starkville/MSU Symphony Orchestra is open to string, wind, and percussion players from MSU as well as the Starkville community and surrounding areas. This group performs several concerts each year, but does not offer credit for participation.

The Starkville/MSU Symphony Chorus is open to students, faculty, and members of the community. The group rehearses weekly and performs a wide variety of music in several concerts throughout the year. Credit is not offered for participation.

For information concerning music ensembles at Mississippi State University contact the Department of Music Education.

## I. RELIGION

Since Mississippi State University is a non-sectarian institution, it seeks to provide a climate of freedom in which the private and corporate religious life of the students can be expressed. Students and others within the campus community are free to worship or not to worship, in accord with their convictions and beliefs.

The Chapel of Memories, with its George D. Perry Carillon Tower, in the center of the campus, is open to individual students for meditation and prayer throughout the day and evening. It may also be reserved through the Director of Facilities Use (Humphrey Coliseum) for weddings, funerals, initiations, and group religious activities. Student religious groups are registered through the Office of Student Life to provide the co-curricular involvement of students in programs of study, worship, fellowship and service. Four of these groups, the Baptist, Methodist, Catholic, and Church of Christ, have off-campus facilities. In those cases where a minister or faculty advisor is not provided by the preferred group, every effort will be made to put the student in touch with someone of his or her faith in the area.

The University Common Ministry, composed of ministers engaged in campus ministry at the University, has been serving the needs of students since December 20, 1978. In addition, more than 25 active student religious groups are registered with the Office of Student Life.

In addition to the practice of religion within the student religious groups, an opportunity to learn about religions of the world is provided through credit courses in the Department of Philosophy and Religion, as well as non-credit courses offered through the church-related groups.

## J. RECREATIONAL SPORTS

The Department of Recreational Sports conducts a comprehensive program of leisure services. The program consists of men's, women's, and co-recreational sports; fitness programs and activities; tennis and racquetball court reservations, equipment check-out services; informal recreation programming; sport club opportunities; and special events.

The Joe Frank Sanderson Center opened in the Summer of 1998 and offers a wide range of recreational opportunities for Mississippi State students, faculty, and staff. The state-of-the-art facility includes six basketball/volleyball courts; eight racquetball courts; a fitness room complete with weight and



cardiovascular work-out equipment; jogging track; and an indoor swimming pool. The department also operates the RecPlex, a sports field complex with playing areas for softball, flag football, and soccer.

The Intramural Sports program offers competition for men and women in a variety of activities including badminton, basketball, flag football, racquetball, soccer, softball, tennis, table tennis, and volleyball.

## K. INTERCOLLEGIATE ATHLETICS

Mississippi State University is a member of the Southeastern Conference, which includes in its membership twelve of the leading universities of the South. Regulations regarding participation in athletics are subject to the action of the National Collegiate Athletic Association and the Southeastern Conference. Intercollegiate sports for men include football, basketball, baseball, track, tennis and golf. Intercollegiate sports for women include basketball, volleyball, tennis, golf, cross-country, track, soccer and softball. Overall supervision of intercollegiate athletics is provided by Larry O. Templeton, Director of Athletics.

Campus athletic facilities include Scott Field (football stadium), with a current capacity of 41,200 and the Leo Seal M Club Center, the John H. Bryan Athletic Administration Building, a multi-purpose coliseum which seats 10,200 for basketball, four practice football fields, a six-court tennis complex, an indoor tennis practice facility, a lighted baseball park with a capacity of 6,700, an all-weather running track, a soccer field, a softball field, an indoor practice facility for basketball and volleyball, and a physical fitness complex which contains approximately half a football field covered with astro turf, a weight room, a training room, a team meeting room, and a locker room.

## VII. TUITION and REQUIRED FEES FOR 2003-2004\*

Except for tuition and required fees for the College of Veterinary Medicine stated hereafter, the following fees apply to students enrolled full time during the fall or spring term.

Tuition and Required Fees are assessed on a per credit hour basis at the prevailing rates as determined by The Institution of Higher Learning, the government board of the University. These rates are subject to change without notice.

	<b>Fall Semester</b>	<b>Spring Semester</b>	<b>Total</b>
A. Tuition & Required Fees	\$1,937.00	\$1,937.00	\$3,874.00
B. Residence Halls and Apartments	\$1,270.00	\$1,270.00	\$2,540.00
C. Non Resident Tuition: Additional fee for out-of-state students:	\$2,453.00	\$2,453.00	\$4,906.00

**Note: Final registration includes payment of fees. Enrollment is not completed until fees are paid.**

### Tuition and required fees (Hourly, Rounded)

Undergraduate (for 1-11 hours)	
Resident	\$161.50 per hour
Non-resident fee	\$204.50 per hour
Graduate (for 1-8 hours)	
Resident	\$215.25 per hour
Non-resident fee	\$272.75 per hour

A student will be considered full-time for tuition and fee purposes when registered for 12 or more hours undergraduate and 9 or more hours graduate. Part-time (on-campus) students registered for from 1 to 11 hours undergraduate and 1-8 hours graduate will be charged at the pre-credit-hour rate for tuition and required fees.

### Audit Charges

There are no extra fees for auditing a course; tuition is the same whether a course is taken as an audit or for credit.

### International Student Charges

All international students are assessed an Administrative Programming fee of \$100.00 each fall, spring, and summer term. Sponsored international students whose programs of study are administered through the International Services Office are assessed an additional Administrative Service Fee of \$200 each fall, spring, and summer term. Health insurance for international students will be assessed at the prevailing rate for the fall semester and for the spring/summer semester. All international students are required to pay the International Health Insurance Fee unless an acceptable, alternative policy can be proven and accepted by the International Services Office, preferably prior to registration. Health insurance charges will not be removed after the 10th class day.

### Sponsored International Student Charges

The International Services Office will administer the programs of study for international students who receive all or most of their financial support in the form of scholarships, grants, or awards from U.S. government agencies, foreign government agencies, private and/or international agencies, or foreign employers, and students whose financial support is administered by foreign embassies and third-party billed by Mississippi State University, assessing a fee of \$200 each fall, spring and summer term.

### Tuition Waivers

Mississippi State University employees who have appropriate approval may have tuition and required fees remitted for up to six (6) hours per semester with a maximum of 18 hours per calendar year. Employees are required to pay tuition and required fees for any additional hours taken during the enrollment period and other assessments to their student account. Students, faculty and staff are responsible for service fees incurred if tuition waiver approval is not finalized on a timely basis.

Senior citizens (65 or over) may take courses without paying tuition and required fees, although registration is on a space available basis and must be completed after classes begin.

### Unpaid balances from previous semesters

Any outstanding and past due amounts owed to the University must be paid in full before a student may register for additional courses or make schedule changes. All payments received on student accounts will be applied to charges in the same order in which the charges were incurred. A student who has a hold on his/her record because of an overdue account may not receive a transcript or a diploma until the account is cleared.

\* The University reserves the right to refuse acceptance of checks presented by students who have had previously returned checks. In such cases payment must be made by cash, money order, certified bank check or credit card.

## OTHER INFORMATION

### Student Activities

All students, by payment of tuition and required fees, are eligible for use of facilities, participation in intramural sports, admission to intercollegiate athletic events, the student newspaper, student health services and other benefits.

### Billing

Billing statements are available to students on about the 15th of each and every month via the University's web page. These statements contain a comprehensive summary of most charges to the students account by the University. It is the responsibility of the student to maintain a current billing address via the web.

### Service Charges

There is a 25 day grace period to make payment on billed charges. There will be a service charge at the rate of 1.5% assessed per month on any charges outstanding greater than 25 days from billing. As a rule, the regular monthly due date falls on the 9th of each month.

### Attorney and Collection Fees

Students who do not pay their fees by the end of the term may be turned over to an outside collection agency for assistance in collecting. The prevailing collection cost rate will be added to the amount owed by the student to cover the collection agency cost. If an Attorney's services are needed to collect an unpaid balance, the student shall be responsible for payment of the attorney's fees, plus all court and other collection cost incurred.

### Course Participation Fees

Fees in addition to tuition are associated with some courses which require the use of special equipment, facilities or materials. These fees, which vary from course to course, will be collected as part of registration.

### Schedule Change Fees

Courses may not be added after the first ten class days of a semester. Any change in class schedules between the 10th class day and two weeks before the end of a semester will incur a charge of \$50 per drop. Schedule changes made after initial registration and payment of fees may generate additional charges to students. Such additional charges are subject to the same payment schedules and penalties as the initial charges, and additional charges should be paid promptly to avoid service fees.

### Other fees

Fees which may be incurred by students include Thesis/Dissertation Binding Fee, \$12; Microfilm Fee, Dissertation, \$55, Thesis, \$45; Copyright \$35; Student Identification Card Replacement Fee, \$10; and Spouse Identification Card, \$16 per semester (allows student spouse to attend campus events in same manner as student), and Professional Golf Management Fee, \$350.

### Housing Fees

To live in a residence hall, students must sign a nine-month housing contract. Rent is payable at a rate of \$1270.00 per semester for both the fall and spring semesters, based on double occupancy. Private rooms may be rented when space is available for \$1675.00 per semester.

## PAYMENT and REFUNDS

Current tuition and required fees should be paid at the established monthly due date. Partial payments of an account balance are permitted during the semester/term. However, a monthly service fee (1.5%) will be assessed on charges unpaid by the due date (approximately 25 days from the billing date). All service charges may be avoided by paying the full account balance each month by the payment due date. IF mailing your payment, **please mail at least five (5) business days prior to the date to insure it is received and credited to your account by the payment due date.**

You are responsible for payment of all tuition and fee charges unless you either CANCEL YOUR SCHEDULE OR WITHDRAW FROM SCHOOL. See refund schedule published in the Master Schedule or on the web, click on *Refund Policy* for details of refund amounts at various stages of cancellation or withdrawal. **Failure to take appropriate withdrawal action may result in significant payment obligations.**

**Accepted Forms of Payment:** Personal or corporate checks, money orders, cashiers' checks, and credit cards (American Express, Discover, MasterCard, Visa). **PLEASE PROVIDE YOUR SOCIAL SECURITY NUMBER WITH ALL PAYMENTS. Cash payments may be made only at cashier windows. DO NOT mail or place cash payments in drop boxes.**

### Payment of fees by students receiving financial aid or scholarships

Students who receive a scholarship or need-based financial aid from the University are expected to use their financial aid or scholarship award to complete payment of tuition and required fees. The remaining balance of scholarship and financial aid funds is available to be used for other educational expenses only after tuition and fees have been paid. A "Memo" balance of Financial Aid on your statement may not prevent service fees after the first billing for the term. Only timely filing of your Financial Aid will assure a timely disbursement to prevent service fees.

### Refunds of tuition and fees

During the first 10 class days of an academic semester, courses dropped result in a 100% tuition and fees refund. No refunds are made for courses dropped after the 10th class day.

#### Drop Policy For First And Second 5 Week Terms

Drops for first five week and second five week summer terms will be refunded at 100% during the first three class days. After the third class day, no refunds are made for individual courses dropped. The ten week term will be refunded at 100% during the first five class days. A refund schedule for withdrawals may be obtained from the Registrar.

**Student Accounts.** A financial record for each student is kept in the Account Services Office in Garner Hall. The information is considered confidential; however, the records of students will be available for examination by authorized representatives of the Government.

## COLLEGE of VETERINARY MEDICINE - 2003/2004

To inquire about tuition and fee information, please contact the College of Veterinary Medicine at 662-325-1129 or visit our website at [www.cvm.msstate.edu](http://www.cvm.msstate.edu).

The College of Veterinary Medicine shall require a \$500.00 deposit from all new entering students into the (DVM) program. This deposit will be due as described in the letters of invitation from the College and shall be applied to the regular tuition of the student and is not refundable. These rates are based on 2002/2003 fees and are subject to change without notice.

Doctor Veterinary Medicine:	Per Semester
Vested (includes all tuition and fees)	\$3,213.35
Non-vested (includes all tuition and fees)	\$9,863.35

Determination of the Professional Education Fee assessed to each student is based on documentation of participation in the State of Mississippi tax system up to and including the previous calendar year prior to acceptance into the DVM Program. PEF status is determined upon admission into the program, and PEF status will not change. To be exempt from paying the Professional Education Fee, a student must prove four years of participation in the State of Mississippi tax system.

### Overdue Accounts

The administrative authorities of the University will withhold the transcripts and diplomas, degree certification, letters of good standing, and other certification of enrollment and deny readmission of any student who incurs an over due financial obligation to the University.

The student's records may be cleared and a diploma or transcript released when the indebtedness is paid in full. The respective university department or agency will notify the University Registrar when the indebtedness has been paid.

If a financial hold is released based upon a financial agreement and the terms and conditions of that agreement are not met, we reserve the right to void the current term class schedule without notice and without promise of reinstatement of the same class schedule.

**Student Obligation:** Students who do not pay their fees by the end of the term may be turned over to an outside collection agency for assistance in collecting. The prevailing collection cost rate will be added to the amount owed by the student to cover the collection agency cost. If an Attorney's services are needed to collect an unpaid balance, the student shall be responsible for payment of the attorney's fees, plus all court and other collection cost incurred.

### Use of Checks in Payment of University Fees and other Charges; Banking Facilities

**Payment by Check.** The University will accept checks in payment of amounts due to the University for University fees, residence hall or housing rentals, utility bills, laundry services, and other University charges.

The University reserves the right to defer payment on the balance of any check tendered in excess of the amount due the University, until the check has had time to clear for payment through banking channels. A student may be dropped from enrollment when a check offered to the University is not honored by the bank on which it is drawn.

The University expects that each debt created by a returned check will be promptly and fully corrected. Failure to respond to a notice concerning a returned check may result in legal action, the denial of readmission, and the withholding of records. The maximum penalty allowed by law will be charged for any check returned by your bank for any reason. Returned checks are considered non-payment and will result in the voiding of scheduling and assessment of appropriate fees. The University reserves the right to refuse acceptance of checks presented by students who have had previously returned checks. In such cases payment must be made by cash, money order, certified bank check, or credit card.

**Banking Facilities.** Automated teller machines are located in the One Stop on east Lee Boulevard and on the ground floor of Colvard Union. These machines offer 24 hour banking services for students, faculty and staff. There are four banks located in downtown Starkville. These banks offer full banking services to all students of Mississippi State University.

### Information - Telephone Numbers (Information 325-2323)

For assistance with Fees and Expenses you may use the following resources:

<b>MSU INFOLINE</b>	<b>325-4636</b>
Account Services	325-2071
Student Financial Aid and Scholarships	325-2450
Registrar	325-2022
Housing and Residence Life	325-3555
MoneyMate	325-3387
Sponsored Student Programs	325-8017
Telecommunications	325-2212

### Web Instructions

From the MSU main web page, select *Intranet*; secure user access using your personal user i.d. and pin; from the menu select *personal information* main menu;

1. To change your billing address or E-mail address, select *Update Address Information*.
2. To view your current or prior billing statement, select *View Your Billing Statement*.
3. To view your current account detail, select *View Your Account Detail*.
4. To make a payment by credit card, select *Make a Payment by Credit Card*.

## VIII. STUDENT FINANCIAL AID

### General Information

Many Mississippi State University students receive various types of financial aid to help pay the costs associated with attending college. The following information is provided to inform students and their families of the estimated costs of attending MSU, the types of financial aid available to help pay these costs, some of the general aid eligibility requirements, and the aid application procedures. The information contained in this section is accurate as this document went to print. Please visit our website at: [www.msstate.edu/dept/SFA](http://www.msstate.edu/dept/SFA) for further information and updates.

#### I. Student Expenses - The Cost of Attending MSU - 2003-2004

The following list of basic university expenses covers those for a full-time, undergraduate student living in a residence hall on campus for a nine month academic year. Note: These costs are average costs, based on the 2002-2003 school year costs and are subject to change.

Tuition and Fees	\$3,874.00
Books and Supplies	\$ 750.00
Residence Halls	\$2,230.00
Meals*	\$3,035.00
Personal And Transportation	\$1,995.00
Total (Mississippi Resident)	\$11,884.00
Non-Resident Fees (Add)	\$4,906.00
	\$16,790.00 Non-Resident

\* Students participating in the University's Seven Day Meal Plan will incur an additional \$505.00 in costs (in addition to the above estimated meal costs).

## II. Sources of Financial Aid

Federal Sources of Financial Aid Programs are "need based" or "non need based" as determined by the federally mandated needs analysis formula.

### A. Federal Sources of Financial Aid

1. Pell Grants - A federal student aid program designed to provide a foundation of gift aid to students who demonstrate financial need. All undergraduate students enrolled for their first undergraduate degree are eligible to apply for Pell Grants. Pell Grants awards for the 2002-2003 year ranged from \$400 to a maximum of \$4,000. Depending on Congressional allocations, Pell Grant amounts may change each year.
2. Federal Work-Study - A program of part-time employment for students who demonstrate financial need. Eligible students may work up to 18 hours per week during regular school sessions.
3. Stafford (subsidized and unsubsidized) Student Loans - Long-term loans may be provided by participating banks and/or other lending institutions for students who need assistance in meeting educational expenses. Subsidized loans are based upon financial need. Unsubsidized loans are not based upon financial need.
4. Perkins Student Loans - A program of long-term, low-interest loans to students who demonstrate financial need to meet college expenses. No interest accrues, nor does payment begin, until after the borrower ceases to be at least a half-time student.
5. Supplemental Educational Opportunity Grants - A federally sponsored program to provide gift aid for undergraduate students with exceptional financial need. Funds are limited. Apply early each year.
6. Parent Loan for Undergraduate Students (PLUS) - PLUS Loans are for the parents of dependent students. Parents may borrow on behalf of their eligible dependent student. PLUS Loans are non-need based in that parents are eligible to be certified by the school if other funds have not covered the student's cost of attendance.
7. Leveraging Educational Assistance Partnership Program (LEAP) - A federal and state sponsored program to provide gift aid for undergraduate students with exceptional financial need. Funds are limited. Apply early each year.

### B. Institutional Sources of Financial Aid

1. Academic Scholarships - These awards are provided by the University to recognize outstanding academic and personal achievement by students attending MSU. Scholarship amounts range from \$100 to \$8,000 per academic year and are awarded on a competitive basis by the University Scholarship Committee.
2. Regional Scholarships - These awards provide for payment of out-of-state fees for non-residents attending the University. Awards are made by the University Scholarship Committee on a competitive basis, depending on a student's academic and personal achievement.
3. Out-of State Fee Waivers - Changes are effective for students beginning with the Fall 2001 term. Previously enrolled students will qualify for different waiver amounts and quality point averages as stated under the Bulletin guidelines for the term they initially enrolled.
  - a. Child of Alumni Waiver - This scholarship waives 50% of the Non-Resident Fee for sons and daughters of alumni. Minimum qualifications for an alum status is 48 semester hours of work completed at MSU. A student must maintain a 3.0 cumulative quality point average to renew the 50% waiver. A student may receive a 25% waiver if the cumulative quality point average drops below 3.0 but a 2.5 or better qpa must be maintained. If the cumulative quality point average ever drops below 2.5, the waiver will be permanently lost. The basis of the cumulative quality point average is monitored at the end of the fall semester.
  - b. ACT/SAT Waiver - This scholarship waives 100% of the out-of-state tuition normally paid by non-Mississippi residents that are entering freshmen who have an ACT composite score of 26 or above or a combined SAT score of 1170 or above, and a high school GPA of 3.0 or above. The fee waiver may be renewed if the recipient maintains a cumulative grade point average of 3.0 or higher. If the cumulative quality point average drops below 3.0 but above 2.5, the student can receive a 50% waiver. If the quality point average drops below 2.5, the student loses the entire out of state waiver. The loss is permanent. Cumulative quality point averages are monitored at the end of each fall semester.
  - c. Community College Transfer Waiver - This scholarship waives 100% of the out-of-state tuition normally paid by non-Mississippi residents that are community college transfer students with 60 or more semester hours and a 3.5 or higher cumulative grade point average. The waiver will be renewed if the recipient maintains a cumulative grade point average of 3.0 or higher. If the cumulative grade point average drops below 3.0 but above 2.5, the student can receive a 50% waiver. If the cumulative grade point average drops below 2.5, the student loses the entire out-of-state waiver. The loss is permanent. Cumulative grade point averages are monitored at the end of each fall semester.
4. Undergraduate Tuition Remission Policy for Children of Faculty and Staff - The partial tuition remission policy applies to all single dependent children of full time faculty and staff. See tuition remission policy for any restrictions that may apply.
5. Departmental Scholarships - Colleges and Departments within the University offer scholarships designed to assist students majoring in a specific discipline. Most are competitively awarded and renewable.
6. Emergency Short-Term Loans - The University has available for students a means of borrowing small sums of money to meet emergency expenses during the academic year. Such loans are repayable during the same semester in which the loan is made. Application is made to the Dept. of Student Financial Aid and Scholarships.
7. CIOS - A program of long-term, low interest student loans to students who demonstrate financial need to meet college expenses.
8. Sumners Scholarship - Students who are residents of Attala, Carroll, Choctaw, Montgomery, or Webster counties in the state of Mississippi may be eligible for this scholarship.
9. A portion of student tuition and fee charges is used for scholarships, tuition waivers and other operating costs.

### C. State and Other Sources of Financial Aid

1. Army/Air Force ROTC Four-Year Scholarships - Scholarships available to students interested in commissions as officers in either the Army or the Air Force. Scholarships are based on ACT scores and high-school grades, not financial need. Visit the following web pages for further information. Army ROTC: [www.msstate.edu/dept/militaryscience/info](http://www.msstate.edu/dept/militaryscience/info). Air Force: [www.msstate.edu/dept/afrotc](http://www.msstate.edu/dept/afrotc).
2. The Mississippi Tuition Assistance/Mississippi Eminent Scholars Grant (MTAG/MESG) and other state aid programs are available to residents of the state of Mississippi. Information about these programs can be obtained from the Mississippi Office of Student Financial Aid in Jackson, MS. Phone: 1.800.327.2980.

## III. To Apply for Financial Aid at MSU

For the 2003-2004 academic year the following forms MUST be completed by the student:

- A. Federal Student Aid - (Federal Pell Grant, Federal SEOG, LEAP, Federal WorkStudy, Federal Perkins Loan, Federal Stafford Subsidized and Unsubsidized Student Loans and the Federal PLUS Loan). Applicants must complete the Free Application for Federal Student Aid (FAFSA) each year. The FAFSA can be submitted in paper form or over the web at [www.FAFSA.ed.gov](http://www.FAFSA.ed.gov) and should be submitted as soon as possible after January 1st each year for the coming school year. Any required verification or tax documents should be delivered to the Department of Student Finan-

cial Aid and Scholarship at MSU by April 1st. Late applicants will be considered on a funds available basis. Mississippi State University's Federal School Code Number is 002423.

- B. Academic and/or Regional Scholarships - Submit and online MSU Scholarship application via the web. Application deadlines range from Feb. 1 to April 1. Please refer to the Scholarship application and guide for applicable deadline dates.
- C. Summers Scholarships - Students should submit the completed Summers Application to MSU via the web by the April 1st priority deadline.
- D. The University Scholarship application and Summers applications are available on line at our web site at [www.sfa.msstate.edu](http://www.sfa.msstate.edu).
- E. Mississippi Tuition Assistance/Mississippi Eminent Scholars Grant (MTAG/MESG) - Applicants should apply directly with the Mississippi Office of Student Financial Aid (MOSFA) in Jackson, MS. Applications should be submitted in the Spring of each year prior to the coming school year but no later than the state deadline date of September 15. Phone: 1.800.327.2980 for information about application procedures.
- F. Army/Air Force ROTC Four-Year Scholarships - Application forms should be available from high-school counselors or from the ROTC staff at MSU as follows: Army ROTC, Box 5447, Mississippi State, MS 39762 or Air Force ROTC, P.O. Drawer AF, Mississippi State, MS 39762. Applications are also online at the following sites: [www.ArmyROTC.com](http://www.ArmyROTC.com) and [www.afrotc.com](http://www.afrotc.com).

#### IV. Financial Aid Policies

##### A. Scholarship Criteria:

1. All scholarship awards, academic and regional, are made in accordance with guidelines established by the MSU Scholarship Committee.
2. Students currently enrolled at MSU and college transfer students are evaluated primarily on the basis of their cumulative grade-point averages.
3. Entering freshmen are evaluated on the basis of their ACT composite scores, high school grade point average, high school class standing and leadership attributes.
4. Some Academic Scholarships are not automatically renewed. Students will compete for available scholarships in subsequent years.
5. Students from Attala, Carroll, Choctaw, Montgomery, and Webster Counties in the state of Mississippi may be eligible to apply for the E. H. Sumners Award. Current residency in one of these counties is a requirement of eligibility for this scholarship.
6. All students have the right to appeal their Scholarship status. Exceptions may be made in cases of mitigating circumstances such as: Death in the immediate family, personal injury, illness, etc., as determined by the Department of Student Financial Aid and Scholarships and the University Scholarship Appeals Committee.

A student may appeal by writing to:  
 University Scholarship Appeals Committee  
 Department of Student Financial Aid & Scholarships  
 Box 6035  
 Mississippi State, MS 39762

All appeals must be in writing and include the student's name, social security number, telephone number and all the facts and documentation upon which the appeal is based. The appeals letter must be received by Student Financial Aid and Scholarships **at least** five (5) days prior to the last day to register during the spring and fall semester and prior to registration day for each summer session. The University Scholarship Appeals Committee has authority over all appeals and its decisions are final.

##### B. Federal Programs of Financial Aid

1. All Federal student-aid funds are awarded on the basis of criteria established by the United States Congress and the Department of Education, as required by Title IV of the Higher Education Act of 1965, as amended.
2. Priority in the awarding of some need-based aid is given to students with the greatest financial need first, within the availability of funds. Funds that are limited are awarded until depleted. Applicants are encouraged to apply early each year.
3. The family of a student is expected to make a maximum effort to assist the student with college expenses. Financial assistance from the University and other sources should be viewed only as supplementary to the efforts of the family. In determining the extent of a student's financial need, the University will take into account the financial support which may be expected from income, assets, and other resources of the parents and of the students as required by Federal Regulations.
4. Students themselves are also expected to use all available resources for their college expenses. This includes savings accounts, trust funds, etc.
5. The total amount of financial assistance offered by the University and other sources must not exceed the amount of financial need as determined by the student's cost of attendance and federal financial need analysis report as derived from the FAFSA. The student is responsible for notifying the Department of Student Financial Aid and Scholarships at Mississippi State University upon learning that additional educational resources/benefits (scholarships, tuition waivers, etc.) have been awarded or received.
6. Because the amount of financial assistance awarded usually reflects the financial situation of the student's family, the University does not make a public announcement of the amount of financial aid awarded.
7. The University will clearly state the total yearly cost of attendance. (See costs listed under "Students Expenses" or visit our website at [www.sfa.msstate.edu](http://www.sfa.msstate.edu).)
8. All financial assistance is awarded on an annual basis and no award implies automatic renewal from year to year. A new FAFSA, MTAG/MESG, and Summers application must be submitted each year. Other applications may also be required. Always check with the granting agency to determine application procedures and deadline dates.

##### C. Satisfactory Academic Progress for Purposes of Student Financial Aid

###### **Purpose**

To define reasonable standards for measuring academic progress in order for students to remain eligible for financial aid under Title IV.

###### **Policy**

Mississippi State University, as required by federal law, defines and enforces minimum standards for Satisfactory Academic Progress. Students receiving federal financial aid and Summers funds must conform to these minimum standards of Satisfactory Academic Progress. Students receiving federal financial assistance and Summers funds must enroll in courses leading to, and earning credit toward, a degree. These satisfactory academic progress standards will include an evaluation of each student's progress in terms of quality and quantity of progress toward the degree. Students who are not successfully completing appropriate courses will not be considered to be making satisfactory academic progress and will not be eligible for further federal financial aid. These satisfactory academic progress standards supersede any award letter that the student might have received. This policy applies to all Title IV federal Financial Aid programs at Mississippi State University and the Summers Scholarship Program.

For details regarding this satisfactory academic progress policy and other consumer information, visit our website at [www.sfa.msstate.edu](http://www.sfa.msstate.edu).

##### D. Withdrawal from School

###### 1. Treatment of Student Aid Funds when a Student Withdraws from School

Students who choose to withdraw from the University prior to the end of an enrollment period (semester) should follow the University's guidelines for withdrawing from school. An Official Withdrawal Form must be completed and submitted to the proper office before a student can be considered officially withdrawn. Information concerning the details of withdrawal procedures can be found in the MSU Bulletin or by contacting the University Registrar.

Federal student aid recipients who begin attending classes during a semester and who cease attending or performing academic activities prior to the end of the semester, and never complete an Official Withdrawal Form are considered by the federal government to have unofficially withdrawn. If University records indicate that a student did begin attending classes but subsequently unofficially withdrew, the University will

consider the Unofficial Withdrawal date to be the midpoint of the semester (unless documentation exists of a later date of academic activity by the student).

When a federal student aid recipient withdraws, officially or unofficially, after attending at least the first class day, the University will return, and the student aid recipient will be required to repay, a prorated portion of funds received based upon a federally required calculation (see Return of Title IV Funds section below).

If University records show a federal student aid recipient never attended a class and/or never performed an academically related activity for a semester or term, then the recipient never established eligibility for any aid funds that may have been disbursed for that semester or term. In addition, any student aid recipient who withdraws, drops all classes, or voids his/her schedule, etc., with an effective date prior to the first day of class for a semester or term did not establish eligibility for any aid funds that may have been disbursed for that semester or term. In either case, the student aid recipient must repay the entire amount of aid disbursed for that semester or term.

If a student did not receive any federal student aid but did receive other types of aid funds, and subsequently officially withdraws, refunds and repayments will be based upon the University's refund schedule which can be found in the University catalog.

## 2. Return of Title IV (Federal) Funds When a Student Withdraws

Under the Higher Education Amendments of 1998, the amount of aid a student has earned for the enrollment period is based on the length of time the student remains enrolled for that period. Therefore, the percentage of the enrollment period completed is also the percentage of aid the student has earned.

If a student withdraws on or before the 60% point of the enrollment period, the percentage of aid earned is equal to the percentage of time completed. (Conversely, the percentage of aid unearned is equal to the percentage of time not completed, up to the 60% point.)

A student who remains enrolled beyond the 60% point of the enrollment period has earned 100% of the aid for that period. (There would be no unearned aid.)

Repayment of the Unearned Amount is calculated as follows:

School will return the lesser of:  
total amount of unearned aid; or  
institutional charges x unearned %

Student will return:

remaining balance of unearned aid **plus** any amount the school returned that exceeds the amount of institutional charges that are credited back to the withdrawing student based upon the Institutional Refund Policy calculation.

The unearned amount of aid must be returned to the applicable Title IV aid programs in the following order:

Unsubsidized Stafford Loan  
Subsidized Stafford Loan  
Federal Perkins Loan  
Federal Plus Loan  
Federal Pell Grant  
Federal SEOG  
Other Title IV aid

With the exception of any amount owed to the school, students and/or parents who are required to return a portion or all of their loan proceeds, are allowed to repay the unearned amount according to the terms of the loan.

Examples of Return of Funds calculations are available in the Department of Financial Aid and Scholarships.

Note: The information contained in this section is subject to change, without notice, in order to comply with federal, state, or university requirements.

## IX. SCHOLARSHIPS, MEMORIALS, and LOANS\*

### UNIVERSITY SCHOLARSHIPS AND MEMORIALS

Mississippi State University is committed to the recognition of outstanding students whose academic credentials confirm their potential for success as university students. Outstanding students may be eligible for various scholarships and honors.

Numerous privately funded scholarships support the University Scholarship Program to recognize continued academic success. Please visit our web site at [www.msstate.edu/dept/sfa](http://www.msstate.edu/dept/sfa) for information regarding eligibility criteria and application information. Once an application is submitted, consideration will be given for all of the applicable awards as follows:

**Daryl Ray Arnold Memorial Endowed Scholarship** - established by Danny and Peggy Arnold. Candidates must be full-time students enrolled in the College of Business & Industry or the Department of Microbiology in the College of Arts & Sciences at MSU. Must have demonstrated academic achievement, a minimum of 3.0 GPA and be active participants in student activities. Priority will be given to eligible Kappa Sigma fraternity members.

**Attala MSU Alumni Chapter Annual Scholarship Fund** - established by the Attala Chapter of the Mississippi State University Alumni Association. Candidates must be residents of Attala County in Mississippi and be entering freshmen at MSU for the upcoming fall semester. Must have demonstrated academic achievement at high school level, be of good moral character, demonstrated leadership ability and financial need.

**Robert G. Barnett Foundation Scholarship** - established by the Robert G. Barnett Foundation. Candidates must be full-time students enrolled at Mississippi State University. Scholarship is available to all classifications - freshman through senior. Current students must have demonstrated academic achievement by maintaining a minimum of 2.5 GPA (based on a 4.0 scale). Must be graduates of either Indianola Academy or Indianola Gentry High School in south Sunflower County in Mississippi.

**The Birmingham Alumni Chapter Scholarship Fund** - established by the Birmingham Chapter of the Mississippi State University Alumni Association. Applicants must be full-time entering freshman students at MSU with a minimum high school GPA of 3.0, be residents of the Birmingham, Alabama area, be of good moral character, have demonstrated leadership ability, and have financial need.

**The Black Voices Scholarship** - established by the Black Voices Alumni Association. Applicants must be full-time student at MSU, active member of the Black Voices Choir.

**Bolivar County Alumni Scholarship** - established by the Bolivar County Alumni Chapter. This award is available to entering freshmen from Bolivar County based on a minimum GPA of 3.0, good moral character, leadership qualities, financial need.

\* Unless otherwise directed in the separate lists or descriptions, address inquiries to the Department of Student Financial Aid and Scholarships, P. O. Box 6035, Mississippi State, MS 39762.

**William F. “Sonny” Bruce Scholarship Fund** - established by friends of Sonny Bruce. Applicants must be full-time students at MSU with minimum high school GPA of 2.8 or higher and an ACT score of 23 or higher; be graduates of an accredited high school in Lowndes or Warren County, Mississippi, be of good moral character with demonstrated leadership and good citizenship, and have financial need.

**James R. and Ressie Carpenter Scholarship**—established by friends of Dr. Carpenter for his service with Mississippi Cooperative Extension Service. Applicants must be full-time students at MSU as sons or daughters of MCES employees.

**Central Mississippi Chapter of the MSU Alumni Association Annual Scholarship** - established by the Central Mississippi Chapter of the MSU Alumni Association. This scholarship will be awarded to deserving high school seniors who are planning to attend MSU and who are residents of Hinds, Madison, and Rankin counties in Mississippi.

**Coahoma County MSU Alumni Chapter Annual Scholarship** - established by the Coahoma County Alumni Chapter of the MSU Alumni Association. The scholarship will be used to assist enrolled students who are residents of Coahoma County.

**Johnny and Bessie Lynn Crane Endowed Scholarship** - established by Johnny and Bessie Lynn Crane. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Full-time entering students may apply. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership ability.

**Will R. Cooper Memorial Scholarship**-established by Brenda C. Cooper to honor her late husband. Students must be classified as junior, senior, or graduate level and demonstrate good moral character and strong leadership ability.

**Jack and Mavis Cristil Scholarship**-established by the Lee County Alumni Chapter in memory of Mrs. Mavis Cristil and in honor of Mr. Jack Cristil's many years of service to Mississippi State University as the “Voice of the Bulldogs.” This award is available to full-time freshmen students who have academic ability but do not have the financial resources to attend college and who have a 3.0 GPA or equivalent at the high school level.

**George H. Critz Memorial Scholarship**—donated by the George H. Critz Estate. This award is available to upperclass students based on academic excellence.

**Archibald Stuart Davis Memorial Scholarship** - established by Miss Alice Davis in memory of her father. This award is available to students from Mendenhall or Simpson County, or surrounding counties depending on financial need and academic achievement.

**Luke and Ruth Davis Presidential Endowed Scholarship** - established by Luke and Ruth Davis. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Full-time entering student may apply. Preference will be given to students from Tippah County, Mississippi. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership ability.

**Thomas C. and Shirley M. Dawkins Presidential Endowed Scholarship** - established by Thomas and Shirley Dawkins. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Full-time entering students may apply. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership ability.

**Deanes - Johnson Scholarship Endowment**—established by Marie Deanes Johnson to be awarded to Clay County residents.

**Desoto County Alumni Chapter Annual Scholarship** - established by Desoto County Alumni Chapter. Must be a resident of Desoto County. Students must be full-time entering freshman who graduated from Desoto County schools with a minimum GPA of 3.0 and have demonstrated leadership skills. In the event there are no eligible candidates, currently enrolled MSU students who graduated from Desoto County high schools will be considered.

**Jehu J. Dillard Scholarship**—established by Jehu J. Dillard. Recipients for this award usually have a minimum composite ACT score of 28 and a 90% or greater high school grade point average and must have graduated from Mississippi high schools.

**Charles E. Donald, Sr. and Grover Goodman Endowed Scholarship**-established by the Claiborne-Jefferson County MSU Alumni Chapter in honor of the late Charles Donald, Sr. and Grover Goodman. This award is available to entering freshmen from Chamberlain-Hunt Academy, Jefferson County High School, or Port Gibson High School based on good moral character and leadership qualities.

**S. R. Evans, Scholarship**-established by the Leflore-Carroll County Alumni Chapter in honor of Mr. Evans. This award is available to entering freshmen who have demonstrated academic achievement at the high school level or upperclass students with a minimum GPA of 3.0 based on good moral character, leadership qualities, and financial need.

**Farmers Grain Terminal** - established by Farmers Grain Terminal. Candidates must be a full-time entering freshman at MSU. Consideration given to students from East Carroll, West Carroll, Richland, Madison, Franklin, Tensas, Catahoula, and Concordia parishes in Louisiana; Bolivar, Washington, Sunflower, LeFlore, Humphreys, Holmes, Yazoo, Sharkey and Issaquena counties in Mississippi; Drew Desha, Ashley, and Chicot counties in Arkansas. Must have demonstrated academic achievement by maintaining a minimum GPA of 3.0 in high school (based on a 4.0 system).

**The John H. Filgo Trust Fund** - established by the estate of John H. Filgo. Applicants must be full-time students at MSU, residents of Sunflower County, Mississippi, be worthy scholars maintaining appropriate scholastic progress while being enrolled in a bona fide degree program, and exhibit leadership qualities, high moral character, and good citizenship. Financial need will be a consideration, but not a determining factor for selection.

**Jack “Soap” Francis Scholarship**- established by members of the Monroe County Alumni Chapter of MSU. Must be residents of Monroe County. Priority will go to entering freshmen. Must have demonstrated academic achievement, a minimum of 3.0 GPA based on a 4.0 scale. Must have demonstrated need and merit.

**Dan G. and Hilda F. Frank Memorial Scholarship**-donated by the late Dan Gaston Frank. This award is available to full-time students who demonstrate academic achievement.

**Paul A. and Mary Elgie Frederic Memorial Endowed Scholarship** - established by the Trust of Paul A. Frederic and the Trust of Mary Elgie Frederic. Candidates must be full-time students enrolled at Mississippi State University. Must be residents of Warren County, Mississippi. Must be a graduate of St. Aloysius High School, Vicksburg High School or Warren Central High School, all located in Warren County, Mississippi. Must have demonstrated academic achievement, maintaining a 3.0 GPA on a 4.0 scale. Must have demonstrated financial need.

**Harry S. Fugate memorial Scholarship** - established from the estate of Mrs. Virginia Black Fugate. Applicants must be full-time, entering freshmen, have demonstrated academic achievement, leadership ability, financial need, and be of good moral character.

**Malcolm E. Gillis Endowed Scholarship** - established by Malcolm E. Gillis. Candidates must be full-time students enrolled at Mississippi State University. Must be a student in good standing.

**David L. And Marsha K. Grady Scholarship**- established by David L. and Marsha K. Grady. Candidates must be full-time students at Mississippi State University. Must have demonstrated academic achievement, maintaining a minimum 3.0 MSU and cumulative GPA on a 4.0 scale. Must have earned a minimum 27 semester hours (for emerging leaders) or a minimum of 54 semester hours (for current leaders) by the the end of the spring semester. Must be in good disciplinary standing at Mississippi State University.

**Vaughn A. And Neva Reed Green Endowed Scholarship** - Established by Carole Green Henderson and James S. Green as a memorial to their parents. Applicants must be full-time students, have demonstrated academic achievement and leadership ability.

**John and Renee Grisham Presidential Endowed Scholarship** - established by John and Renee Grisham. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Full-time entering students may apply. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership ability.

**T.P. Groome Scholarship** - established by T.P. Groome. This award is available to students who demonstrate academic achievement and financial need.

**Senator Dick Hall Endowed Scholarship** - established by family and friends of Senator Dick Hall on the occasion of his birthday. Applicants must be full-time students, have demonstrated academic achievement, leadership ability, financial need and be of good moral character.

**The Hancock County Alumni Association Scholarship** - established by the Hancock County Chapter of the MSU Alumni Association. Applicants must be residents of Hancock County and entering freshman at MSU.

**Harrison-Stone County MSU Alumni Chapter Annual Scholarship** - established by the Harrison County Chapter of the MSU Alumni Association. This scholarship will be used to assist students who are residents of Harrison County. Must be an undergraduate or graduate student at MSU.

**Charles D. Havens, Sr. Annual Scholarship** - renamed for the Huntsville-Decatur, Alabama MSU Alumni Chapter Annual Scholarship. This scholarship was named in memory of the late Charles D. Haven, Jr., who was a very active and loved member of this chapter. This award is available to entering freshmen from the Huntsville-Decatur, Alabama Alumni area, based on leadership ability and good moral character.

**Hunter and Lila Henry Presidential Endowed Scholarship** - established by Hunter W. Henry, Jr. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Full-time entering students may apply. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership ability.

**Mickey and Babs Holliman Presidential Endowed Scholarship** - established by Mickey and Barbara Holliman. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Full-time entering students may apply. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership ability.

**John Kenneth Holloway Memorial Scholarship** - established by the Greer Family. Candidates must be full-time students enrolled at Mississippi State University. Priority on the first award from this scholarship will be given to an entering freshman. Must have demonstrated academic achievement, a minimum 3.0 on a 4.0 scale. Must have demonstrated financial need. Preference will be given to first generation college students.

**Richard Holmes Scholarship**-named in honor of the first African-American student to receive a degree from Mississippi State University, Dr. Richard Holmes. This award is available to junior and senior students only and is based on need, merit, and academic record.

**Houston, Texas MSU Alumni Chapter Scholarship** - established by the members of the Houston, Texas MSU Alumni Chapter. Must be residents of Houston, Texas area. This area will be defined for purposes of this scholarship as the counties of Harris, Montgomery, Waller, Fort Bend, Brazoria, Galveston, Chambers, Liberty, Matagorda, Wharton, Jefferson, Orange, Washington, Austin, Grimes, Brazos, Walker and San Jacinto in the state of Texas. Must be full-time entering freshmen who graduated from schools in the Houston, Texas area. In the event that there are no eligible applicants, currently enrolled students from the Houston, Texas area will be considered. Must have demonstrated academic achievement, a minimum 3.0 on a 4.0 scale. Must have demonstrated leadership skills. Leadership skills may include but are not limited to the following: community service, volunteer work, employment, club membership, awards and honors, and participation in athletics. Must write a one-page essay explaining why he or she is to attend Mississippi State University.

**Peggy Howerton Memorial Scholarship**—donated by the late Mr. J. D. Howerton to honor his wife. This award is available to juniors and seniors based on academic record.

**The Jackson County Alumni Association Endowed Scholarship Fund** - established by the Jackson County Chapter of the MSU Alumni Association. Applicants must be residents of Jackson County, who are entering freshman for the upcoming fall semester, and have demonstrated academic achievement, moral character, leadership ability and have financial need. (There are two Jackson Co. Scholarships.)

**The Frank Janous Campus Leadership Scholarship** - established by the Mississippi Farm Bureau with funds received from the friends and family of Frank Janous. Applicants must be full time students at MSU with a minimum GPA of 2.5, be of good moral character, have demonstrated leadership ability, concern for other people, truthfulness, unselfishness, and willingness to take risks for important principles. Preference will be given to active members of the Baptist Student Union, Campus Crusade for Christ, Canterbury Episcopal Fellowship, Catholic Student Association, Church of God Campus Ministry, Lutheran Student Fellowship, Nazarene Student Fellowship, Presbyterian College Fellowship, Reformed University Fellowship, or Wesley Foundation.

**Ray W. Joe Memorial Scholarship**-established by Mr. Clement Joe in memory of his father. Applicants should be full time freshmen or sophomore students from Leflore County. Special emphasis is given to those students with demonstrated financial need.

**Ray W. Joe-Joe Bing Memorial Scholarship**—established by Clement Joe and Johnny Bing Choo in honor of their fathers. This award is available to juniors and seniors based on financial need and academic record.

**C.W. "Charley" and Novis M. Jones Endowed Scholarship** - established by the children of C.W. "Charley" and Novis M. Jones. Candidates must be full-time students enrolled at Mississippi State University. Must be classified as juniors when the award is received. Must be residents of the State of Mississippi. Must have demonstrated academic achievement, a minimum of 2.5 GPA on a 4.0 scale. Must have demonstrated financial need.

**Steven Thomas Jones Memorial Scholarship**—donated by the family and friends in memory of Steven Thomas Jones. Applicants must be entering freshmen who graduated from Starkville High School. Three letters of recommendation from Starkville High School officials must accompany the application.

**Leah Langley Annual Scholarship** - established by Ling (Leah) Lin. Students must be full-time students enrolled at MSU with a minimum GPA of 3.5, have demonstrated academic achievement. Must be attendant(s) (placed by Mississippi State University's Student Support Services) who care for students with disabilities.

**Mozelle Leach Scholarship**-established by Ms. Leach. This award is available to entering freshmen from Oktibbeha County with preference given to minorities and graduates of Alexander High School based on moral character, academic achievement, leadership qualities, and financial need.

**Lee County Alumni Chapter Endowed Scholarship** - established by the Lee County Alumni Chapter. Candidates must be full-time students enrolled at Mississippi State University. Must be entering freshmen who graduated from schools in Lee County. In the event there are no eligible candidates, currently enrolled MSU students who graduated from high school in Lee County will be considered. Must have demonstrated academic achievement, maintaining a 3.0 GPA on a 4.0 scale. Must have demonstrated leadership ability.

**George R. Lewis Scholarship**-established by friends and colleagues of Dr. Lewis upon his retirement after 28 years as Director of the MSU Mitchell Memorial Library. This award is available to junior or senior students who are residents of Webster County, Mississippi, have a minimum GPA of 3.0, and have demonstrated leadership ability and financial need.

**Lincoln County Alumni Scholarship**-established by the Lincoln County Alumni Chapter. This award is available to entering freshmen from Lincoln County based on moral character, leadership qualities, and financial need.

**Lewis Love Memorial Scholarship Fund** - established by the API Warrior Basin Chapter. Must be full-time entering freshmen at MSU. If there are no eligible candidates, then currently enrolled MSU students who meet qualifications may be considered. Priority will be given to dependents of an API member or oil field related personnel. Must have demonstrated leadership characteristics.

**Bobby and Barbara Martin Presidential Endowed Scholarship** - established by Bobby and Barbara Martin. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Full-time entering students may apply. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership ability.

**E. B. McCool Scholarship**—donated by the late Inez and E. B. McCool. This award is available to upperclass students based on academic record.

**James Leonard McCullough Scholarship**—established by family and friends of Dean McCullough to be awarded to children of former Mississippi State athletes.

**Alex McKeigney Scholarship**—established by family and friends of Alex McKeigney. This award is available to upperclass students based on financial need and academic record.

**Mississippi Homemaker Volunteers, Inc. Endowed Scholarship** - established by the Mississippi Homemaker Volunteer Organization. Must be a full-time student of Mississippi State University. Must have completed requirements for high school graduation or have started college work or higher education. Must be a Mississippi Homemaker Volunteer member, or a child or grandchild of a Mississippi Homemaker Volunteer member for a minimum of 5 years prior to application. Must have at least a "C" average to apply. Must be of good character and have demonstrated leadership ability and financial need.



**The Mississippi State University Women's Club Annual Scholarship** - Established by the MSU Women's Club. Applicants must be full-time students enrolled in graduate studies in any discipline and be a United States citizen.

**Mobile, Alabama Alumni Scholarship** - established by the Mobile, Alabama Alumni Chapter to be awarded to students from the Mobile area who enroll at Mississippi State University.

**Montgomery, AL Alumni Scholarship** - established by the Montgomery, AL Alumni Chapter to be awarded to students of their area who enroll at MSU.

**G.V. "Sonny" Montgomery Scholars Program** - established in honor of G.V. "Sonny" Montgomery. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership abilities (to include Montgomery Presidential Endowed Scholarships).

**J.D. Moss and Mary Katherine Moss Endowed Scholarship** - established by Dr. Jimmy D. Moss III in honor of his parents. Applicants must have graduated from a high school in Grenada and must be full-time undergraduate students. Students must have demonstrated academic achievement, leadership ability, financial need, and be of good moral character.

**National Merit Scholarships**—National Merit Program Finalists who name Mississippi State as their first choice may be awarded an additional \$2,000 which is distributed over the four year period.

**Neshoba County Alumni Scholarship** - established by the Neshoba County Alumni Chapter to be awarded to entering freshman students from Neshoba County.

**New Orleans, Louisiana MSU Alumni Chapter Scholarship** - established by the members of the New Orleans, Louisiana MSU Alumni Chapter. Candidates must be full-time students enrolled at Mississippi State University. Must be residents of the New Orleans, Louisiana alumni district. This area includes the parishes of Jefferson, Orleans, St. Charles, St. Bernard, Plaquemines, Lafourche, Terrebonne, and Assumption. Must be entering freshmen who graduated from schools in the New Orleans, Louisiana alumni district. In the event there are no eligible applicants, currently enrolled students from the New Orleans, Louisiana alumni district will be considered. Must have demonstrated academic achievement, maintaining a 3.0 GPA on a 4.0 scale. Must have demonstrated leadership ability and/or community involvement.

**Optimist Club of Starkville R. Clay Simmons Memorial Scholarship** - established by the Optimist Club of Starkville in memory of Mr. Simmons. This award is available to full time students with a minimum high school GPA of 3.0 or minimum ACT of 25 who are residents of Oktibbeha County. The recipient must maintain a 3.0 GPA.

**Hal and Linda Parker Presidential Endowed Scholarship** - established by Hal and Linda Parker. These scholarships will cover the cost of tuition, fees, room, and board for up to eight undergraduate semesters. Full-time entering students may apply. Applicants must also have a minimum ACT score of 29 (SAT score of 1280), distinguished academic achievement, and leadership ability.

**Pearl River County Alumni Chapter Annual Scholarship** - established by the Pearl River County Alumni Chapter of MSU. Must be residents of Pearl River County. Must be full-time entering freshmen who graduated from Pearl River County schools. In the event there are no eligible candidates, currently enrolled MSU students who graduated from Pearl River County high schools will be considered. Must have demonstrated academic achievement, a minimum of 3.0 GPA based on a 4.0 scale. Must have demonstrated leadership skills and financial need.

**Mary Margarete Peebles Memorial Endowed Scholarship** - established by the Estate of Mary Margarete Peebles. Candidates must be disabled and registered with the Department of Student Support Services, having submitted documentation that verifies the existence of the disability. Must have demonstrated academic achievement, maintaining a 2.5 or better GPA on a 4.0 scale.

**Phi Kappa Phi Scholarship**—This award is made each year by the Honor Society of Phi Kappa Phi, Mississippi State University Chapter.

**A. C. Pilgreen Memorial Scholarship** - established by Mrs. A.C. Pilgreen. Candidates must be full-time students enrolled at Mississippi State University. Must be residents of Calhoun County, Mississippi. Must have demonstrated academic achievement, maintaining a 3.0 GPA on a 4.0 scale. Must have demonstrated leadership ability and financial need.

**Emily Jones Pointer Memorial Scholarship** - established from the Emily Jones Pointer Charitable Trust. This award is available to full time students with demonstrated academic achievement with first consideration given to Panola County residents.

**Mississippi State University Rhodes Scholarship Fund**— donated by Mr. and Mrs. William S. Montgomery in memory of his grandparents, Captain William Payne and Mrs. Genevieve W. Payne. To be awarded to highly qualified students by the MSU Rhodes Scholarship Committee, University Honors Program.

**Thomas Mitchell Robinson Memorial Scholarship** — established by the MSU class of 1937 in memory of the late T. Mitchell Robinson. The scholarship is available to students in all classes based on financial need and academic record.

**Rotary Mentor Scholarship** - established by the Starkville Rotary Club. Applicants should be graduating seniors from an Oktibbeha County school who demonstrate quality high school performance and financial need.

**J.E. "Red" Ruffin Scholarship** - established to memorialize and honor Mr. Ruffin who served as the first Director of Annual Giving at Mississippi State. This award is available to provide financial support of students with extraordinary need.

**Ottillie Schillig Leadership Scholarship**—established through the Ottillie Schillig Trust in Port Gibson. These scholarships cover the costs of tuition, fees, room and board, and books for four years. Recipients will be expected to participate in the University Honors Program. A minimum ACT score of 29 (SAT score of 1280) is required for consideration.

**Dr. Thomas R. Shaw Memorial Endowed Scholarship** - established by members of the George-Greene County Alumni Chapter of MSU. Must be residents of George-Greene County. Must be full-time students in any discipline who graduated from George or Green County high schools or whose parents are alumni of Mississippi State University. Must have demonstrated in order of priority: financial need, academic achievement, community service, extracurricular activities, employment, awards and distinctions, and other leadership skills.

**Shelby S. Shows Scholarship** - established by the Covington County Alumni Chapter in honor of Mr. Shows. This award is available to full-time students from Covington County based on minimum GPA of 3.0, moral character, leadership qualities, and financial need.

**Alexander T. Sidorik Memorial Scholarship** - established by Mrs. Jennie H. Sidorik in memory of her husband. This award is available to full-time students with a minimum GPA of 3.0 based on academic achievement, leadership ability and financial need.

**Adeline and Percy Simpson Memorial Scholarship**—established in 1959 through the generosity of the late Mr. Percy F. Simpson in memory of his wife, Mrs. Percy (Adeline) Simpson. The award is based on financial need and academic record. The recipient must be a resident of Hinds, Madison, or Yazoo County.

**Southeast Mississippi Alumni Chapter Scholarship**—established in honor of K. Ramsey O'Neal. Applicants must be admitted or enrolled students at MSU and residents of the tri-county area.

**T. A. Spain Scholarship**—donated by the late Mr. Thomas Spain. This award is given to upperclass students based on academic record, with preference given to black students.

**Duff Walker Sudduth Memorial Scholarship**—established from an endowment set up by Mrs. William F. Damon in memory of her late husband, Duff Walker Sudduth. This award is available to upperclass students based on academic record.

**Sumners Scholarship**—established by Mr. and Mrs. E. H. Sumners. Students from Attala, Carroll, Choctaw, Montgomery, and Webster counties are eligible to apply for the Sumners Scholarship. Current residency in one of these counties is a requirement of eligibility for this scholarship.

**James M. Thomas Memorial Annual and Endowed Scholarships** - established by the James M. Thomas and Luvie C. Thomas Foundation. Candidates must be full-time students enrolled at Mississippi State University. Preference will be given to students from Leake County, Mississippi. If no student from Leake County is eligible, other Mississippi residents may be considered. Must have demonstrated academic achievement, leadership ability and be of good moral character. Financial need will be a consideration but not a determining factor.

**Jesse I. and Lillian B. Timms Scholarship**—established by the Timms estate. This award is available to entering freshmen with a minimum composite ACT score of 28 or a high school grade point average of 90% or greater.

**Charles S. Tingle Scholarship**—established by the Sharkey-Issaquena County Alumni Chapter to be awarded to residents of Sharkey-Issaquena County, be full-time entering freshmen who graduated from Sharkey-Issaquena Academy or South Delta High School and have demonstrated academic achievement, need and merit.

**Tippah County Endowed Scholarship**—established by the Tippah County Alumni Chapter to be awarded to residents of Tippah County and a graduate of Tippah County High School, full-time student of MSU, have demonstrated academic achievement, need, and merit.

**William B. Turner Trust Scholarship**—donated by the William B. Turner Trust in memory of William B. Turner. This award is available to upperclass students based on financial need and academic record.

**Stuart Vance Scholarship**—donated by Stuart Vance. This award is available to students of all academic classes based on academic record.

**Warren County Alumni Chapter Endowed Scholarship** - established by the Warren County Alumni Chapter. Applicants must be full-time students at MSU engaged in undergraduate studies or be entering freshmen from a high school in Warren County.

**Murry and Laura Weaver Annual Scholarship** - established by Murry and Laura Weaver. Applicants should be deserving and needy students who would not otherwise have the financial resources to meet the needs of the college expenses. It is the desire of the donors that the scholarships be used primarily for recruiting students from high schools in the state of Mississippi who have acceptable grades for admission. Those students must have an identified and legitimate financial need along with a documented record of extracurricular school, community, civic, work and leadership activities.

**Wes Smythe Memorial Scholarship** - Applicants must be national merit or national achievement semi-finalists and 90%+ high school grade point average and have demonstrated leadership ability through positions held during the high school years.

**Robert Whitehead Endowment For BSU Scholarship Fund** - established by Robert Whitehead. This award is available to juniors and seniors with a minimum of a 2.2 QPA and must be a resident of Mississippi.

**Melissa Winfield Memorial Scholarship**- established by Starkville Discount Drugs in memory of Melissa Winfield, daughter of Keith and Carol Winfield. Applicants from Oktibbeha County who have some type of physical handicap with demonstrated leadership and financial need are eligible.

**Turner and Dean Wingo Endowed Scholarship** - established by Turner A. Wingo and Dean K. Wingo. Candidates must be full-time students at MSU with a minimum of 3.0 GPA, have demonstrated academic achievements and financial need.

**Yazoo County Alumni Scholarship**-established by the Yazoo County Alumni Chapter. This award is available to entering freshmen from Yazoo County based on moral character, leadership qualities, and scholarship abilities.

## COLLEGE OF AGRICULTURE and LIFE SCIENCES SCHOLARSHIPS and MEMORIALS

(Unless otherwise indicated, inquiries should be addressed to Dean, College of Agriculture and Life Sciences, Box 9760, Mississippi State, MS 39762).

Scholarships are available to undergraduates enrolled in the College of Agriculture and Life Sciences (CALs). Scholarships are awarded on an annual basis for both the fall and spring semesters. **Applications for scholarships can be made via the CALS website - <http://www.cals.msstate.edu>.** The deadline for submitting the form for the upcoming academic year (fall/spring semester) is April 1. Students selected to receive a CALS scholarship are notified in the summer.

**William A. and Gretchen Adams Scholarship Fund** - established by Mr. W.A. Adams; awarded to students on the basis of financial need, character and scholarship.

**Agriculture and Human Sciences Alumni Scholarships**—established by alumni and friends of the College of Agriculture and Life Sciences. Awarded to students on the basis of scholarship and financial need.

**Alderman Memorial Scholarship**—established by Mrs. Frances Alderman Smith as a memorial to her father, William Henry Alderman, and her uncles, Augustus Decatur Alderman and Elbert Martin Alderman.

**Charlie Rabb Ashford Endowed Scholarship in Agriculture and Life Sciences** - established by family in memory of Mr. Charlie Rabb Ashford (B.S., 1927; M.S., 1949); awarded to undergraduate or graduate students on the basis of academic achievement and leadership characteristics; may be awarded on a 2-year basis.

**Bryan Baker and Bill G. Diggs Endowed Scholarship** - established by Dr. and Mrs. James W. Shannon to honor former professors of Dr. Shannon; based on academic achievement, leadership, character, and need.

**Brasfield Scholarship**—established by Mr. and Mrs. Robert G. Brasfield; awarded to deserving students.

**Nathan Isaac Brown and Mary Buescher Brown Memorial Endowed Scholarship** - established by Mrs. Mary Buescher Brown; awarded to students on the basis of academic achievement, leadership skills, and need; preference to students from Jones County, MS or transfer students from Jones County Community College.

**C. V. Bruce, Jr. Memorial Scholarship**—established by the friends and family of Mr. C. V. Bruce.

**Maxie Bruce Endowed Scholarship** - established by family, former students, and friends to honor Mr. Bruce, a former Vocational Agriculture teacher in Mississippi; awarded to student majoring in Agricultural Information Science and Education; based on academic achievement, leadership, and need.

**Butler-York Endowed Scholarship**-established by Mr. Eugene Butler in honor of his sister, Mrs. Cordra York; awarded to students on the basis of academic record, demonstrated leadership and financial need.

**Cody M. Canoy Memorial Scholarship**—established by the Mississippi Society of Farm Managers and Rural Appraisers; awarded to an entering freshman on the basis of financial need, scholarship and leadership ability, and interest in agribusiness.

**Will D. Carpenter Endowed Scholarship in Agriculture and Life Sciences** - established in honor of members of the Carpenter family, including: Dr. Will Carpenter's parents, Mr. Horace Aubrey Carpenter (Class of 1908) and Mrs. Celeste Brian Carpenter, and his four sisters, Mrs. Mary Ella Carpenter Greenway, Mrs. Alma Carpenter Abdo, Mrs. Celeste Carpenter Sullivan, and Mrs. Anice Carpenter Powell; students must be juniors or seniors who have transferred from Mississippi Delta Community College and have been referred to the College of Agriculture and Life Sciences Scholarship Committee by the Community College; awarded on the basis of academic achievement, character, leadership ability, and need.

**Fletcher and Linda Clark Endowed Scholarship**- established by Fletcher T. Clark, Jr. and family to memorialize Linda Clark; awarded to students on the basis of academic achievement and leadership skills.

**A. Wayne Cole Endowed Scholarship in Agriculture and Life Sciences** - established by Dr. James E. Smith to honor Dr. Cole, his former professor; awarded to students of any classification whose major relates to the field of Weed Science.

**Ferrell O. Cork Memorial Scholarship**—established by Mrs. Vera Cork Eubanks in memory of her brother, Mr. Ferrell Ovona Cork. Awarded to a Choctaw County resident on the basis of financial need, merit and academic record.

**The Si Corley Memorial Scholarship in Agriculture**-established by the family of Mr. Corley in his honor; awarded to Mississippi residents who are juniors or seniors.

**Phillip C. Cunningham Endowed Scholarship** - established through the estate of Mr. Phillip C. Cunningham, a master gardener, who recognized the importance of a college education; awarded to students majoring in a field related to lawn care, landscaping, horticulture, home gardening, etc. on the basis of academic achievement, character, leadership ability, and financial need.

**Delta Pride Catfish Scholarship**—established by Delta Catfish Processors, Inc.; awarded to a junior or senior student in the College of Agriculture and Life Sciences or the School of Forest Resources, on the basis of interest in a career in the catfish industry, academic record and need.

**Sterling H. Floore, Sr. Academic Excellence Endowment**-established by the Noxubee County Chapter of the of the Mississippi State University Alumni Association to honor Mr. Sterling H. Floore; awarded to students from Noxubee County or with ties to that county.

**M. D. L. and Sophronia Alice Gholston Memorial Scholarship**—established by Mr. and Mrs. L. E. Gholston.

**Girod Scholarships**—established by Mrs. Fred (Lora Mae) Girod; awarded to Mississippi residents who complete pre-veterinary requirements at Mississippi State University and who have been accepted into the College of Veterinary Medicine for the following fall semester.

**Golightly Foundation Scholarship**—established by Mrs. Wilma G. Person and Miss Annie L. Golightly as a memorial to their parents and brothers; awarded to students on the basis of scholarship and financial need.

**Minor S. and Helen D. Gray Scholarship Fund**-established by Mr. Calvin H. Gray in honor of his father and mother, Minor S. Gray and Helen D. Gray.

**Perrin H. and Lela Grissom Scholarship in Agriculture and Home Economics** - established by Mr. Perrin H. Grissom (B.S., 1939; M.S., 1940) and Mrs. Lela Grissom; awarded to students in all classifications; based on academic achievement, character, leadership ability, and financial need.

**James Hand, Jr. Memorial Scholarship**—established by James Hand, III and Kathleen Hand Carter in memory of their father, James Hand, Jr.; awarded to students from Sharkey County, with students from south Delta having second preference and students from the Delta at large, third preference on the basis of need and merit.

**Wyatt B. Hodges-George D. Perry Memorial Scholarship in Golf** - established by Mr. and Mrs. Alfred M. "Skip" Sears, Jr. (B.S., 1971) and their two daughters, Maggi and Katherine, in memory of Mr. Sears' grandfather, Mr. Wyatt B. Hodges, and Mr. George D. Perry (B.S., 1919); awarded to undergraduate students in Turfgrass Management and Professional Golf Management; based on academic achievement, involvement in extra curricular activities, character, leadership ability, and financial need.

**Kirby Wesley Holloway Memorial Scholarship**—established by Mrs. Roberta Thompson Holloway in memory of her husband, Kirby Wesley Holloway; awarded to juniors and seniors on the basis of academic record and proven need for financial assistance.

**L.I. Jones Memorial Scholarship** - awarded to undergraduate students, first preference to juniors and seniors; based on merit and financial need.

**Mark Keenum Endowed Scholarship in Agriculture and Life Sciences**- established by friends to honor Mark Keenum; awarded to students on the basis of academic achievement and leadership skills.

**Charles E. Lindley Leadership Award**-established by Mr. James A. Bedenbaugh in the memory of his father, Mr. Poston Gore Bedenbaugh and his mother, Mrs. Parkie Childress Bedenbaugh to honor Dr. Charles E. Lindley; awarded to a senior on the basis of academic achievement, leadership skills and financial need.

**Art and Mary Massey Endowed Scholarship in Agriculture and Life Sciences** - established by Mr. James A. (Art) Massey (B.S., 1954) and Mrs. Mary Carmichael Massey; based on academic achievement, character, leadership ability, and financial need.

**Robert H. McCarty Memorial Scholarship**- established by family, friends, and associates to memorialize Robert H. McCarty; awarded to hard-working students committed to an agriculture-related career; preference to Mississippi residents with majors related to production agriculture.

**George McNeill Scholarship Fund**-established by Mrs. George McNeill in memory of her husband, Mr. George McNeill; awarded to upperclass students from George or Greene Counties.

**Mississippi Agriculture Industry Council Scholarship** - established by the Mississippi Agricultural Industry Council; awarded on the basis of academic achievement, character, leadership, and need.

**Mississippi Rural Rehabilitation Corporation Endowed Scholarship** - established by Mississippi Rural Rehabilitation Corporation; awarded to sophomores, juniors, or seniors from Mississippi, preferably rural areas, on the basis of academic achievement.

**Mississippi Seedsmen's Association Scholarships**—established by Mississippi Seedsmen's Association; awarded each year on the basis of academic record.

**T. G. Owen and Son Memorial Scholarships**—established by The Herman and Hazel Owen Foundation; awarded to juniors and seniors majoring in Horticulture and Landscape Architecture on the basis of need, academic proficiency, extracurricular activities, and expressed intention of remaining in Mississippi after graduation.

**E.N. Ross, Jr. Agricultural Scholarship Fund**-established by Dr. and Mrs. William C. Warner in memory of E.N. Ross, Jr.; awarded to Mississippi residents who are majoring in Agricultural Economics on the basis of scholarship and financial need.

**Jimmy Sanders Scholarship**—established by Mr. Jimmy Sanders; awarded to students on the basis of financial need, character, and scholarship.

**Simmons Scholarship**—established by Drs. Cecil and Sue Simmons in honor of his parents; awarded to students enrolled in the College of Agriculture and Life Sciences or the School of Forest Resources.

**Boswell Stevens Scholarship**—established by friends of Mr. Boswell Stevens in his honor; awarded to a deserving son or daughter of a Farm Bureau family.

**Fred P. Sullivan Endowment Fund**-awarded to students on the basis of academic achievement, leadership skills and financial need.

**Bart Tomlinson Annual Scholarship in Agriculture** - established by Mr. Philip A. Troskey (B.S., 1973) and his wife Mrs. Elizabeth Troskey (B.S., 1976) in honor of her father, Mr. Bart Tomlinson, who attended Mississippi State University from 1949-51, before serving in the Korean conflict; preference given to students with interest in agriculture and/or cattle related fields; based on academic achievement and future agricultural career.

**George Rea Walker, Sr. Memorial Scholarship**—established by Stoneville Pedigreed Seed Company in memory of George Rea Walker, Sr.

**W. Winston Walker Memorial Scholarship Fund**-awarded to students on the basis of financial need and merit.

**Will C. Wansley Memorial Scholarship**- established by family and friends to memorialize Will C. Wansley; awarded to students on the basis of academic achievement, leadership skills, and financial need; preference to Agricultural Economics, Agribusiness, or Agronomy students from the South Delta area.

**Ernest Homer White Memorial Scholarship**—established by Kathryn White Smith and William Robert Smith in memory of her father, Ernest Homer White; awarded to students from Scott County or surrounding counties.

#### DEPARTMENT of AGRICULTURAL and BIOLOGICAL ENGINEERING

Direct inquiries to Department of Agricultural and Biological Engineering, Box 9632, Mississippi State, MS 39762-9632.

**Hugh M. Arant, Sr. Memorial Scholarship**-established by family, friends and associates of Mr. Hugh M. Arant, Sr.; awarded to students majoring in Agricultural Engineering Technology and Business on the basis of leadership ability, financial need and merit. A GPA of 3.0 or higher is required.

**Theo H. Dinkins, II Family Scholarship**—established in memory of his father and brother, Claude Cameron Dinkins, Sr., (1916) and Claude Cameron Dinkins, Jr. (1956); awarded to a junior or senior undergraduate majoring in Agricultural Engineering Technology and Business. Based on merit and academic record with a GPA of 2.75 or above.

**Kenneth B. Hood Scholarship in Cotton Gin Management and Technology**-established by Kenneth Hood; awarded to students in the Gin Management and Technology emphasis of the Agricultural Engineering Technology and Business curriculum. It is awarded on the basis of leadership ability, financial need and interest in a career in cotton ginning to students with a GPA of 2.5 or higher.

**Mississippi Section, American Society of Agricultural Engineers Scholarship**—donated by members, American Society of Agricultural Engineers; awarded to any student majoring in Agricultural Engineering Technology and Business or Biological Engineering with an agricultural emphasis on the basis of financial need, merit, academic record, or any combination of these.

**George B. Nutt Scholarship** - donated by George B. Nutt; awarded to students majoring in Agricultural Engineering Technology and Business or Biological Engineering on the basis of merit, academic record, financial need, or any combination of these. A GPA of 3.0 or greater is required. Preference is given to Mississippi residents and those from Clarke County.

**T. H. Scott Memorial Scholarship**—donated by the family of T.H. And Mamye Scott; awarded to any student majoring in Biological Engineering or Agricultural Engineering Technology and Business on the basis of financial need, merit, academic record, or any combination of these. A GPA of 3.0 or higher is required.

**Smith Tractor Company and M.R. Smith Memorial Scholarship**—donated by Mrs. M. Ross Smith; awarded to any student majoring in Agricultural Engineering Technology and Business or Biological Engineering on the basis of financial need, merit, academic record, or any combination of these.

#### DEPARTMENT of AGRICULTURAL ECONOMICS

Direct inquiries to Department of Agricultural Economics, Box 5187, Mississippi State, MS 39762-5187.

**Paul T. Blair Memorial Scholarship**—established by friends and colleagues to honor Dr. Paul T. Blair; awarded to junior or senior level undergraduates majoring in Agricultural Economics with an interest in Cooperative Marketing, on the basis of both need and merit.

**William Edwin Christian Endowed Scholarship in Agricultural Economics** - established by family and friends of Mr. William Edwin Christian, Jr. (B.S., 1942), a former faculty member; awarded to students in the Department of Agricultural Economics; based on academic achievement, character, leadership ability, and financial need.

**Farmers Grain Terminal Scholarship**—established by the Farmers Grain Terminal of Greenville, Mississippi; awarded to junior and senior level students enrolled in Agricultural Economics with preference given to students specializing in Grain Marketing, on the basis of need, merit, and above-average scholastic record.

**Rupert Johnston Scholarship**-established by friends and family to honor Dr. Rupert Johnston; awarded to undergraduate students majoring in Agricultural Economics or Agribusiness.

**Mark and Rhonda Keenum Annual Scholarship in Agricultural Economics**- established by Dr. Mark Keenum (B.S., 1983; M.A., 1984; Ph.D., 1988); based on academic achievement, character, leadership ability, and financial need.

**Dr. Ying-Nan Lin Memorial Scholarship in Agricultural Economics** - established by family, friends, and associates in memory of Dr. Ying-Nan Lin, a former faculty member; awarded to students in the Department of Agricultural Economics; based on academic achievement, character, leadership ability, and financial need.

**The G. Wayne Malone Endowed Scholarship in Agricultural Economics** - established by Mrs. G. Wayne Malone to honor Dr. G. Wayne Malone; awarded to undergraduate students in Department of Agricultural Economics on the basis of demonstrated academic achievement, involvement in extracurricular activities, character, leadership ability, and financial need.

**Walter Moore, Jr., Scholarship**—established by the American Dairy Association of Mississippi in honor of Mr. Walter Moore, Jr.; awarded to undergraduate or graduate students in Agricultural Economics on the basis of merit with preference given to students with an interest in Dairy Production or Dairy Marketing on the basis of both need and merit.

**Pace Scholarship**—established by Mr. & Mrs. J. V. Pace; awarded to any undergraduate student majoring in Agricultural Economics with an interest in Marketing and Farm Management.

**David W. Parvin, Sr. Memorial Scholarship**—established by friends and family to honor Dr. David W. Parvin, Sr.; awarded to undergraduate or graduate students in Agricultural Economics on the basis of merit.

**Charles F. Reynolds Scholarship**—donated by Charles F. Reynolds, Jr. and Mrs. Frances Reynolds Simmons; awarded to the outstanding senior in the Department of Agricultural Economics on basis of prior three years' academic achievement.

**David L. Trammell, Jr. Scholarship in Agricultural Economics**-established by Mrs. David L. Trammell and the Trammell children, David L. Trammell, III, Diane Barnett and Lynn Trammell, to honor Dr. David Trammell; awarded to undergraduate or graduate students in the Department of Agricultural Economics on the basis of merit.

**Dr. John E. Waldrop, Jr. Scholarship** - established in memory of and to honor Dr. John E. Waldrop, Jr. (B.S., 1954; M.S., 1961), and a former faculty member; awarded to students in the Department of Agricultural Economics; based on academic achievement, involvement in extracurricular activities, character, leadership ability, and financial need; priority to students with catfish industry interests.

#### DEPARTMENT of AGRICULTURAL INFORMATION SCIENCE and EDUCATION

Direct inquiries to Department of Agricultural Information Science and Education, Box 9731, Mississippi State, MS 39762-9731.

**Emmie Williams Memorial Scholarship**-established in memory of Emmie Williams; awarded to undergraduate students majoring in Agricultural and Extension Education; on the basis of need, merit or any combination of these with a GPA of 3.0 or better.

**Maxey Bruce Scholarship** - established in recognition of the contributions made by Mr. Maxey Bruce to Agricultural Education; awarded to undergraduate students pursuing a major in Agricultural Information Science.

#### DEPARTMENT of ANIMAL and DAIRY SCIENCES

Direct inquiries to Department of Animal and Dairy Sciences, Box 9815, Mississippi State, MS 39762-9815.

**Bryan and Nona Baker Endowed Scholarship in Animal and Dairy Sciences** - established by Dr. Bryan Baker (B.S., 1947; M.S., 1952), a former faculty member, and his wife Mrs. Nona Baker; awarded to students, sophomore or above, in the Department of Animal and Dairy Sciences; based on academic achievement, leadership ability, and character.

**Bedenbaugh Scholarship Fund**—established by James A. Bedenbaugh for scholarships in Animal Science in memory of Poston Gore Bedenbaugh

**Reverend and Mrs. William Page Brown Memorial Scholarship**— established by Dr. and Mrs. Paul B. Brown in memory of his parents; awarded to students majoring in Animal Science.

**Billy Gene Diggs Memorial Scholarship**—established by friends and colleagues to honor Dr. Billy Gene Diggs; awarded to junior or senior level undergraduates and either majoring in Animal Science or an active member of the Block & Bridle Club on the basis of need and merit.

**Dixie National Scholarship**—donated by the Dixie National Association; two scholarships, awarded on the basis of financial need, merit, academic record or any combination of these. The recipients must be majoring in Animal Science.

**Werner and Alice Essig Endowed Graduate Student Scholarship in Nutrition** - established by Dr. Werner Essig, a former faculty member, and his wife Mrs. Alice Essig; awarded to graduate students pursuing either a M.S. degree or Ph.D. degree in Ruminant Nutrition in Animal and Dairy Sciences or in Human Sciences; based on academic achievement, leadership ability, character, and financial need.

**Fuquay Endowed Scholarship in Animal and Dairy Sciences** -established by Dr. John W. Fuquay, a former faculty member and his wife, Mrs. Charlotte Fuquay, with support from former students and associates; awarded annually to support the education of students with dairy interest in the Department of Animal and Dairy Sciences.

**Higgins Memorial Scholarship(s)**—donated by the Mississippi Jersey Cattle Club in memory of Mr. L. A. Higgins, Extension Dairyman; awarded to Dairy Science majors (Dairy Production option) who are residents of Mississippi. Students with Jersey cattle experience are given preference. Three or four scholarships are awarded annually.

**Henry H. Leveck Memorial Scholarship**—donated by Mrs. Hortense Leveck. Candidates must be full time students, junior or senior classification and be majoring in Animal Science. Awarded on the basis of leadership, academic achievement, financial need, or any combination of these.

**Janice McCool Durff and Alma McCool Liles Endowment and Scholarship Fund**—established by Barney and Inez McCool to honor their daughters. Candidates must be full time students majoring in Animal Science; awarded on the basis of financial need, merit, academic achievement, or any combination of these.

**W. L. “Buddy” Richmond Scholarship**—donated by the Mississippi Pork Producers Association in honor of W. L. “Buddy” Richmond, retired Extension Swine Specialist; awarded on the basis of financial need, merit, academic record or any combination of these. The student must be majoring in Animal Science.

**O. W. Scott Memorial Scholarship**—donated by Delta Santa Gertrudis Association in memory of O. W. Scott, a pioneer breeder of Santa Gertrudis cattle in Mississippi; awarded on the basis of financial need, merit, academic record or any combination of these. The recipient must be majoring in Animal Science.

#### DEPARTMENT of BIOCHEMISTRY and MOLECULAR BIOLOGY

**Barrentine Endowed Scholarship in Biochemistry and Molecular Biology**—established by the Barrentine family and the Department of Biochemistry and Molecular Biology in memory of Dr. Benjamin F. Barrentine, the first head of the Department, and Mrs. Melle Ward Barrentine; based on record of academic achievement and demonstrated leadership skills; priority will be given to transfer students.

#### DEPARTMENT of ENTOMOLOGY and PLANT PATHOLOGY

**J. Frank Killebrew Memorial Graduate Student Scholarship**—established by individuals honoring the late Dr. J. Frank Killebrew; awarded to graduate students majoring in plant pathology, nematology or pest management. Selection made by Mississippi Association of Plant Pathologists and Nematologists. Direct inquiries to MAPPAN Fellowship-Scholarship, c/o Department of Entomology and Plant Pathology, Box 9775, Mississippi State, MS 39762.

**Mississippi Agricultural Consultants Association Scholarship**—established in 1992 by the Association; awarded to a student majoring in Agricultural Pest Management. Applications and inquires should be directed to: Marianna Hayes, Mississippi Agricultural Consultants Association, P. O. Box 38, Lexington, MS 39095; phone: 662-834-9938.

The following awards are presented each year during the Mississippi Entomological Association Meeting in early November. Direct inquiries to the Department of Entomology and Plant Pathology, Box 9775, Mississippi State, MS 39762-9775; phone: 662-325-2085; fax: 662-325-8837.

**Pat and Linda Harris Endowed Scholarships**—established by individuals and companies honoring Dr. Joseph P. “Pat” Harris (B.S., 1962; M.S., 1964; Ph.D., 1971) and his wife Mrs. Linda Harris (B.S., 1978; M.Ed., 1983); awarded to undergraduate and graduate students enrolled in the majors of Entomology and Agricultural Pest Management; based on academic achievement, character, residence, and financial need.

**Mississippi Entomological Association Scholarship**—established in 1960 by the Association; awarded to a student working toward a degree in Biological Sciences with emphasis in Entomology (minimum of 6 hours) or Agricultural Pest Management. Available at all Mississippi 4-year colleges.

**H. C. Mitchell Entomological Memorial Scholarship**—established in 1980 in memory of Dr. H. C. Mitchell by friends and colleagues; awarded to a student majoring in Entomology or Agricultural Pest Management at Mississippi State University.

**Redd Pest Control Scholarship**—established in the 1950’s by J. C. Redd, founder of Redd Pest Control Company; awarded to a student working toward a degree at Mississippi State University in Biological Science with emphasis in Entomology. Direct inquiries to Head, Department of Entomology and Plant Pathology, Box 9775, Mississippi State, MS 39762-9775.

**Arlie and Ethel Wilson Entomological Endowed Scholarship Fund**—established in 1993 by Dr. Arlie Wilson, Professor Emeritus, and his wife, Ethel Wilson; awarded to full-time undergraduate students majoring in Agricultural Pest Management (Entomology) at Mississippi State University.

#### DEPARTMENT of FOOD SCIENCE and TECHNOLOGY

Direct inquiries to Department of Food Science and Technology, Box 9805, Mississippi State, MS 39762-9805.

**G. R. Ammerman Food Technology Scholarship**—established by the Food Science Club and friends of Gale Ammerman; awarded to undergraduate Food Technology students on the basis of academics, need and citizenship.

**Joe and Leota Cardwell Scholarship Fund**—donated by Dr. and Mrs. Joe Cardwell for Food Science and Technology students demonstrating academic achievement, leadership ability and financial need.

**Lorena White Cobb and A.B. Cobb Endowed Scholarship**—established by relatives in memory of Mrs. Lorena White Cobb and Mr. A.B. Cobb by a bequest from the estate of Mrs. Cobb; awarded to students in the Department of Food Science and Technology; based on academic achievement, character, leadership ability, and financial need.

**Food Industry Endowed Scholarship**—established by members of the food industry; awarded to students in Food Science and Technology major; based on academic achievement, character, and leadership ability.

**James E. Garrison Dairy Foods Scholarship**—donated by James E. Garrison to a Food Science and Technology major with an interest in dairy foods processing.

**James E. Garrison Scholarship**—donated by James E. Garrison; awarded to a Food Science and Technology major.

**James O. Hearnberger Scholarship Fund**—established by family, friends and the Tennessee Chapter Brotherhood of the Knights of the Vine for Food Science and Technology students demonstrating academic achievement and leadership ability and financial need. Recipient must be an active member of the Food Science Club.

**L.Q. Patton Memorial Scholarship**—established by Mr. and Mrs. Donald Patton for undergraduates majoring in Food Science and Technology who have an expressed interest in working with the Dairy Products area of the food industry.

#### SCHOOL of HUMAN SCIENCES

Direct inquiries to School of Human Sciences, Box 9745, Mississippi State, MS 39762-9745.

**Bedenbaugh Scholarship Fund**—established by James A. Bedenbaugh for scholarships in Human Sciences in honor of Parkie Childress Bedenbaugh.

**Burris-Key Endowed Scholarship**—established by Mrs. Ouida Burris. Mrs. Burris was a Home Demonstration Agent in Lowndes County and Clothing Specialist with the Mississippi Cooperative Extension Service between 1927 and 1947. The scholarship is named for a longtime friend and colleague, Mrs. Ida Morgan Key. The scholarship is awarded on the basis of scholarship and financial need.

**Cardwell Scholarship**—donated by Dr. and Mrs. Joe Cardwell; awarded to a Human Sciences major on the basis of leadership activities and scholastic record. Preference is given to a student who is in food, nutrition, and dietetics.

**Dorothy Dickins Memorial Scholarship**—established by friends in memory of Miss Dickins; awarded to several upperclass Human Sciences majors on the basis of scholarship and financial need.

**Werner and Alice Essig Endowed Graduate Student Scholarship in Nutrition** - established by Dr. Werner Essig and his wife, Mrs. Alice Essig; awarded to graduate students pursuing either a M.S. Degree or Ph.D. Degree in Human Nutrition in the School of Human Sciences or Ruminant Nutrition in Animal and Dairy Sciences; based on academic achievement, leadership ability, character, and financial need.

**Kappa Omicron Nu** - members of the Human Sciences honorary are awarded on basis of scholarship, leadership, and service.

**Dr. G. Wayne and Carolyn Malone Endowed Scholarship in Food and Nutrition** - established by Mrs. Carolyn Malone to honor her late husband, Dr. G. Wayne Malone; awarded to undergraduate students in the School of Human Sciences with a major option in food and nutrition based on demonstrated academic achievement, involvement in extracurricular activities, character, leadership ability, and financial need.

**Coy Hines Stennis Scholarship**—established by the Home Economists in Homemaking of Starkville in memory of Mrs. John Stennis; awarded to Mississippi residents who are Human Sciences juniors or seniors with outstanding academic record and evidence of leadership.

#### DEPARTMENT of LANDSCAPE ARCHITECTURE

Direct inquiries to Department of Landscape Architecture, Box 9725, Mississippi State, MS 39762-9725.

**James A. Bedenbaugh Landscape Design Fund**-established by James A. Bedenbaugh; awarded on the basis of need and cumulative QPA.

**Burris-Pittman Endowed Scholarship**-donated by Mrs. Ouida Midkiff Burris in honor of Mrs. Myrtis Gill Pittman; awarded on the basis of need and cumulative QPA.

**Robert A. Callaway Endowed Scholarship**-established in memory of Robert A. Callaway; awarded to a Landscape Contracting and Management major on the basis of need and cumulative QPA.

**Daylily Scholarship**-donated by the Jackson, Mississippi Daylily Society to a Landscape Architecture major enrolled in the third or fourth year design studio.

**Freda Wallace Harrison Scholarships**-donated by Mr. Robert V.M. Harrison, in honor of Mrs. Harrison; awarded to Horticulture and Landscape Architecture students on the basis of need and cumulative QPA.

**Jackson Council of Garden Clubs, Inc.**-donated by Jackson Council of Garden Clubs, Inc.; awarded on the basis of need and cumulative QP.

**Edward C. Martin, Jr. Scholarship**-funded by the Garden Clubs of Mississippi; awarded to a Mississippi native majoring in Landscape Architecture. Must be upperclassman with a minimum GPA of 3.0.

**Charles E. Parks Memorial Fund in Landscape Design** - established by family and friends in memory of Mr. Charles E. Parks, first department head of Landscape Architecture; awarded to undergraduates enrolled in the Department of Landscape Architecture, based on academic achievement, character, leadership ability, financial need.

**R.W. Distributors, insurance Scholarship in Landscape Contracting** - established by R.W. Distributors, Inc. to be awarded to a landscape contracting student; must be resident of Mississippi and have a minimum cumulative GPA of 3.0.

**Rain Bird Golf Design Scholarship**-funded by Rain Bird Irrigation Company; awarded for excellence in golf course design, based on golf design studio project in LA 4445/LA 3603.

**Toro Irrigation Scholarship**-funded by the Toro Irrigation Company; awarded to student(s) enrolled in LA 4344 with the highest score(s) on an exam administered during the spring semester.

**Robert Whitehead Scholarship in Landscape Contracting**- established by Robert Whitehead; to be awarded to a landscape contracting student; must be a resident of Mississippi and have a minimum cumulative GPA of 3.0.

#### DEPARTMENT of PLANT and SOIL SCIENCES

Direct inquiries to Department of Plant and Soil Sciences, Box 9555, Mississippi State, MS 39762-9555.

**Nan Watts Anderson Memorial Scholarship in Floriculture**-donated by Mr. W. S. Anderson, in honor of Miss Nan Watts Anderson; awarded to students specializing in Floriculture and Ornamental Horticulture on the basis of academic achievement.

**Ashley-Girling Scholarship**-donated by Reverend Martha A. Girling, in honor of Mr. Thomas E. Ashley. Awarded to students specializing in Floriculture and Ornamental Horticulture, Vegetable Crop Production and Fruit Science on the basis of academic achievement, leadership qualities and financial need.

**Walter E. Davis Scholarship Fund** - donated by the Mississippi Nurserymen's Association, Inc. in honor of Dr. Walter E. Davis; awarded to a junior specializing in Floriculture and Ornamental Horticulture on the basis of academic achievement, leadership qualities and financial need.

**Daylily Scholarship**-donated by the Jackson Hemerocallis Society; awarded to upper class students (Mississippi residents) majoring in Floriculture and Ornamental Horticulture on the basis of academic achievement and leadership qualities.

**Robert H. Dunlap Horticulture Scholarship**-established by Mr. Robert H. Dunlap; awarded to students specializing in Floriculture and Ornamental Horticulture, Ornamental Horticulture, Fruit Science or Retail Floristry on the basis of academic achievement, leadership qualities and financial need.

**Dr. Joseph B. Edmond Horticulture Scholarship Fund**-established by Dr. J. B. Edmond, former Professor of Horticulture at Mississippi State University; awarded to students specializing in Floriculture and Ornamental Horticulture, Ornamental Horticulture or Fruit Science on the basis of academic achievement (minimum 3.0 GPA) and leadership qualities.

**Garden Clubs of Mississippi Scholarship**-funded by the Garden Clubs of Mississippi; awarded to upperclass students (Mississippi residents) majoring in Floriculture and Ornamental Horticulture on the basis of academic achievement and financial need.

**Freda Wallace Harrison Scholarship**-donated by Mr. Robert V. M. Harrison, in honor of Mrs. Harrison; awarded to upperclass students (Mississippi residents) majoring in Floriculture and Ornamental Horticulture on the basis of academic achievement and financial need.

**C. D. Hoover Scholarship Fund**-donated by Dr. Jack Hoover, Donald Hoover and Darrel Hoover, in honor of C. D. Hoover; awarded to students specializing in Integrated Crop Management, Seed Science and Technology and Soil and Environmental Sciences.

**Jackson Council of Garden Clubs Scholarship**-donated by the Jackson Council of Garden Clubs; awarded to students specializing in Floriculture and Ornamental Horticulture on the basis of academic achievement and financial need.

**Mississippi Chapter of the American Society of Agronomy Scholarship**- established by the MS Chapter of the American Society of Agronomy; awarded to junior and senior students majoring in agronomy at Mississippi State University demonstrating academic achievement and financial need.

**Mississippi Florist Association Scholarship**-established in memory of Dr. Coy O. Box. Applicants must be full-time undergraduate students who demonstrate academic achievement and leadership potential. Priority will be given to students in the Retail Floristry Program and children/grandchildren of members of the MS Florist Association.

**Mississippi Nurserymen's Association Denny Phillips Endowed Scholarship** - established in memory of Mr. Travis D. "Denny" Phillips, Jr., (BLA, 1982) by the Mississippi Nurserymen's Association, Inc.; awarded to juniors or above majoring in Floriculture or Ornamental Horticulture; based on academic achievement, character, leadership ability, and financial need.

**Ralph Null Scholarship in Retail Floristry Management**- established by Geni Fulcher in honor of Ralph Null, Professor Emeritus of Floral Design at Mississippi State University; awarded to students enrolled in Retail Floristry Management demonstrating academic achievement, leadership ability and financial need.

**Overcash Horticulture Undergraduate Student Scholarship**-donated by Dr. J. P. Overcash, Emeritus Professor, and Mrs. J. P. Overcash; awarded to upperclass students specializing in Floriculture and Ornamental Horticulture, Vegetable Crop Production and Fruit Science on the basis of academic achievement (minimum 3.3 G.P.A.) and leadership qualities.

**Harold and Robbie Snell Endowed Fund for Excellence in Turfgrass Management** - established by Ms. Robbie Snell; awarded to students in the Turfgrass Management Program in the Department of Plant and Soil Sciences.

**H. B. Vanderford Soil Scholarships**-donated by Dr. and Mrs. H. B. Vanderford, in honor of the Vanderford family; awarded to undergraduate and graduate students specializing in Soil and Environmental Sciences.

#### DEPARTMENT of POULTRY SCIENCE

Direct inquiries to Scholarship Committee, Department of Poultry Science, Box 9665, Mississippi State, MS 39762-9665.

**Jason Armstrong Annual Scholarship in Poultry Science** - established by Mr. Richard Armstrong and Mrs. Charlotte Armstrong in honor of their son, Jason (B.S., 1997); awarded annually to an undergraduate student in the Department of Poultry Science; based on academic achievement, character, leadership ability, and financial need.

**Cal-Maine Foods, Inc. - BASF Scholarship for Poultry Science Majors**- funded by an annual promotion program between Cal-Maine Foods and BASF Cooperation to support undergraduate Poultry Science Majors.

**Central Industries, Inc., Ltd. Scholarship(s)**—donated by Central Industries, to support poultry science majors; awarded to undergraduates who are making satisfactory progress toward graduation. Direct inquiries to the Scholarship Committee, Poultry Science Department, P.O. Box 9665, Mississippi State, MS 39762.

**Choctaw Maid Farms, Inc. - BASF Scholarship for Poultry Science Majors**- funded by an annual promotional program between Choctaw Maid Farms and BASF Corporation to support undergraduate Poultry Science majors.

**James E. Hill Poultry Science Scholarship For Poultry Science Majors**—established by Alumni and friends of James E. Hill. The “James E. Hill Poultry Science Scholarship for Poultry Science Majors” will be awarded to a Poultry Science major who is making satisfactory progress toward his/her degree.

**Hubbard Farms Scholarships(s)**-donated by Hubbard Farms, Walpole, New Hampshire, to support Poultry Science majors; awarded to an undergraduate who is in the top 10% of his/her class.

**H. F. McCarty, Jr. Family Scholarship**—donated by H. F. McCarty, Jr. family to support Poultry Science majors; awarded to undergraduates who are making satisfactory progress toward graduation.

**Peco Foods - BASF Scholarship for Poultry Science Majors**- funded by an annual promotional program between Peco Foods and BASF Corporation.

**Poultry Science Club Scholarship(s)**—donated by the Poultry Science Club at Mississippi State University, to support the Poultry Science majors; awarded to undergraduates who are making satisfactory progress toward graduation.

**C.T. and Earline F. Ramzy Memorial Scholarship**-donated by C.T. and Earline Ramzy Estate; awarded to Poultry Science majors who are residents of Mississippi. Priority will be given to residents of Leake County, Mississippi. Entering freshman must have a “B” average in high school and upperclassmen must have a minimum 2.5 GPA to qualify for the Scholarship.

**Chip Rauch Memorial Scholarship**-established by Mr. and Mrs. Ray Rauch and children in honor of their late son and brother; awarded to a Poultry Science major who distinguishes himself/herself by overcoming adversity and demonstrating outstanding academic achievement.

**Sanderson Farms, Inc. - BASF Scholarship for Poultry Science Majors**- funded by an annual promotional program between Sanderson Farms, Inc. and BASF Corporation.

**Tyson Foundation - BASF Scholarship for Poultry Science Majors**- funded by an annual promotional program between the Tyson Foundation and BASF Corporation.

## SCHOOL OF ARCHITECTURE SCHOLARSHIPS

### SCHOOL SCHOLARSHIPS

Outstanding entering in-state as well as out-of-state freshmen are eligible for University academic scholarships. The School makes a special effort each year to recognize student achievement through numerous competitions and annual awards made possible by industry and building suppliers. These awards are made on the basis of demonstrated design excellence. All inquiries for scholarships which are selected by the Architecture Scholarship Committee should be directed to P.O. Box AQ, Mississippi State, MS 39762-5541.

**The Fulcher-Bailey Annual Scholarship**- established to honor the memory of Mr. & Mrs. Luther Harrison “Harry” Fulcher, Sr. and Mr. & Mrs. Samuel Morris Bailey, this scholarship is designated for a student in the state of Mississippi who is entering the first-year design studio who demonstrates financial need.

**Fred Carl Annual Scholarship** -This scholarship is designated for a full-time Mississippi student entering the first-year design studio who has a minimum ACT of 28 and demonstrates financial need.

**The T. Steven Davis Annual Scholarship** -This scholarship is designated for a full-time African-American student who is a resident of the State of Mississippi entering the first-year design studio and who demonstrates financial need.

**The Pryor & Morrow Annual Scholarship**- This scholarship is designed for a full-time student who is a resident of the state of Mississippi and who is entering the second year of design or higher and who demonstrates financial need.

**The Charles H. Dean Jr. Annual Scholarship**- established to honor the memory of Mr. Charles H. Dean Jr., this scholarship is designated for a full-time student who is a resident of the state of Mississippi entering the third year of design or higher and who demonstrates financial need.

**The Architectural Foundation of Mississippi Award**- This award, designated for a student who has completed second year design, recognizes a student who has demonstrated excellence in design.

**The Stephanie Mihojevich Pizzetta Memorial Scholarship** - Established to honor the memory of Ms. Stephanie Mihojevich Pizzetta, this scholarship is designated for a full-time student who has completed the second-year design studio, has a 3.0 GPA or above, and who demonstrates financial need.

**The Mississippi Lumber Manufacturers Association Award**- This award is designated for students enrolled in the first through fourth year design studios and who demonstrate excellence in the use of dimensional and/or treated lumber as an integral part of the design for a building.

**Matt L. Virden, III Memorial Scholarship**-Established to honor the distinguished career of architect Matt L. Virden, III, this award recognizes a currently enrolled student from one of the eighteen Delta counties who demonstrates outstanding achievement and is entering the third year or higher of design.

**The Boral Brick Design Award**- This award is presented to a third year design student with an outstanding design utilizing brick.

**The Mississippi Concrete Industries Association Design Award**- This award is presented to a third year design student and is determined on the basis of design excellence with particular sensitivity to materials.

**The Hollomon Architects Scholarship**- This scholarship has been established by Farrol D. “Bud” Hollomon, Jr. And has been designated for a student from the state of Mississippi who is entering their fifth year of academic work.

**The Studio South Architects Annual Scholarship** - This scholarship is designated for a full-time student who is a resident of the State of Mississippi entering the fifth-year design studio and who demonstrates financial need.

## COLLEGE OF ARTS and SCIENCES SCHOLARSHIPS and MEMORIALS

### COLLEGE SCHOLARSHIPS

Inquiries and applications should be directed to: Associate Dean, College of Arts and Sciences, P. O. Box AS, Mississippi State, MS 39762. The deadline for applications is March 8.

**H. Dean Andrews Scholarship** –endowed scholarship awarded annually to Arts & Sciences pre-medical and pre-nursing students, instructional (e.g., laboratory) equipment for above students. Special consideration given to residents of Warren County, Mississippi. The scholarship is for one year. Awardees are eligible for renewal of the scholarship but must compete with the new pool of applicants.

**Boykin Leadership Scholarship** - awarded annually to full-time freshmen enrolled in one of the major fields of study offered in the College of Arts & Sciences; ACT score of 25 or higher (or equivalent on SAT) and high school GPA not lower than 3.0; demonstrated achievements in citizenship and leadership.

**Chickasaw County Students' Scholarship Fund** –endowed scholarship awarded annually to full-time students with demonstrated academic achievement with a 3.0 GPA or higher, good moral character, demonstrated leadership, and financial need.

**Rowena Henry Creighton Undergraduate Research Awards** – endowed award for support of outstanding research-related activities by undergraduate students. Must be full-time student with a GPA of 3.0 or higher. The award is given on a year-to-year basis. Student is eligible for consideration for any other year if in compliance with the selection criteria.

**The John Elliott Family Endowed Scholarship** – awarded to a full-time undergraduate student in Arts & Sciences. The award is given on a year-to-year basis. A student is eligible for consideration in any other year; however they must again comply with the selection criteria; must maintain GPA equal to or greater than 3.0, be of good character, demonstrated leadership, willingness to work hard, financial need, interview with Arts and Sciences Scholarship Committee.

**Drs. Karen and William Hulett Endowed Scholarship** – annual scholarships for science majors, full-time students must be at least sophomores - for biology, chemistry, mathematics, or physics majors with GPA of at least 3.0 in science courses, and must be enrolled in at least eight semester hours of science courses at the time of application.

**Hunter Henry Scholarship** - endowed scholarship awarded on a four-year basis annually to (3) full-time freshman students enrolled at Mississippi State; must be a resident of the state of Mississippi, minimum ACT score of 25, and majoring in the field of chemistry or physics, demonstrate financial need. Students must maintain a 3.0 GPA and remain on pace for graduation in either chemistry or physics within four years excluding any time devlted to a co-op program.

**Kerry D. Kimbrough Memorial Scholarship** – endowed scholarship awarded yearly to a junior or senior majoring in any Arts & Sciences discipline. Candidates must have at least 2.75 GPA, resident of the state of Mississippi and demonstrate financial need.

**Adele Teitler Neaves Non-Traditional Female Student Award** – part-time or full-time non-traditional single parent with dependent children, demonstrated financial need.

**Newton F. Hamlin Endowed Scholarship**

**Hugh and Pequita Latimer Scholarship**

**College of Arts and Sciences Patron Scholarships**

**J. Mack Peacock Scholarship in Arts and Sciences**

## II. DEPARTMENT SCHOLARSHIPS

### DEPARTMENT OF AEROSPACE STUDIES (U.S. Air Force ROTC)

Inquiries should be directed to: Department Head, Department of Aerospace Studies, P. O. Box AF, Mississippi State, MS 39762.

#### Air Force ROTC Scholarships

High school seniors - any major, must have 3.0 GPA and 24 ACT to apply. Must apply by December 1 of their senior year. Four year scholarships available; full tuition, books, and monthly spending.

In-college Scholarship - any major, must have a 2.5 Cum GPA to apply. Must be enrolled in the Air Force ROTC program to apply for February and May boards. Must pass Air Force Officer Qualifying Test (AFOQT). Must pass the physical fitness test and the medical evaluation. Two and three-year scholarships available; full tuition, books, and monthly stipend.

Professional Officer Corps Incentive (POCI) - eligible juniors, seniors, or graduate students only; any major with 2.0 Cum GPA may apply; must be enrolled in Air Force ROTC. Must pass Air Force Officer Qualifying Test (AFOQT). Must pass the physical fitness test and medical evaluation. Two-year scholarships available; tuition, books, and monthly stipend.

### DEPARTMENT OF MILITARY SCIENCE (U.S. Army ROTC)

Inquiries should be directed to: Head, Department of Military Science, P.O. Box 5447, Mississippi State, MS 39762.

**Army ROTC Alumni Fund** – offset room and board expenses for a three- or four-year Army ROTC scholarship recipient with good moral character and leadership ability.

**Msgt. George Arthur Nowlin Endowed Scholarship/Leadership Award** – junior- or senior-level student enrolled in the U.S. Army ROTC program.

**Retired Officers' Association (TROA) Leadership Award** – award alternates between Army and Air Force ROTC units each year. Full-time third-year cadet with at least 75 credit hours toward the degree and with demonstrated leadership qualities and potential for exemplary military service.

## DEPARTMENT OF ART

Inquiries should be directed to: Head, Department of Art, P.O. Box 5182, Mississippi State, MS 39762.

**Ferretti/Karnstedt Sophomore Portfolio Scholarship in Art** – donated by Mr. and Mrs. John Ferretti; awarded to an Art student with the best portfolio presented at the second year Foundation Portfolio Review. The portfolio review is in December after students pass Design I & II, Drawing I & II, 3-D Design, and Intro to Computing for Artists and Designers.

**Beverly B. Gulmon Scholarship in Art** – endowed by Norman G. Germany in honor of Beverly B. Gulmon; awarded annually to entering freshmen on the basis of portfolio competition. High school seniors present a portfolio to the Art Department during the Spring Discovery Day competitions.

**L. Donovan Dodd Memorial Potter's Wheel Endowment Fund**



**DEPARTMENT OF BIOLOGICAL SCIENCES**

Inquiries should be directed to: Head, Department of Biological Sciences, P.O. Box GY, Mississippi State, MS 39762.

**H. H. Harned, Sr. Endowment in Microbiology** – endowed by the Harned family; awarded to a microbiology major on the basis of merit.

**J. Scott Ferguson, M.D., Endowed Memorial Scholarship** – awarded to full-time student planning to attend medical school in sciences (e.g., physics, chemistry, engineering).

**Dr. William E. Gardiner Memorial Award** – awarded to full-time student in plant sciences and/or genetics (e.g., biological sciences, biochemistry, agronomy, horticulture).

**H. H. Harned, Sr. Endowment in Microbiology** - endowed by the Harned family; awarded to a microbiology major on the basis of merit.

**Louvenia Henderson Memorial Pre-Med Scholarship** - donated by friends in memory of Louvenia Henderson; awarded on the basis of merit to a pre-med or pre-dental student by the Pre-Med Advisory Committee.

**John C. Longest Pre-Med Scholarship** – donated by friends to honor the physician's years of service to MSU; awarded on the basis of merit.

**Mabry-Clark Memorial Scholarship in Biological Sciences** – awarded to full-time female students in biological sciences (pre-medicine, pre-veterinary medicine, and medical technology majors).

**Ramsay and Elaine O'Neal Scholarship** – endowed by MSU medical alumni for freshmen pre-med majors; awarded and renewable for four years on the basis of merit and academic accomplishment.

**Dr. Cory E. Patton Memorial Fund** – awarded to full-time pre-dentistry students.

**Mildred Watkins Brand Pre-Med Scholarship** – established by Mrs. Brand in memory of her parents, Dr. and Mrs. Charles A. Watkins; awarded annually to a pre-med student by the University Scholarship Committee from the recommendations received from the Pre-Med Advisory Committee; awarded on the basis of financial need and merit.

**DEPARTMENT OF CHEMISTRY**

Inquiries should be directed to: Head, Department of Chemistry, Box 9573, Mississippi State, MS 39762.

**Alumni Scholarship** - awarded to incoming freshman, offered at Spring Discovery Day to the winner of the Chemistry Competition. Distributed in increments per semester for a maximum of 8 semesters and is contingent upon maintaining an overall 3.0 GPA or better and remaining a full-time student majoring in chemistry.

**The Behr Scholarship** – awarded to a junior or senior chemistry major in the ACS curriculum. Distributed in increments for 2 semesters. Student must maintain a 3.0 or better QPA. Funds provided by children of Dr. Lyle Behr.

**Dow Scholarship** - awarded to continuing full-time student, chemistry major. Distributed each semester for previous semester. Student must maintain a 3.0 or better QPA. Funds provided by the Dow Chemical Corporation.

**Chemistry Book Scholarship** – awarded to second semester freshmen through first semester seniors. Distributed each semester according to QPA for previous semester. Student must maintain at least a 3.2 semester average and be a full-time student, chemistry major. Funds provided by donations from friends and alumni, and are disbursed as long as funds allow.

**Hunter Henry Scholarship** – awarded to incoming freshman. Distributed in increments each semester for 8 semesters. Student must maintain at least a 3.0 QPA and remain a full-time student majoring in chemistry.

**Peoples Endowed Scholarship** – awarded to a sophomore student who must have achieved a minimum of 3.0 QPA and is a full-time student, chemistry major. Show financial need. The scholarship will be awarded on a year to year basis. A student who is the recipient one year is eligible for consideration in any other year; however, they must again comply with the selection criteria.

**Sheely Scholarship** – awarded to a full-time freshmen or an incoming freshman. Distributed in increments for 2 semesters. Student must maintain at least a 3.25 QPA; incoming freshman must have 90 or better average. The scholarship will be awarded on a year to year basis. A student who is the recipient one year is eligible for consideration in any other year; however, they must again comply with the selection criteria.

**Don G. Wright Memorial Scholarship** – awarded to entering freshman and sophomore or junior college transfer students. Student must maintain a 3.0 or better QPA, be a full-time student and a chemistry major. The scholarship will be awarded on a year to year basis. A student who is the recipient one year is eligible for consideration in any other year; however, they must again comply with the selection criteria.

All Chemistry majors are automatically considered for all departmental scholarships for which they are eligible. Notifications of scholarship recipients are made at various times throughout the year.

It is possible that the Chemistry Department may employ undergraduate majors to work in the laboratories. Interested students should check with their academic advisor. Likewise, stipends are often available for undergraduates who wish to perform research. Please discuss this with your advisor.

**DEPARTMENT OF COMMUNICATION**

Inquiries should be directed to: Scholarship Chair, Department of Communication, P.O. Box PF, Mississippi State, MS 39762.

**Turner Catledge Scholarship** – endowed by the *New York Times* and friends of the Catledge family in memory of Mr. Catledge, Managing Editor, Executive Editor, and Vice-President of the *New York Times*; awarded to Communication majors on the basis of need and professional promise.

**Founders Scholarships** – endowed by faculty, alumni, and friends of the department in honor of four emeritus faculty who were instrumental in the creation of MSU's Communication programs: Robert G. Anderson, Dominic J. Cunetto, E. Samuel Dudley, and Henry F. Meyer. Awarded on the basis of academic achievement and professional talent.

**Earl Love Guyton Scholarships** – endowed by the Guyton family in honor of a former student who served as editor of the *Reflector*; awarded annually to juniors and/or seniors majoring in communication; based on demonstrated merit, need, and community service/involvement.

**Paula Mabry Scholarship** - funded by Don and Paula Mabry; awarded annually to theatre students, based on contributions and promise in theatre.

**Helen and Joe Phillips Scholarships** – endowed by their sons Norvell Williams and Joe Phillips; awarded annually to a junior and senior communication students, with priority given to broadcasting students; based on academic record and leadership ability.

**Aggie G. Weems Scholarship in Journalism** – endowed by Mrs. A. G. Weems; awarded to junior and senior communication students, with priority given to journalism students; based on academic record.

**DEPARTMENT OF ENGLISH**

Inquiries should be directed to: Head, Department of English, P.O. Box E, Mississippi State, MS 39762.

**The Eugene Butler Scholarships for Creative Writing** – endowed by Mr. Eugene Butler; awarded annually to support effective writers selected in competition.

**Howell H. Gwin Scholarships in English** – endowed by Mrs. H. H. Gwin, the MSU faculty in English, and the friends of Howell H. Gwin; upper-division and graduate scholarships awarded annually on the basis of applicants' academic abilities and needs.

**The William H. Magruder Memorial Scholarship** – endowed by Mrs. Samuel Kelsall in honor of her great grandfather, Dr. William H. Magruder, one of the first professors of English at Mississippi State; awarded annually to upper-division and graduate student English majors from Mississippi.

**George B. Nutt Scholarship** – established by Mr. George B. Nutt in memory of a former member of the department, Thomas T. Brackin; awarded annually to undergraduate English majors, first preference to lower-division students and to applicants from Clarke County, MS, when available.

**Creative Writing Scholarship**

**Lewis and Betty Nolan Endowed Book Fund**

**DEPARTMENT OF FOREIGN LANGUAGES**

Inquiries should be directed to: Head, Department of Foreign Languages, P.O. Drawer FL, Mississippi State, MS 39762.

**James R. Chatham Scholarship**

**H. Stennis “Judge” Little, Sr. Scholarship** – awarded to full-time International Business students/either in Arts and Sciences or Business and Industry. Students may be freshman through senior level; must have a minimum of 3.0 GPA, be of good moral character and have demonstrated leadership ability and financial need.

**Jeanne Strauss Spanish Scholarship** – preference given to students from Clarke County.

**DEPARTMENT OF GEOSCIENCES**

Inquiries should be directed to: Head, Department of Geosciences, P.O. Box 5448, Mississippi State, MS 39762.

**Bahamian Field Studies Program Endowed Fund** - established through the efforts of Bill Liebman, a friend of the Department who had participated in the Department’s Bahamian Field Program, and who wanted more students to be able to benefit from the Bahamian field experience. Undergraduate and graduate students apply for financial assistance to the Bahamian Scholarship Committee, and awards are made depending on the student’s need and academic record. The program is open to all students, but department majors are given first consideration. Award amounts vary from case to case.

**Paul H. Dunn Memorial Scholarship** – donated by Mr. Frederic Mellen, alumni, and friends of the Department of Geosciences in memory of Paul Dunn; awarded to one or more geology majors on the basis of the following criteria: must have completed at least one semester at Mississippi State University with a GPA of no less than 3.0/4.0 in all college work, and in all work in earth sciences; must demonstrate promise as a future professional geologist (as determined by faculty in the department).

**Gordon Gulmon Memorial Scholarship** – endowed by the late Gordon W. Gulmon; awarded by the faculty of the department on the basis of scholarship to the junior or senior majors with the best overall scholastic records. The overall records in earth science courses may be used in cases of multiple persons with identical overall records. It is possible for a student to receive this award two time- once as a junior, once as a senior. The student must have an overall GPA of 3.0/4.0.

**Frederic F. Mellen Scholarship** – in memory of Mr. Frederic Mellen; awarded to one or more geology majors who schedule the Summer Field Geology course for that specific summer. The scholarship is awarded based on grades, promise as a future professional geologist, and needs of the student. Interested students should file an application with the department.

**DEPARTMENT OF HISTORY**

Inquiries should be directed to: Head, Department of History, P.O. Box H, Mississippi State, MS 39762.

**A.W. Garner Endowed Scholarship** – awarded annually to a graduate student in good standing in the History program. Has demonstrated outstanding academic achievement. Awarded on a year to year basis. Recipient may re-apply.

**A.W. Garner Scholarship** - awarded annually to one or more full-time history majors with sophomore or higher class standing. Superior performance in college level history courses. Financial need not a requirement but may be considered.

**James W. Garner Undergraduate Scholarship** – awarded annually to one or more undergraduate students. Awards made on basis of scholarly excellence.

**James Wilford Garner Graduate Fellowship** - awards three fellowship annually to incoming masters students based on scholarly excellence.

**John F. Marszalek Family Scholarship** - awarded to students with high ACT scores.

**Rowan Taylor Scholarship** – awarded annually for four years to incoming freshman history major. Superior academic achievement required throughout the tenure of the award.

**John C. Whittaker Endowed Scholarship** - awarded to full-time African-American students majoring in history; at least junior standing; and demonstrated outstanding academic achievement.

**DEPARTMENT OF MATHEMATICS AND STATISTICS**

Inquiries should be directed to: Head, Department of Mathematics and Statistics, P.O. Box MA, Mississippi State, MS 39762.

**Andersen Consulting Scholarship** – awarded to full-time mathematics and statistics, computer science, aerospace, biological, chemical, civil, electrical, computer, industrial, mechanical, or petroleum engineering, or MBA graduate students.

**Frank L. Culley Memorial Scholarship** – endowed by Colonel Frank L. Culley; awarded to a junior or senior level student majoring in mathematics or physics on the basis of academic achievement (minimum 3.0 GPA), leadership, and professional development; preference given to female or unmarried parent. (Awarded alternately by the Departments of Mathematics & Statistics and Physics & Astronomy).

**Alton C. Grimes Endowed Scholarship** – endowed by Mr. Alton C. Grimes; awarded annually to a junior- or senior-level student whose program of study includes a minimum of eighteen (18) hours of mathematics at the level of Calculus or above.

**Christopher Randolph Stark Memorial Scholarship in Mathematics** – donated by Miss Betsy Stark and the Stark family; awarded to a superior junior or senior mathematics major with qualities of leadership and character; Mississippi resident.

**Quay Webb Camp Scholarship** – awarded to full-time mathematics, statistics, or biometrics majors. African-American students of U.S. Birth, financial need, good moral character, with GPA of 2.5 in mathematics and GPA of 3.0 in statistics or biometrics.

**Dolores M. and John L. Tilley Endowed Scholarship** – endowed by Dolores M. and John L. Tilley; awarded on an annual basis to two mathematics majors, one junior-level and one senior-level, on the basis of academic achievement in the mathematics courses required of the mathematics major. Must have completed all required freshman and sophomore mathematics courses with a minimum 3.2 GPA with overall minimum of 3.0.

**James S. Wallace Math Awards Fund**

**DEPARTMENT OF PHYSICS AND ASTRONOMY**

Inquiries should be directed to: Head, Department of Physics and Astronomy, P.O. Box 5167, Mississippi State, MS 39762.

**Terry T. Crow Scholarship** – donated by former students and friends of the former department head; awarded on the basis of merit to a freshman physics major.

**Edward Fulton Scott Memorial Scholarship** – endowed by Dr. and Mrs. Joel Callahan; awarded annually to a well-qualified freshman student in the study of physics.

**H. G. Flanagan Scholarship in Engineering and in Science** – donated by Dr. James L. Flanagan and Mr. Thomas M. Flanagan in honor of their father; awarded on the basis of merit, in alternate years, to a junior or senior physics major.

**E. Irl Howell Scholarship in Physics** – donated by E. Irl and Beverly Howell; awarded on the basis of merit to freshman and sophomore applicants and/or to upper division students for research as physics majors.

**Hunter Henry Scholarship** – for freshman residents of Mississippi majoring in chemistry or physics, with a minimum composite ACT score of 25 and demonstrated academic achievement and financial need.

#### **Physics Scholarship Fund**

**Clifford A. Rose Scholarship** – donated by family, former students and friends of the former physics professor; awarded on the basis of merit to a freshman physics major.

**M. Stanley Rundel Memorial Scholarship** – donated by Dr. Robert D. Rundel and family in memory of his father; awarded on the basis of merit to a freshman physics major.

### **DEPARTMENT OF POLITICAL SCIENCE**

Inquiries should be directed to: Head, Department of Political Science, P.O. Box PC, Mississippi State, MS 39762.

**Haley Barbour Scholarships** – endowed to honor Mr. Haley Barbour, a Mississippian and former National Chairman of the Republican Party; awarded annually by the Department of Political Science to one sophomore Political Science major who evidences a determination to become involved in the political life of the nation.

**Morris W. H. "Bill" Collins Scholarship** – endowed to honor Dr. Morris W. H. "Bill" Collins, John C. Stennis Chair emeritus; awarded annually by the Department of Political Science to one African American high school senior who is a resident of Mississippi, plans to major in political science, and demonstrates potential for making contributions in some area of public service.

**Omar D. Craig Pre-Law Scholarship** – awarded annually for maximum of two years to junior pre-law major with GPA of 3.0; financial need and an interest in child advocacy.

**JAK National Security Scholarship** – awarded annually to a full-time student for maximum of four years; must be an active participant in the Mississippi Model Security Council Program with cumulative 3.0 GPA.

**John C. Stennis Scholarships** – endowed in honor of John C. Stennis; awarded annually by the Department of Political Science to at least two graduating high school seniors and/or community college transfer students. Must be Mississippi residents who plan to major in political science and demonstrate the desire and potential to become actively involved as leaders in the political and governmental affairs of the community, the state, or the nation.

### **DEPARTMENT OF PSYCHOLOGY**

Inquiries should be directed to: Head, Department of Psychology, P.O. Box 6161, Mississippi State, MS 39762.

**Peyman Psychology Graduate Student Scholarship** – full-time graduate student in good standing in clinical psychology.

### **DEPARTMENT OF SOCIOLOGY, ANTHROPOLOGY, AND SOCIAL WORK**

Inquiries should be directed to: Head, Department of Sociology, Anthropology, and Social Work, P.O. Box C, Mississippi State, MS 39762.

#### **Arthur and Pamela Cosby Scholarship**

**Fraternal Order of Police Scholarship (FOP)** – endowed scholarship for the Program in Criminal Justice and Corrections. Awarded to at least one worthy Criminal Justice/Corrections student beginning in Fall 2003. Students will be able to apply for the scholarship in Spring 2003.

**Kim Powers Memorial Award** – awarded to a full-time student dedicated to the field of social work.

**Reaves-Davenport Excellence in Social Work Scholarship** – awarded to second-semester junior, senior, or graduate with GPA 3.0 in social work.

#### **George and Clyda Rent Annual Scholarship**

**Margo Swain Endowed Social Work Student Fund** – awarded to full-time social work majors with 30 credit hours and GPA of 2.5.

## **COLLEGE OF BUSINESS and INDUSTRY SCHOLARSHIPS and MEMORIALS**

### **I. COLLEGE SCHOLARSHIPS**

Inquiries should be addressed to Sara Freedman, Dean, College of Business and Industry, P.O. Box 5288, Mississippi State, MS 39762.

**James K. Ashford Business Honors Program** – established by James and Jacque Ashford for graduates of Mississippi high schools with good moral character, financial need; academic and leadership achievement.

**Albert C. Clark Scholarship** – no set guidelines.

**Ferrill D. & Elsa M. Battley Endowed Scholarship** – donated by Ferrill and Elsa Battley of Madison, MS in honor of their three children; for juniors and seniors in Business; guidelines to be established.

**Craft Scholarship** – donated by Mr. and Mrs. William T. Wise in memory of their daughter Cathy Denise Craft; awarded each fall and spring semesters; available to all classes on the basis of need and merit. Awarded on a year-to-year basis. A student who is a recipient one year is eligible for consideration in any other year.

**Clifford Dewitt Dalton Endowed Scholarship** – established by Bill, Becky, and Will Dalton and AmFed Companies in memory of Cliff Dalton. Cliff was a 2001 graduate in General Business Administration. This scholarship is available to full-time students majoring in General Business Administration, Insurance, or Financial Services who maintain a 2.0 GPA; have shown financial need; are a natural born citizen of the United States; and have graduated from high school in the United States.

**Clifford Dewitt Dalton Memorial Scholarship** – established by Clifford and Mildred Worsham in memory of their grandson, Cliff Dalton. This scholarship has the same guidelines as the Clifford Dewitt Dalton Endowed Scholarship.

**Betty Scales Bernard Douglas Memorial Scholarship** – established by friends in memory of Betty Douglas, a 1942 graduate of the College of Business who served as Executive Secretary to Presidents of Mississippi State University from 1952 to 1984. This Scholarship is awarded each fall and spring semesters; available to a junior or senior whose major is in the College of Business and has a minimum QP of 3.2 and who has demonstrated a financial need. Awarded on a year-to-year basis. A student who is a recipient as a junior is eligible for consideration as a senior.

**Durward B. Dunn, Jr. Memorial Fund** – established for a junior student in the College of Business & Industry with a minimum 3.0 QPA and financial need.

**Bester M. Files Memorial Endowment** - no established guidelines for students.

**A.W. Garner Scholarship**-in memory of A.W. Garner; awarded to a deserving student in the College of Business and Industry.

**Charles H. Griffin Memorial Scholarship** - established for a student in the College of Business & Industry with at least 60 earned credit hours; must have a minimum 3.0 GPA and good moral character with demonstrated leadership ability, civic interest, and financial need; junior college transfer students are eligible.

**John Grisham Scholarship for Excellence** - established for undergraduate students in the College of Business & Industry; must be at least a junior at the beginning of the relevant fall semester with a minimum of 30 hours in residence at MSU; must have a minimum 3.0 GPA.

**Elizabeth Harrington Scholarship**-established by Miss Harrington's major commitment of support. Scholarship will be awarded each fall and spring semesters to a College of Business student with financial need, good character, active in college activities, and in good academic standing.

**Roland H. Hough, Jr. Endowed Scholarship**-established by Roland H. Hough, Sr. and Bobbye Hough for their love and affection for their son, Roland H. Hough, Jr.; awarded to graduates of Mississippi high schools with high academic and leadership achievement, a financial need and good moral character.

**Dr. S. Roland Jones Memorial Scholarship** - established for a full-time student in the Professional Golf Management (PGM) Program in the College of Business & Industry; student must have earned at least 60 credit hours, be PGM students in "good standing" (minimum 2.5 GPA with no grade below a "C" in co-op work experience and no "PGM probation"); must be of good moral character and have demonstrated leadership ability and financial need.

**Kerry D. Kimbrough Memorial Scholarship**—set up by his parents, Floyd and Bea Kimbrough and his brother, Rick Kimbrough for Mississippi residents only in junior year for fall and spring semester on the basis of need, merit, and a minimum QP of 2.75.

**H. Stennis "Judge" Little Scholarship** - established for a student with a 3.0 minimum GPA, good moral character, leadership, and financial need. Selected by International Business Program faculty members and Director of International Business Program.

**W. W. Littlejohn Scholarship**—donated by alumni and friends of W. W. Littlejohn, Associate Dean Emeritus; awarded to juniors and seniors enrolled in the College of Business with a minimum of 30 hours in residence at Mississippi State University. Minimum QP of 3.0 and consideration given to financial need.

**The Garland J. McCool Scholarship Endowment**—established by Ron J. and Carol McCool Ponder in memory of Garland J. McCool; awarded each fall and spring semesters; available to a junior or senior on the basis of need, merit, academic record of any combination. A student who is the recipient as a junior is eligible for consideration as a senior.

**Merchants and Farmers Bank Endowed Scholarship**—income from this endowment Scholarship provided by Merchants and Farmers Bank is to be awarded for the fall and spring semesters of each school year on the basis of academic performance, need, and demonstrated leadership potential. The Scholarship is to be available to undergraduate majors only. The recipient will be from counties in Mississippi which have Merchants and Farmers banks; and who must express a desire to work in Mississippi following graduation. A student who is the recipient one year is eligible for consideration in any other year.

**Mississippi Power Company Endowed Scholarship - Business** - established by Mississippi Power Company for a full-time undergraduate student in the College of Business and Industry majoring in finance, business administration, marketing, or accounting with a record of academic achievement and demonstrated leadership skills. Open to residents of Mississippi with preference given to residents of the Mississippi Power Company's 23-county service area.

**Harry G. Mock Memorial Scholarship** - established for a full-time student in the College of Business & Industry (must have earned at least 60 credit hours toward degree); must have a minimum 3.0 GPA and be of good moral character with demonstrated leadership ability, civic interest, and financial need; must also be working towards a degree with a career in outside sales; community college transfer students are eligible.

**Davis and Ann Mortensen Endowed Scholarship** - donated by Davis and Ann Mortensen; established for full-time undergraduate or graduate students enrolled in the College of Business and Industry who have composite ACT score of 26 or greater; records of academic achievement; and demonstrated leadership skills.

**National Bank of Commerce of Mississippi Scholarship Fund**-established for minority junior or senior students in the College of Business. Scholarship will be awarded fall and spring semesters on the basis of financial need, academic performance and demonstrated leadership potential and be from counties in MS which National Bank of Commerce of Mississippi serves.

**Vertis Ramsay Memorial Scholarship** - established by Ruth S. Ramsay for full-time students enrolled in the College of Business and Industry who have demonstrated academic achievement, with minimum of 3.0 GPA.

**Wyeth T. Ramsey Memorial Scholarship**-donated by Mrs. Wyeth T. (Lysbeth) Ramsey of Yazoo City, MS; for juniors and seniors in Business with a 3.0 or above GPA; must be a graduate of a public high school in Yazoo, MS.

**Dr. J. William Rush Annual Scholarship Fund**-donated by Kenneth M. Burns and Frederick Conner Burns, Jr. in honor of Dr. Bill rush for 35 years of unselfish dedication to students; awarded to full-time juniors and seniors enrolled in the College of Business & Industry with at least 60 hours credit towards degree; must have a minimum 2.5 GPA; must be of good moral character and have demonstrated leadership ability and financial need.

**J.B. Stroud Human Resource Management Scholarship** - established by Roberta Stroud in memory of her late husband J.B. Stroud for full-time College of Business and Industry students who have completed 60 hours toward the degree (Community and Junior College transfer students are eligible), demonstrated academic achievement by having a minimum of 3.0 GPA, be of good moral character and demonstrated leadership ability, civic interest and financial need. Open to students working toward a BBA degree in Management with emphasis in Human Resource Management.

**Sunburst Endowed Scholarship Fund**-established for graduates of Mississippi and Louisiana high schools and any other state in which Sunburst may operate: students must have proven academic achievement; leadership achievement, and must have a financial need; must be of good moral character.

**Mary Alice and R. Glenn Taylor Scholarship** -donated by Mary Alice and R. Glenn Taylor of Memphis; established for full-time College of Business and Industry students who have earned at least 60 credit hours toward their degree; demonstrated academic achievement by having a minimum 3.0 GPA; of good moral character; and have demonstrated leadership ability, civic interest and financial need. Community and junior college transfer students are eligible and are encouraged to apply.

**Bud and Sue Thompson Endowed Scholarship** - established by Mr. and Mrs. J.F. Thompson, Jr. for full-time students enrolled in the College of Business and Industry who have demonstrated academic achievement by maintaining a minimum of 3.0 GPA.

**Russell A. Weathersby Endowed Scholarship**-donated by Russell A. Weathersby of Germantown, TN; established for full-time College of Business and Industry students who have earned at least 60 credit hours toward their degree; demonstrated academic achievement by having minimum 3.0 GPA; be of good moral character; and have demonstrated leadership ability, civic interest and financial need.

**Norma Jean Whiteside Scholarship**-established by Joseph B. Whiteside as a tribute to Norma Jean Whiteside; must be a College of Business & Industry student with a minimum of 30 hours towards degree (Community and junior college transfers students are eligible); must be a full-time student in the semester Scholarship is to be received; must have a minimum 3.00 GPA and be of good moral character; must demonstrate leadership ability, civic interest, and financial need.

## II. SCHOOL/DEPARTMENTAL SCHOLARSHIPS

Some academic units in the College of Business and Industry award scholarships which have been established by gifts to these units. Students who have declared majors in these units may apply by writing to the addresses indicated.

### SCHOOL OF ACCOUNTANCY

Inquiries should be addressed to Dan Hollingsworth, Director, School of Accountancy, P.O. Box EF, Mississippi State, MS 39762.

**The Troy Baldwin Memorial Accounting Scholarship**—donated by Mr. and Mrs. Fred Baldwin in memory of Troy Baldwin; awarded to a junior or senior.

**Mark David Brasfield Memorial Accounting Scholarship**—donated by Mr. and Mrs. Lee Brasfield and Arthur Anderson & Company in memory of Mark David Brasfield; presented to a junior.

**Cellular South Endowed Scholarship** - in accounting for entering freshmen.

**Eubank and Betts Graduate Assistantship**—donated by Eubank & Betts, Certified Public Accountants, Jackson, Ms; awarded to a graduate student residing in the Jackson area.

**W. M. Gullede, Sr., Memorial Scholarship for Senior**—donated by Mrs. W. M. Gullede, Sr. and Morgan Gullede in memory of Mr. W. M. Gullede, Sr.; presented to a senior residing in the Leflore and Washington counties area.

**W. M. Gullede, Sr., Memorial Scholarship for Junior**—donated by Mrs. W. M. Gullede Sr. and Morgan Gullede in memory of Mr. W. M. Gullede, Sr.; presented to a junior residing in the Leflore and Washington counties area.

**W. M. Gullege, Sr., Memorial Graduate Assistantship**—donated by Mrs. W. M. Gullege, Sr., and Morgan Gullede in memory of Mr. W. M. Gullede, Sr., presented to a graduate student residing in the Leflore and Washington counties area.

**Dora Rose Herring Graduate Assistantship**—donated by Dora Rose Herring; presented to a graduate student.

**Roger N. Hill Memorial Accounting Scholarship** - established by friends and family of Roger N. Hill in memory of Roger, a 1973 Accounting graduate. This scholarship is available to junior and senior accounting majors with a minimum of 3.0 GPA on a 4.0 scale; Students from Clay, Lowndes, Oktibbeha, and Noxubee counties will be given preference and all applicants must submit a one-page essay detailing any community service that they have performed.

#### DEPARTMENT of FINANCE and ECONOMICS

Inquiries should be addressed to Dr. Paul Grimes, Head, P.O. Box 9580, Mississippi State, MS 39762.

**Theo H. Dinkins, II Family Scholarship**—awarded to juniors and seniors majoring in Real Estate and Mortgage Finance and who are pursuing a career in real estate upon graduation.

**Lonnie S. and Ida Mae Dyess Scholarship**—donated by Lonnie S. Dyess, Jr. family in honor of his parents; awarded in alternate years to a junior or senior pre-medical student or economics majors with a minimum QP of 2.5. Need will be considered.

**George B. Pickett/James A. Wheeler Insurance Scholarship**—major in insurance and be a junior or senior with an overall QP of 3.0.

**The Orrin Swayze Scholarship**—donated by Young Bankers Section of the Mississippi Bankers Association in honor of Arrin Swayze; awarded to banking and finance majors in competition with banking and finance majors at other universities in Mississippi.

#### DEPARTMENT of MARKETING, QUANTITATIVE ANALYSIS & BUSINESS LAW

All inquiries should be addressed to Dr. Brian Engelland, Head, Box 9582 Mississippi State, MS 39762. .

**Klumb Lumber Company Scholarship**—donated by Klumb Lumber Company; awarded to a freshman marketing major with at least a 3.25 GPA, preferably from the Mississippi Gulf Coast.

#### PROFESSIONAL GOLF MANAGEMENT

All inquiries should be addressed to Scott Maynard, Director, PGM, Box 6217, Mississippi State, MS 39762.

**Gary Chittom Memorial Scholarship** - established by friends of Gary Chittom in his memory. This scholarship is available every three years starting in 2003 to full-time students majoring in Professional Golf Management. Students must show financial need and have at least a 3.0 GPA on a 4.0 scale.

**Golf Manufacturer's and Distributors Association Scholarship**—established by the GMDS which represents U. S. and International companies who manufacture and distribute golf related items for a student majoring in Professional Golf Management. Minimum requirements are: MSU cumulative GPA of 2.50, eight months of completed coop with grade of B or better, and no PGM probations. Active participation in the PGM Club and other campus and community activities are considered.

**Wyatt B. Hodges-George D. Perry Memorial Scholarship in Golf.** Enrolled in academic area at MSU which supports the golf industry, with plans to possibly be employed in golf industry; demonstrated academic achievement and good moral character.

**PGA Gulf States Section Mississippi Scholarship**—established by the Gulf States Section of the Professional Golfers' Association of America for a Mississippi resident majoring in Professional Golf Management. Minimum requirements are: MSU cumulative GPA of 2.50, eight months of completed coop with grade of B or better, and no PGM probations. Active participation in the PGM Club and other campus and community activities are considered.

**PGA Gulf States Section Louisiana Scholarship**—established by the Gulf States Section of the Professional Golfers' Association of America for a Louisiana resident majoring in Professional Golf Management. Minimum requirements are: MSU cumulative GPA of 2.50, eight months of completed coop with grade of B or better, and no PGM probations. Active participation in the PGM Club and other campus and community activities are considered.

**PGA Minority Scholarship** - established by the Professional Golfer's Association of America. The purpose of these scholarships is to provide financial assistance to deserving PGM minority students, and/or PGM minority applicants planning to enroll in the Professional Golf Management Programs at universities having PGM programs endorsed by the PGA of America.

### COLLEGE OF EDUCATION SCHOLARSHIPS and MEMORIALS

**Clara Adele Self Andrews Music Scholarship**—established in her memory by her son, Dr. Lester Andrews. Applicants should be full-time students in their junior year who have earned at least 60 credit hours. Applicants should demonstrate musical and academic ability and promise.

**Jack L. Beall Scholarship**—donated by Mr. Jack L. Beall, a 1953 College of Education graduate. This award is available to students majoring in a Math/Science field who plan to remain in Mississippi and teach for a minimum of two years after graduation. The award is based on a minimum GPA of 3.0 and demonstrated academic achievement.

**President George Bush Scholarship**—established by MSU in honor of President Bush's commitment to education: to be awarded to an outstanding senior education major.

**Barry F. Box Memorial Scholarship**—established by the College of Education Alumni Association in memory of Barry F. Box; awarded to a College of Education undergraduate student on the basis of Scholarship.

**Nan Carpenter Cain Endowed Scholarship** - established by Winton, Brian, and Mark Cain in memory of Nan Carpenter Cain, a 1950 Industrial Arts Education graduate, who was named "Miss Industrial Education." The scholarship is to be given annually to a full-time student majoring in Technology and Education. Awarded on the basis of academic achievement (a minimum GPA of 3.0) and financial need.

**Julia Higgins Carskadon Early Childhood Education Fund**—established by the Morningstar Foundation in memory of Julia Carskadon; awarded to a full-time doctoral student in Curriculum and Instruction with an emphasis in early childhood education. Minimum 3.5 GPA on a 4.0 system.

**Choral Ensemble Annual Scholarship** - established by Walter and Ellen Newsom to be given annually to a student who is a resident of the state of Mississippi. Awarded on the basis of academic achievement (a minimum GPA of 3.0) and participation in the Choral Ensemble.

**Durward Dunn Physical Education Scholarship** - donated by Paul Dunn in memory of his father Mr. Durward Dunn. Awarded to student majoring in Physical Education.

**Education Services Foundation Annual Scholarship** - established by the Education Services Foundation to be given annually to a graduate student majoring in School Counselor Education. Awarded on the basis of academic achievement (a minimum GPA of 3.5).

**Entergy Mississippi's Excellence in Education Scholarship** - established by Entergy Mississippi, Inc., to be given annually to a full-time junior or senior majoring in General Science Education or Math Education. Awarded on the basis of academic achievement (a minimum GPA of 3.0). The recipient must be a resident of the state of Mississippi with preference given to students from one of the counties serviced by Entergy Mississippi, Inc. and who have not received scholarship or financial aid that would duplicate this scholarship.

**Lois C. Kaufman Endowment for Music Education** - established in memory of Dr. Harold F. Kaufman. Applicants should be full time Music Education majors, rising seniors, with demonstrated musical and academic achievement.

**Herbert M. Handley Scholarship** - donated by faculty, family and friends in memory of former Distinguished Professor Herbert M. Handley.

**Leveck Freshman Piano Scholarship**—donated by Mr. and Mrs. Henry Leveck; awarded to the outstanding freshman piano major on the basis of competitive performance and first-semester grade-point average.

**Annie Laurie Lyle Piano Scholarship**—donated by the Starkville Nocturne Music Club in memory of Mrs. Annie Laurie Lyle, Charter music club member and prominent Starkville piano teacher; awarded annually to an undergraduate piano major on the basis of the most progress in piano study and performance.

**Ellen Ricci Special Education Scholarship**—donated by Mr. and Mrs. Armando Ricci in support of a student who is preparing to become a special education teacher. The Scholarship is awarded on the basis of merit.

**Francis N. Matthews Memorial Scholarship**—donated by Mrs. Louise M. Davis, in memory of Francis N. Matthews; awarded to students with desire to enter the teaching profession in Technology Education, on the basis of Scholarship and financial need.

**Dewey and Marie Malouf Scholarship** - donated by Martha and Watts Ueltschey and George and Kathy Malouf in honor of their parents Dewey and Marie Malouf. Awarded to students majoring in education. Priority given to students residing in Leflore County.

**McClendon Scholarship-Special Education**—donated by Katherine McClendon Holliman in honor of her parents, Mr. and Mrs. H. T. McClendon; awarded on the basis of scholastic ability and need, by a Special Education Scholarship Committee.

**Merchants and Farmer Bank Endowed Scholarship**-income from this endowment Scholarship provided by Merchants and Farmers Bank is to be awarded for the fall and spring semesters of each school year on the basis of academic performance, need and demonstrated leadership potential. The Scholarship is to be available to undergraduate majors only. The recipient will be from counties in Mississippi which have Merchants and Farmers banks; and who express a desire to work in Mississippi following graduation. A student who is the recipient one year is eligible for consideration in any other year. Direct inquiries on the above scholarships to the Assistant to the Dean for Student Services, Box 9710, Mississippi State, MS 39762.

**Daniel R. Merrit Annual Scholarship** - established by Patsy Merrit in memory of Daniel R. Merrit, a lifetime educator and a 1961 College of Education graduate; to be awarded to a full-time undergraduate student majoring in Secondary Education. Minimum 2.5 GPA with financial need.

**Hal and Joyce Polk Music Education Scholarship** - established by Hal and Joyce Polk to be given annually to a full-time student in the Department of Music Education. Awarded on the basis of academic achievement (a minimum GPA of 3.0) and musical ability (as evidence by an audition).

**Cheryl Prewitt Christian Voice and Music Scholarship**—donated by Mr. and Mrs. James W. Tennyson and Bill, and friends, in honor of Mr. and Mrs. John Tennyson, grandparents of Cheryl Prewitt, Miss America 1980; three scholarships, given annually to an entering freshman, a transfer student, and a resident student majoring in vocal music education. Awarded on the basis of character references and vocal competition.

**Rehabilitation, Inc. Endowed and Annual Scholarship** - established by Sam Cox, Pete Mills, and Lance Robinson to help graduate students who are majoring in vocational rehabilitation or similar majors in the counselor education department. Awarded on the basis of academic achievement (maintaining a GPA of 3.0) and financial need.

**Lucinda H. Rose Scholarship** - donated by Dr. Vincent McGrath in memory of his wife and faculty member, Dr. Lucinda H. Rose. Awarded to eligible seniors majoring in elementary education.

**Royer/Scarborough Brass Scholarship** - established by Michael and Karen Brown to be given annually to a full-time returning music education major (incoming freshmen are not eligible). Awarded to an outstanding brass performer on the basis of academic achievement (maintaining a GPA of 3.0) and financial need.

**Harold Smith-Baldwin Piano & Organ Company Fund**-donated by Baldwin Piano & Organ Company in honor of Harold Smith, retiring President of Baldwin Piano & Organ Company; awarded to students enrolled in Industrial Technology, on the basis of Scholarship and financial need.

**Wilburn P. Sudduth Physical Education Scholarship** - donated by Etogle Sudduth and family in memory of Mr. Wilburn P. Sudduth. Awarded to students majoring in the Teaching/Coaching concentration in Physical Education.

**Katherine Gardner Thomas Memorial Piano Scholarship**—donated by Mr. Garnett J. Thomas in memory of his wife; two scholarships awarded annually to freshman, sophomore, or junior piano majors, and one or two scholarships awarded to entering freshman or transfer students, all on competitive performance auditions. When an organ program becomes available at Mississippi State University, upperclass students enrolled in this program shall be eligible for the scholarships.

**Cletora Tullos Piano Scholarship**—donated by Mr. George Tullos in memory of his mother; awarded annually to an incoming freshman piano student majoring in music. Awarded on basis of candidate's musical ability (as evidenced by an audition), Scholarship, and need. Direct inquiries on the above scholarships to the Assistant to the Dean for Student Services, Box 9710, Mississippi State, MS 39762.

**Henry Wamsley Famous 40 Band Scholarship** - donated anonymously to honor Mr. Henry E. Wamsley and the Famous 40 Band.

**Henry Wamsley Band Scholarship** - given in honor of Mr. Henry E. Wamsley to a member of the famous Maroon Band. Direct inquiries on the above scholarships to the Director of MSU Bands, Department of Music Education, Box 9734, Mississippi State, MS 39762.

## COLLEGE OF ENGINEERING SCHOLARSHIPS and MEMORIALS

Most freshman and community college scholarships require that you submit a written application to the Department of Financial Aid and Scholarships and are based on potential as indicated by prior school performance and/or ACT/SAT scores. On the other hand, most College of Engineering upperclass and departmental scholarships are awarded to students based on performance in engineering curriculum.

Outstanding entering freshman are eligible to apply for the Engineering and Computer Science Excellence Scholarships. The Henry scholarships are limited to freshman who enroll in Chemical Engineering or Mechanical Engineering.

Mississippi State University upperclassmen as well as students transferring to the College of Engineering from schools other than community colleges should direct inquiries regarding College of Engineering Scholarship opportunities to the Dean of Engineering, Office of Undergraduate Studies, Box 9544, Mississippi State, MS 39762.

**ACCENTURE Scholarship**- guidelines in progress

**ADTRAN Scholarship**- awarded to qualified students in Electrical, Computer or Mechanical engineering.

**J. P. Applewhite Scholarship**--awarded to qualified engineering students.

**Babcock & Wilcox Scholarship**- Awarded to qualified students majoring in Mechanical Engineering.

- J.W. Bagley Scholarship** - established to enable talented and needy students to be able to pursue careers in engineering.
- Robert & Fran Barker Scholarship**-awarded to qualified engineering students.
- Barrier Engineering Scholarship**-awarded to engineering students who have demonstrated outstanding academic achievement.
- Fred & Sara Jean Burke Engineering Scholarship**- guidelines in process
- John H. Caldwell Scholarship** - established to enable talented and needy students to be able to pursue careers in engineering.
- Sydney L. Cate, Jr. Engineering Scholarship**- established to enable talented and needy students to be able to pursue a career in engineering. Preference will be given to students of single parent families who reside in Tate or DeSoto counties in Mississippi.
- Chevron College of Engineering Scholarship**--established to award scholarships to qualified engineering students.
- Earnest & Laura Deavenport Scholarship**- awarded to qualified freshman engineering students.
- DOW Chemical Scholarship**- awarded to qualified engineering students.
- Eastman Scholars Scholarship** - for upperclass minority students in Chemical, Industrial, Electrical, and Mechanical Engineering.
- Alfred & Susan Eaton Scholarship**-established to award scholarships to qualified upperclass engineering students, with preference given to students majoring in Aerospace Engineering.
- Engineering Memorial Scholarship**—established through the efforts of the Mississippi Alpha Chapter of the Tau Beta Pi in memory of the late Dean Lucius Lamar Patterson of the School of Engineering.
- Ergon/Diversified Technology Scholarship**-awarded to qualified upperclass Chemical, Civil, Electrical, Industrial and Mechanical Engineering students.
- Michael Evans Memorial Scholarship**-Guidelines in progress.
- H. G. Flanagan Scholarship Award in Engineering and in Science**—donated by Dr. James L. Flanagan and Mr. Thomas M. Flanagan in honor of their father.
- U. Edwin & Mary K. Garrison Scholarship**-established for full-time Mississippi resident students enrolled in the College of Engineering who have demonstrated academic achievement with a minimum 3.0 grade point average and who have demonstrated financial need.
- Ken Graves Memorial Scholarship**-established in honor of Ken Graves of the MSU Class of '77. Awarded to freshmen who plan to major in engineering with special emphasis on female and minority students.
- A. S. Guerard Memorial Scholarship**—donated by Mrs. A. S. Guerard; restricted for juniors or seniors in any engineering major.
- Joseph M. Harvey Scholarship in Engineering**—donated in honor of Joseph M. Harvey. Awarded to a junior or senior majoring in engineering, on the basis of achievement, leadership, and financial need.
- Hearin Foundation Scholarships**—awarded to outstanding entering freshmen each year in any engineering major.
- Hunter W. Henry, Jr. & James E. Henry Scholarship**-awarded to two exceptionally qualified freshmen students. One student majoring in Chemical and one student majoring in Mechanical Engineering will be selected each year. Preference given to Mississippi students, children of MSU alumni or those in need.
- John P. Hosmer Engineering Scholarship**-established to provide scholarships for Mississippi Resident students who are enrolled in the College of Engineering and who have demonstrated outstanding academic achievement.
- Wallace J. Hosmer Engineering Scholarship**- awarded to qualified freshmen engineering students residing in Alabama and Mississippi.
- Otey & Edna Jackson Scholarship**-established to provide scholarships to juniors and seniors based on academic record.
- Kerr McGee Scholarship**- awarded to qualified engineering students.
- Sam H. & Sandra K. Lee Scholarship**- awarded to a qualified freshman engineering student. Preferably a student from Forest or Pearl River County.
- Donald E. Meiners/Entergy Scholarship** - established to provide scholarships to qualified engineering students.
- Mississippi Manufacturer's Association Scholarship**- awarded to qualified Mississippi residents students majoring in Civil Engineering.
- Mississippi Power Company Scholarship**-established to award scholarships to qualified engineering students.
- B.C. and Patricia Moore Scholarship**- guidelines being established.
- Frank T., Sr., and Gaines W. Moore Scholarships**-established by the Moore family in memory of Frank T. Moore, Sr. '33, and in honor of Gaines W. Moore, '34. Awarded to a junior or senior in any engineering major on the basis of academic record with need also being a consideration.
- MOTIVA Scholarship** - established to provide scholarships to students enrolled in Chemical, Electrical, or Mechanical Engineering, or Computer Science on the basis of academic or other achievements and at the same time have a recognizable need for financial assistance.
- Alton C. & Roberta R. Morris Scholarship** - established to enable students with great financial need to be able to pursue careers in engineering.
- Frank E. Munn Memorial Scholarship**—donated by Mrs. Frank E. Munn. Awarded to a junior or senior in Civil, Electrical, or Mechanical Engineering on the basis of merit and financial need.
- H. P. Neal Memorial Scholarship**-awarded to qualified engineering students.
- J. Robert Newsom Memorial**—donated by Newsom Brothers of Columbia, Mississippi. The recipient must be a Mississippi resident.
- John E. Pearson Memorial Engineering Scholarship**—donated by John E. Pearson; restricted to a senior.
- William Peterhansen, Jr. Memorial Scholarship**- awarded to qualified engineering students
- Petroleum Engineering Alumni Scholarship**-established through the efforts of Petroleum Engineering alumni for full-time engineering students having demonstrated academic achievement, leadership ability and financial need. Disabled students will be given special consideration.
- Crymes Pittman Scholarship** - awarded to a qualified freshman engineering student. Preferably to a student from Smith County.
- Rockwell International Scholarship**-established as a Scholarship award to female or minority students enrolled in Aerospace, Electrical or Mechanical Engineering.
- Ralph E. Powe Scholarship** - established in 1997 to provide assistance to a full-time entering freshman enrolling in the College of Engineering. (Preference is given to students in Mechanical Engineering).
- William Douglass Rooker Memorial Scholarship**-established as a Scholarship award to full-time engineering students at Mississippi State who have completed the freshman year. Candidates must be from Mississippi with first preference given to students from Pike County.
- Bobby Shackouls-Burlington Resources Scholarship** - awarded to qualified engineering students.
- Clyde Q. & Katherine B. Sheely Scholarship**-established to award assistance to students who have completed 30 credit hours. Available in alternate years to a student in engineering.
- Shields Memorial Scholarships**-awarded to qualified engineering students.
- Simrall Scholarship in Engineering**—donated by The Mississippi Engineering Society and the MSU Engineering Alumni Association in honor of Dean Emeritus Harry C. Simrall.

**SECME University Scholarship (Southeastern Consortium for Minorities in Engineering)**-established to provide Scholarship assistance to a Mississippi student who meets SECME eligibility requirements and is admitted to the College of Engineering.

**ST Environmental Services Scholarship**-established to award Scholarship assistance to qualified Engineering students.

**Jim Henry Swain Scholarship**- awarded to a qualified Civil Engineering student.

**TVA Engineering Scholarship** - established in 1999 to provide assistance to full-time engineering students. Candidates must be from a TVA serviced region.

**Amelia Halbert Thaxton Scholarship**-awarded to Mississippi residents, with preference given to juniors and seniors.

**3M Scholarship**-established to provide scholarships for students studying in the fields of Chemical, Electrical, or Mechanical Engineering and who are U.S. citizens in the North Alabama area.

**Ziff Energy/Hank Kelly Scholarship**- awarded to qualified students majoring in Mechanical or Electrical Engineering with an interest in pursuing a career in the energy field.

#### **AEROSPACE ENGINEERING**

Inquiries should be directed to the Department of Aerospace Engineering, Box A, Mississippi State, MS 39762. Scholarships include:

**Charles B. Cliett Scholarship**-awarded to freshman based on academic record.

**Charles P. Downer, Jr. Memorial Scholars**-awarded to juniors and seniors, based on academic record.

**Henry W. Shurlds, Jr. Scholarship**-awarded to juniors on the basis of merit and financial need.

#### **AGRICULTURAL and BIOLOGICAL ENGINEERING**

Inquiries should be directed to the Department of Agricultural and Biological Engineering, Box 9632, Mississippi State, MS 39762. Scholarships include:

**ASAE Scholarship (McWhorter/Williamson)**

**T. H. Scott Scholarship**

**Marvin Ross Smith Scholarship**

#### **CHEMICAL ENGINEERING**

Inquiries should be directed to the Department of Chemical Engineering, Swalm Building, Box 9595, Mississippi State, MS 39762-9595. Scholarships have been made available through the generosity of the following individuals:

**Dave C. Swalm**

**David and Jean Bradford**

**David Purvis**

**E. Clarence Oden** (for entering freshmen only)

In addition, one or more outstanding senior students may be awarded the **George R. Lightsey Memorial Scholarship** for outstanding professional leadership and academic achievement.

All Scholarship awards are made by the faculty of the Dave C. Swalm School Chemical Engineering in accordance with existing policies of the university.

#### **CIVIL ENGINEERING**

Inquiries should be directed to the Department of Civil Engineering, Box 9546, Mississippi State, MS 39762. Scholarship awards are restricted to junior and senior level students and are based on class standing. All students are considered for scholarships at the conclusion of the academic year in May. Students must have been enrolled in the department for one year to be considered for an award. Scholarships include:

**Michael J. Baker, Jr. Scholarship**

**Carolyn and G. B. "Red" Beard Scholarship**

**Josephine Kellis Bounds Memorial Scholarship**

**Webb M. Bruce Scholarship**

**Chevron Oil Company Scholarship**

**Choctaw, Inc. Scholarship**

**Cook, Coggin, Engineers, Inc. Scholarship**

**John W. Duff Endowed Scholarship**

**Helen Joe Memorial Scholarship**

**William M Parker Memorial Scholarship**

**C. R. Patton Scholarship**

**Howard K. Williford Memorial Scholarship**

**Robert H. Wood Scholarship**

**Worthington Construction Company Scholarships**

#### **COMPUTER SCIENCE**

Inquiries should be directed to the Department of Computer Science, Box 9637, Mississippi State, MS 39762. Scholarships include:

**Cellular South Scholarship** - awarded to qualified Mississippi residents.

#### **ELECTRICAL and COMPUTER ENGINEERING**

Inquiries should be directed to the Department of Electrical and Computer Engineering, Box 9571, Mississippi State, MS 39762. Scholarships include:

**Electric Power Association Scholarship**

**Ollie Hughes Graduate Fellowship**

**Lucius Lamar Patterson Memorial Scholarship in Electrical Engineering**

**E. Grady Perkins Memorial Scholarship**

**Robert Luckett Shuler Scholarship**

**A.T. Snider Memorial Scholarship**



**INDUSTRIAL ENGINEERING**

Inquiries should be directed to the Department of Industrial Engineering, Box 9542, Mississippi State, MS 39762. Scholarships include:

**Durward B. Dunn, Jr. Scholarship**

**George Crow Dunn Scholarship**

**L.E. Gibens Family Scholarship**

**MSU I.E. Alumni Eastman Chemical Company Scholarship**

**Jesse H. Oswalt Industrial Engineering Scholarship**

**MECHANICAL ENGINEERING**

Inquiries should be directed to the Department of Mechanical Engineering, Drawer ME, Mississippi State, MS 39762. Scholarships include:

**Litton Industries Scholarship**

**Richard Eron Green Memorial Scholarship**—awarded to juniors or seniors

**Holmes-Neal Mechanical Engineering Scholarship**

**COLLEGE OF FOREST RESOURCES SCHOLARSHIPS and MEMORIALS**

(Inquiries should be directed to the College of Forest Resources, Box 9680, Mississippi State, MS 39762, unless otherwise noted.)

**The Polly Anderson Newsom Memorial Scholarship** - established in memory of Polly Anderson Newsom by her children, Fred, Polly, Petty and David, her husband Roy, and many friends. Students from Amite and Pike County are given priority. Priority is also given to students in the Wildlife and Fisheries Department. It is awarded based on scholastic achievement, character, leadership and financial need.

**The Dale Arner Endowed Scholarship in the Department of Wildlife and Fisheries** - funded by the interest from gifts donated by friends, former students, and professional associates in honor of Dr. Dale Arner - professor emeritus. This scholarship supports exceptional wildlife and fisheries students who demonstrate high academic achievement, are active in student wildlife and fisheries' organizations, research, and have demonstrated leadership ability in the field.

**Larry B. Aycock Memorial Endowed Scholarship** - established in memory of Larry B. Aycock II, this scholarship is awarded to a full-time junior or senior enrolled in forestry. Selection is based on academic achievement, character, and leadership ability.

**The Robert Lee "Mr. Bob" Carlton Memorial Endowed Scholarship** - established by the family of Robert Lee "Mr. Bob" Carlton. An annual award is given to a Wildlife or Fisheries Science major in their junior or senior year of study and is based on academic achievement and promise of an outstanding career in the wildlife and fisheries profession.

**Columbia Forest Products Annual Scholarship** - funded by Columbia Forest Products of Trumann, Arkansas. This scholarship is awarded to students in the Forest Products major with interest in Lumber, composite or related areas. Offers students an opportunity to perform a summer internship. Candidates should have a GPA of 2.8 or higher.

**The Durward B. and Georgene Dunn Endowed Scholarship**—established in memory of their grandchild, Georgene Elizabeth Grand, the scholarships are awarded on an annual basis.

**The Forest Products Endowment Fund Scholarship**—supported by income from invested funds donated by friends and supporters of the Forest Products Laboratory; awarded to a student in Wood Science and Technology on the basis of academic record and merit.

**The Forestry Suppliers, Inc. Endowed Scholarship**—originally established as an annual scholarship by the company founder, James W. (Jim) Craig in the early 1960's, this award is given to students who show promise of success in the profession of forestry. Candidates must be full-time students in their junior or senior year of study, enrolled in the forestry major, and demonstrate academic achievement.

**The Garden Clubs of Mississippi Scholarship**—donated by The Garden Clubs of Mississippi to a student majoring in forestry. Selection is based on both need and academic achievement.

**The Ernest A. Gluesing Memorial Award**—established in memory of Ernest A. Gluesing, Associate Professor of Wildlife, it is awarded to the most outstanding graduate student in Wildlife and Fisheries each year.

**The Larry E. Homan Scholarship in Forest Resources**—Funded by the interest from an endowment established by the Larry E. Homan family, this Scholarship is awarded on the basis of academic merit and leadership potential. Preference is given to Fisheries students.

**The Warren and Elsie Hood Endowed Scholarship in Forest Resources** - funded by interest from a gift donated by Warren and Elsie Hood. Candidates must be full-time students at Mississippi State University enrolled in a major of the College of Forest Resources who have demonstrated academic achievement, leadership ability and financial need.

**The International Paper Company Annual Minority Scholarship**-donated annually by International Paper Company; awarded to an African-American or a Native American majoring in forestry.

**The Colonel Kenneth (K.D.) Johnson and Catherine B. Johnson Endowed Scholarship Fund** - funded by the interest from a gift donated by Colonel Kenneth (K.D.) Johnson and Catherine B. Johnson, this scholarship is awarded to a student in the Forestry Major who has demonstrated acceptable academic achievement and shows promise of an outstanding career in the forestry area. Applicants with demonstrated financial need will be considered over other qualified students even though their grade point average might be below other applicants.

**The Susan Jordan Endowed Scholarship** - established by family and friends in memory of Susan Jordan for her dedication and long service to the students in the College of Forest Resources. This scholarship is awarded to students enrolled in the forestry major who demonstrate involvement and leadership in student organizations within the College of Forest Resources, while maintaining a high level of academic achievement.

**The Howard McDuffie Memorial Endowed Scholarship** - Established in memory of Howard McDuffie. The scholarship is awarded to a student majoring in Wildlife and Fisheries Science. Candidates must be in good standing. Preference is given to students who choose electives in water quality, resources, and flood control.

**The Bynum L. Meeks Endowed Scholarship** - established through generous contributions from family, friends, and professional associates in memory of Bynum L. Meeks. Candidates must be full-time students enrolled in the College of Forest Resources in the Forest Management Option within the Department of Forestry or one of the following options with the Department of Forest Products: Wood Industry Management or Wood Material Science. Eligible students must have completed summer, can and be in their junior or senior year of study, and be a resident from one of the following counties: Adams, Amite, Claiborne, Copiah, Franklin, Hinds, Jefferson, Lawrence, Lincoln, Madison, Pike, Walthall, Warren and Wilkinson.

**The Mississippi Lumber Manufacturers' Association (MLMA) John L. Mabry Memorial Annual Scholarships**- Mississippi Lumber Manufacturer's Association (MLMA) currently provides two annual scholarships in the College of Forest Resources in memory of John L. Mabry. These scholarships are awarded to one forestry management major and one Forest Products major with an emphasis on the forest products industry each year. Candidates must be full-time students, have demonstrated academic achievement, be of good moral character and have demonstrated leadership ability and financial need.

**Mississippi Wildlife Federation Scholarship**—awarded to a graduate student in the Department of Wildlife and Fisheries on the basis of academic achievement, research proposal, and financial need.

**The David M. Moehring Memorial Award**—established in memory of David M. Moehring, Professor of Forestry, it is awarded to the most outstanding graduate student in Forestry each year.

**The Davis and Ann Mortensen Endowed Scholarship in Forest Resources** - established in December of 1999 by a generous contribution from Mr. and Mrs. Davis K. Mortensen. Candidates must have a composite ACT score of 26, have records of academic achievement and demonstrated leadership skills.

**David H. Nabi Memorial Award**—established in memory of David Nabi, who was killed while a graduate student in Wildlife. The award honors graduate students in the Department of Wildlife and Fisheries for outstanding achievement and contributions to their fellow graduate students as exemplified by Mr. Nabi.

**The Kevin Nolan Summer Field Session (Summer Camp) Annual Scholarship** - established by Kevin Nolan to assist a full-time student majoring in Forestry who must attend summer camp. Candidates must have demonstrated academic achievement, show promise in an outstanding career in Forestry, and must have demonstrated financial need.

**The Anne and Terry Ozier Endowed Scholarship** - established by contributions from the Mississippi Forestry Association and the Ozier Family. This scholarship, in memory of Anne Ozier and in honor of Dr. Terry Ozier, was established to recognize their commitment to forestry in the state of Mississippi. Candidates must be full-time students in their sophomore year, enrolled in the Department of Forestry, and demonstrate academic achievement, leadership ability, and financial need.

**Roy L. Pugh Memorial Scholarship**-supported by income from an endowment from Mr. and Mrs. Eugene R. Andrzejewski. Awarded to a student majoring in forestry.

**The Three Rivers Chapter of Quail Unlimited Annual Scholarship** - established to support students who through education hope to advance and protect the tradition and sport of quail hunting. Candidates must be enrolled in the Wildlife and Fisheries major in any year of study and resident of Leflore, Carol, Grenada, Montgomery, or Holmes County. In the event a qualified student in the wildlife and fisheries major is not available, a forestry major with a concentration in wildlife management may be considered.

**The Ham Sanders Forestry Scholarship**—sponsored by Mrs. Ham Sanders in honor of her husband. The award is based on need, character, and academic achievement or any combination of these. Preference is given to students studying Wood Science and Technology.

**The Mark A. Schmol Memorial Endowed Scholarship** - established by family and friends in memory of Mark A. Schmol, for his passion for wildlife and dedication to the wildlife profession, who died in a drowning accident while an undergraduate student in Wildlife and Fisheries. Candidates must be an undergraduate student in wildlife science/management who show promise of an outstanding career in the wildlife profession.

**Leo W. Seal Memorial Forestry Scholarship**—In memory of Leo W. Seal, the Hancock Bank annually donates a Scholarship for a student residing in Hancock, Harrison, Pearl River, or Stone County, Mississippi. The award is to a sophomore, junior or senior in the College of Forest Resources. Academic achievement, financial need, and personal character are factors considered in the selecting of recipients.

**Sharp Academic Scholarship** - established through an endowment by the Kate Sharp family of Tishomingo County. Entering freshman with a composite ACT score of at least 27 or a minimum combined SAT score of 1310 are invited to apply for these scholarships. Awarded are up to \$12,000 for a four-year program of study. The scholarships are limited to students enrolled in the College of Forest Resources.

**The Ike Shoemaker Memorial Scholarship**-funded by funds from family and friends of Mr. Hilton H. "Ike" Shoemaker. Awarded to a junior or senior student enrolled in the Forestry major with wildlife management option or in the Fisheries option.

**The South Mississippi Forest Products Annual Scholarship** - established by the company owners, Skip and Julie McCollough of Hattiesburg, Mississippi. Candidates for the South Mississippi Forest Products Annual Scholarship must be in their junior or senior year, demonstrate acceptable academic achievement and show promise of an outstanding career in Forestry, Wildlife and Fisheries, or Forest Products. Applicants who demonstrate financial need will be considered over other qualified students though their grade point average may be below other applicants.

**The John W. Starr, Sr. and Caroline B. Starr Memorial Scholarship in Forest Management**—established in memory of John W. and Caroline B. Starr, the scholarships are awarded to junior and senior students enrolled in Forest Management on the basis of merit and academic record.

**The STIHL Inc./John Paul Pritchett, Sr. Memorial Annual Scholarship Fund** -established by STIHL, Inc. in memory of John Paul Pritchett, Sr., who died in the line of duty. Candidates must be a full-time student enrolled in the College of Forest Resources with a major in the Department of Forestry, Forest Products, or Wildlife and Fisheries. Also must have demonstrated academic achievement, leadership abilities, and be of good moral character.

**The Tenneco Packaging Company Forestry Scholarship**—supported by income from a gift of stock from the Tenneco Packaging Company; awarded to a student enrolled in Forestry. Selection criteria include academic achievements and personal characteristics which indicate promise of success in the profession of forestry.

**J. S. Therrell Scholarship in Forest Resources**—supported by income from funds donated by J. S. Therrell; awarded to a student in the College of Forest Resources on the basis of potential for leadership and academic excellence, with consideration given to potential to reflect favorably on the University in his or her professional career.

**The Frank Troskey Annual Scholarship in Forestry** - established by Philip A. Troskey and his wife Elizabeth in honor of his father Frank Troskey. Candidates must be full-time students in their sophomore, junior, or senior year, be enrolled in the forestry major, and demonstrate acceptable academic achievement, and show promise of an outstanding career in forestry.

**The John M. Vanderford Memorial Assistantships**—These assistantships are supported by the income from a fund established by friends and associates of John Vanderford, who was a forestry graduate. Selection is based on academic achievements and longer term professional interests. The primary aim of the assistantships is to help forestry students who wish to develop skills in the communications/public relations aspects of forestry.

**Hugo Wahlstab Scholarship in College of Forest Resources** - established in memory of Hugo Wahlstab. Candidates must be full-time students enrolled in the College of Forest Resources in the Department of Forestry. Applicants must have demonstrated academic achievement and leadership ability, and must be of good moral character.

**The Washington County Conservation League Scholarship**—funded by the Washington County Conservation League of Greenville, Mississippi; awarded to an outstanding junior or senior majoring in forestry with a wildlife minor or in fishery management. Selection criteria include academic standing, student citizenship, professional promise, and financial need.

**Wildlife and Fisheries Scholarship** - awarded to undergraduates or graduate student who is majoring in Wildlife Management, Marine Resources Management, and/or related degrees in the College of Forest Resources.

**Wood Component Manufacturers Association Annual Scholarship** - established with a gift donated by the Wood Component Manufacturers Association to support deserving students in the College of Forest Resources with strong preference given to a student who plans a career in secondary wood products manufacturing management. Candidates must be a full-time student in good standing with a GPA of 2.8 or better.

## COLLEGE OF VETERINARY MEDICINE SCHOLARSHIPS and MEMORIALS

**The American Kennel Club Scholarships** - Each College of Veterinary Medicine in the U.S. can submit up to four (4) candidate applications. Criteria for awarding scholarships can include: financial need; academic achievement and potential; and perceived or demonstrated interests in canine biology and/or purebred dogs.

**The Arkansas Veterinary Medical Foundation Scholarship** - An applicant must be an Arkansas high school graduate; be a current freshman, sophomore, or junior student at MSU CVM; and have an overall 2.5 GPA or better (based on a 4.0 scale).

**The Charles E. and Viola G. Bardsley Scholarship** - Five scholarships are awarded, one to each of the following: The entering class, the freshman class, the sophomore class, the junior class, and the senior class. Selection of incoming freshmen will be based upon Applicant Admissions profile score compiled during admissions process. Selection of freshmen, sophomore, and junior students will be based on GPA for the current year, faculty/peer evaluations, class leadership and level of professionalism. A graduating senior will be selected based upon overall GPA for four years of professional program.

**The Bedenbaugh Scholarship in Veterinary Medicine** - An applicant must meet the following criteria: be a student in good standing at the MSU-CVM; have a minimum GPA of 3.00/4.00 in his/her current program; and have exhibited leadership skills during his/her tenure as veterinary medical (or pre-vet, where applicable) student. Financial need may be used as selection criterion.

**The James D. and Kay B. Bryan Scholarship** - An applicant must have declared a career interest in food animal medicine; have met and maintained above-average scholarly requirements set forth by the MSU-CVM; be a current freshman, sophomore, or junior student or a senior student enrolled in the Production Medicine Masters program (PPM program students given preference); and be of good moral character and have demonstrated leadership ability and financial need. As many as five scholarships may be awarded each year.

**The Morgan Freeman Endowment for Veterinary Medicine** - An applicant must be a freshman, sophomore, or junior student at MSU-CVM; demonstrate effective leadership abilities, integrity, motivation, and potential as a representative of the veterinary medical profession. The scholarship will be awarded annually. As fund distribution permits, more than one scholarship may be awarded.

**The Greenville Kennel Club Scholarship** - An applicant must be a resident of the Arkansas/Mississippi Delta; have met and maintained above-average scholarly requirements set forth by the MSU-CVM; be of good moral character and have demonstrated leadership ability and financial need. First priority is given to current freshmen, sophomore, junior, and senior students. Second priority is given to entering freshmen.

**The Allan H. Hart/IDEXX Scholarship** - An applicant must be a current junior student at the MSU-CVM; and have a strong understanding of clinical pathology and its practical application to clinical classes.

**The Clarice C. Jackson Memorial Scholarship** - An applicant must be a freshman, sophomore, or junior student at MSU-CVM; have demonstrated interest in small animal medicine; and have met and maintained above-average scholarly requirements set forth by the MSU-CVM. The Dr. Betsy Lipscomb Scholarship is awarded annually. As fund distribution permits, more than one scholarship may be awarded.

**The Dr. Betsy Lipscomb Scholarship in Veterinary Medicine** - An applicant must be in their junior year of study; demonstrate interest in small animal medicine; demonstrate academic achievement, meet and maintain above-average scholarly requirements set forth by CVM. As fund distribution permits, more than one scholarship may be awarded.

**The Mississippi State Kennel Club Scholarship** - An applicant must be enrolled in the MSU-CVM; and be in the freshman year of study. Priority is given to residents of Hinds, Madison, and Rankin counties of Mississippi.

**The Mississippi State University College of Veterinary Medicine Alumni Society Scholarship** - An applicant must be a student in good standing at MSU-CVM; be of good moral character and have demonstrated leadership ability; and have demonstrated financial need.

**MSU College of Veterinary Medicine Minority Assistance** - An applicant must be an incoming freshman or current freshman, sophomore, or junior student enrolled at MSU CVM; be an African-American resident of Mississippi; have a 2.50/4.00 GPA and meet or exceed all established standards for entering the academic year for which the student is applying.

**The Mississippi Veterinary Medical Association Scholarship** - An applicant must have completed the fall semester of his/her sophomore year (current junior); have five years of residence in Mississippi, be of good moral character and have demonstrated leadership ability, and financial need.

**The Thomas C. Randolph, Jr. Memorial Scholarship** - An applicant must be an upcoming senior (current junior) student at MSU-CVM; and have demonstrated a career interest in food animal medicine during his/her first three years.

**The Salsbury Scholarships** - These scholarships are awarded on a funds-availability basis to senior students of the MSU-CVM to assist in completion of their fourth year of studies.

**The Greta Somerville Endowed Scholarship in Veterinary Medicine** - An applicant must be a student in good standing at the MSU-CVM; and have demonstrated leadership ability and financial need. This scholarship is awarded annually. As fund distribution permits, more than one scholarship may be awarded. During the selection process, consideration is to be given to need and academic merit.

**The Hugh M. Arant, Sr. Memorial Scholarship in Veterinary Medicine** - An applicant must be a member in good standing of the sophomore class of the MSU-CVM; have demonstrated exceptional overall academic performance, and make significant contributions to his/her class as well as to the MSU-CVM; and be of good moral character and have demonstrated leadership ability and financial need.

**The Clio Annual Scholarship in Veterinary Medicine** - An applicant must be a current junior at the MSU-CVM; have demonstrated interest in small animal medicine and have shown genuine compassion and empathy for clients and patients during small animal rotations; have demonstrated acceptable academic achievement and have shown promise for an outstanding career in veterinary medicine. Financial need may be considered over and above academic qualifications.

**The Professional Liability Insurance Trust SAVMA Scholarship** - An applicant must be a current senior in good standing at MSU-CVM; be a member of SCAVMA (Student Chapter of the American Veterinary Medical Association); and have demonstrated exemplary client communication skills.

**The American Veterinary Medical Foundation Scholarship** - An applicant must be a current freshman, sophomore, or junior student at MSU-CVM; and have demonstrated significant financial need. Awarded as fund distribution permits. Funds are distributed cyclically among U.S. Colleges of Veterinary Medicine.

**The Ralston Purina Scholarship** - An applicant must be a current sophomore or junior student at the MSU-CVM; have met and maintained above-average scholarly requirements set forth by the MSU-CVM; have demonstrated leadership ability; be involved in extracurricular activities; and have demonstrated financial need.

**The Schering Plough Animal Health Scholarship** - An applicant must be a current freshman, sophomore or junior student at MSU-CVM; have demonstrated academic achievement by realizing at least a 3.00 GPA; be of good moral character and have demonstrated leadership ability; be involved in student professional organizations; and have demonstrated financial need.

## OFFICE of DISTINGUISHED SCHOLARSHIPS

Mississippi State University provides the Office of Distinguished Scholarships to identify and assist well-qualified undergraduate students in becoming candidates for national and international awards such as the Rhodes Scholarship, the Goldwater Scholarship, the Marshall Scholarship, and the Truman Scholarship. The unit also assists students who are nominated for recognition in programs such as those sponsored by *USA TODAY* and Rotary International.

Prospective students are urged to investigate the web sites of the major scholarship programs. Information on the opportunities:

Jack H. White, Director  
 Director, Office of Distinguished Scholarships  
 45 Magruder Street  
 Mississippi State, MS 39762  
 e-mail: jwhite@honors.msstate.edu  
 telephone: 662-325-2522  
 web: www.msstate.edu/dept/des

## EMERGENCY SHORT-TERM LOANS

**Bass Memorial Loan Fund**—donated by Mr. and Mrs. I. H. Bass in memory of Isaac Houston Bass, Jr. and Levi Gaston Bass, their son and his brother.

**Maurice D. and Pearl S. Blumberg Memorial Student Loan Fund**—donated by Maurice D. Blumberg for loans to deserving students.

**William Max Coggin Memorial Loan Fund**—donated by Mrs. Grady Coggin in memory of her son, William M. Coggin.

**Jill Sadler Memorial Loan Fund**—donated by friends and family in memory of Jill Sadler. The recipient must be a junior or senior in Home Economics. Loans must be repaid one year from date of graduation.

**Sidney Tonner and Dorothy Osborn Memorial Loan Fund**—donated to provide loans to deserving students.

**John Sharp Williams Memorial Loan Fund**—donated by Mississippi Chemical Corporation for loans to deserving students.

**L. C. Winterton Memorial Loan Fund**—donated by Mr. Lester C. Winterton for low interest loans to deserving students.

## GRADUATE ASSISTANTSHIPS

Research, teaching and service assistantships are available on an annual or nine-month basis. Individual academic and nonacademic departments/units are responsible for award decisions, the duties and responsibilities, stipend rate and work schedule. The minimum stipend rate is \$600.00 per month.

Application for an assistantship appointment must be submitted to the college, department, school, support unit, etc. where a position is available. A generic "Application for Graduate Assistantship" is provided on the Web by Office of Graduate Studies, location: <http://www.msstate.edu/dept/grad/forms.htm>; however, any work area has the option to require application submission on a form specific to that area. Departments are responsible for establishment of application deadlines and review procedures pertinent to the assigned work area.

Individuals interested in any other form of financial aid (grant, loan, or scholarship) should contact the Department of Student Financial Aid and Scholarships, Box AB, Mississippi State, MS 39762-5507. That office also has information available on the MSU Web - address: <http://www.msstate.edu/dept/sfa/>.

A Graduate Assistant Handbook containing more detail about requirements and procedures applicable to these awards is available in the Office of Graduate Studies, 116 Allen Hall. This handbook is available electronically, by accessing the following Web address: <http://www.msstate.edu/dept/grad/publications.htm>.

**Required Course Load.** Each student employed as a graduate assistant must maintain a full-time student status during enrollment periods throughout the employment duration.

**Academic Performance.** Students must demonstrate satisfactory progress in their specified program to retain an assistantship.

**Matriculation Fee.** When enrollment periods parallel an assistantship employment period a graduate assistant will receive a student account credit of approximately 71% of assessed tuition and required fees plus 100% of assessed nonresident tuition fee. Student account charges in excess of the applied tuition exemption are the student's personal responsibility.

**Graduate Research Assistantships.** Graduate Research Assistants (GRAs) are employed by many of the University's academic, research, and administrative offices. This is an excellent opportunity to learn new techniques and methods as well as expand knowledge by association with the research-oriented responsibilities.

**Graduate Service Assistantships.** Students who are employed to aid faculty and staff members with administration and operations within an office are classified as Graduate Service Assistants (GSAs). Many academic and nonacademic units offer these assignments with duties and work time variances depending on office needs.

**Graduate Teaching Assistantships.** Most academic areas have budgeted for teaching assistantships. Graduate Teaching Assistants (GTAs) normally serve in an instructional capacity and are selected on the basis of a student's past teaching experience or academic promise. All first time teaching assistants are required to attend the Teaching Assistant Workshop that is held annually prior to the beginning of the fall semester.

### Teaching Assistant Workshop

All first time graduate teaching assistants are required to attend the Teaching Assistant Workshop which is held annually prior to the beginning of the Fall semester. The Workshop consists of two (2) segments.

Segment one - Required of all teaching assistants. This segment focuses on the role of a classroom instructor. Presentations may include topics such as the role of a GTA, syllabus development, effective teaching techniques, understanding sexual harassment, the impact of cultural diversity, ethics in the classroom, assessing academic achievement, and academic support services.

Segment two - Required of all teaching assistants whose native language is not English. This segment focuses on communication skills, cultural adjustment, and University orientation and concludes with an English language proficiency test. The test consists of a five-minute student presentation to a panel of three judges. After each presentation, the judges engage the student in a dialog related to some aspect of their presentation in order to evaluate the students' language proficiency.

Students who are not successful in the language proficiency examination are invited to attend a special semester long class at no cost to them. This class further assists the students with their language deficiencies as diagnosed in the fall workshop. At the end of the semester, the students are again tested on their language skills.

Failure to complete segment one will render a student, international or domestic, ineligible for a teaching assistantship. Students whose native language is not English must satisfactorily complete both segments to be eligible for classroom instruction.

**Minority Assistance Program.** Some special funds usually exist to assist individuals who represent groups traditionally under-represented in a field of graduate study. An individual who represents such a group may make inquiry to the Office of Graduate Studies, Box G, Mississippi State, MS 39762-5507.

## X. CONDUCT and DISCIPLINE; TRAFFIC and PARKING

### A. STUDENT CONDUCT

Two objectives of higher education are to develop self-reliance and to form desirable and acceptable habits of conduct among students.

Instead of designing numerous regulations to cover in detail matters of student conduct, Mississippi State University recognizes students as adults who are expected to obey the law, rules and regulations of the University, to take personal responsibility for their conduct, to respect the rights of others, and to have regard for the preservation of State and University property as well as the private property of others. Mississippi State University will not police the personal lives of students on or off campus or invade their privacy by spying or intrusive searches; however, students whose conduct threatens to cause disorder, public disturbances, danger to themselves and others, or property damage will be disciplined.

A listing of acts of misconduct which are unacceptable and may require disciplinary action is provided online at <http://www.msstate.edu/web/security.htm>; together with a detailed explanation of disciplinary processes for students in the University. Those apprehended and proven guilty of violating the law or rules and regulations of the University may receive a maximum penalty of expulsion from the University.

### B. PARKING, VEHICLE REGISTRATION, AND TRAFFIC REGULATIONS

Possession and use of motor vehicles on the campus are controlled under regulations approved by the Board of Trustees of Institutions of Higher Learning. These regulations require that any person who regularly or occasionally operates or parks a motor vehicle on the campus and streets of the University must register the vehicle at the beginning of each school year or as soon as it is brought on the campus, and must display on it, as instructed, a numbered identifying decal or hangtag.

Parking areas are designated and clearly marked for staff, residence-hall students, and day students.

The rules governing parking and traffic on campus may be viewed at [www.msstate.edu/dept/audit/91307.html](http://www.msstate.edu/dept/audit/91307.html). For questions regarding parking, please contact the Parking Services unit at 662.325.2665 or 662.325.2668.

## XI. ASSOCIATED AGENCIES

### THE MISSISSIPPI STATE UNIVERSITY ALUMNI ASSOCIATION INC.

The Mississippi State University Alumni Association was founded June 17, 1885. The mission of the Alumni Association is to generate support for Mississippi State University through the development and implementation of programs, activities and events for its alumni and friends.

The alumni of Mississippi State University have their permanent headquarters in the Hunter Henry Center on the campus. Housed there are over 125,000 address records of graduates and former students. In addition, the Alumni Center is used frequently by faculty, students and alumni for meetings, conferences and other events.

Some of the services rendered by the Association annually in the promotion of the University are: maintaining and updating biographic and demographic information of all alumni; mailing over 350,000 pieces of mail, including the *Alumnus* magazine and *Mississippi State University Connection*; planning and organizing numerous alumni meetings and special events; supporting various fund-raising programs for the University through the MSU Foundation's Fund for Excellence Program; providing support for alumni chapter scholarship programs; supporting the University's appropriation requests from the Mississippi Legislature; assisting in the recruitment of prospective students to Mississippi State University, including the Scholars' Recognition Program; sponsoring the Alumni Delegates, student leaders preparing to be alumni leaders; partnering with the University's Career Center to assist students and alumni with employment opportunities; supporting excellence in teaching, research, and service through the annual Faculty Recognition Program; and assisting in the annual Staff Appreciation Day.

Sixty-five alumni chapters are chartered in Mississippi and 21 in other states. In addition to a 44-member National Board of Directors and five standing committees, most chapters have officers, committees, and boards of directors. This totals more than 1,800 volunteer workers on all levels and provides for wide participation of former students and friends in the promotion of their alma mater each year.

For more information, visit the Association's Home Page at [www.MSUBulldogs.msstate.edu](http://www.MSUBulldogs.msstate.edu).

### THE MISSISSIPPI STATE UNIVERSITY FOUNDATION, INC.

Since 1962, the Mississippi State University Foundation, Inc., has served as a nonprofit corporation offering a comprehensive program of giving opportunities for alumni and friends of Mississippi State University. The foundation's purpose is fourfold:

- to provide the University a way to recruit and draw on the expertise of a network of dedicated volunteers who can assist in soliciting gifts from alumni and friends;
- to provide a mechanism to keep private gifts clearly separate from public funds and to provide flexibility in the use of private funds;
- to assist the University in the investment of endowed funds (the foundation has greater flexibility than the public university to seek the most favorable return on investments); and
- to ensure that funds designated for a particular purpose are used in the manner intended by the donors, and to ensure that funds unrestricted by the donors as to their use are appropriately distributed.

Since the incorporation of the foundation, alumni and friends have invested more than \$275 million in Mississippi State through the foundation. In the past five years, more than \$130 million of this money has been contributed. Also during the same period, the endowment has grown from \$79 million to over \$160 million.

## XII. NONDISCRIMINATION

Mississippi State University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, or veteran status.

The Affirmative Action/Equal Opportunity Officer, 221 McArthur Hall, Box 6199, Mississippi State, MS 39762, office telephone number 325-2493, has been designated as the responsible employee to coordinate efforts to carry out responsibilities and make investigation of complaints relating to discrimination. This is in conformity with Title IX of the Education Amendments of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, Section 402 of the Vietnam Era Veterans Readjustment Assistance Act of 1974, and the Americans with Disabilities Act of 1990.

### POLICY GUIDELINES and STATEMENT

It is the policy of Mississippi State University to take affirmative action:

- (1) To recruit, hire, and promote persons in all job classifications without regard to race, color, religion, sex (except where sex is a *bona fide* occupational qualification), national origin, age, disability (except where such disability condition renders the person incapable of doing the job or poses a threat to the health and safety of others), or veteran status;
- (2) To base decisions on employment so as to further the principle of equal employment;
- (3) To ensure that promotion decisions are in accord with principles of equal employment opportunity by imposing only valid requirements for promotional opportunities;
- (4) To ensure that all human resources actions, such as compensation, benefits, transfers, layoffs, returns from layoff, university sponsored training, education, tuition assistance, and social and recreational programs, will be administered without regard to race, color, religion, sex, national origin, age, disability, or veteran status;
- (5) To employ and advance in employment qualified disabled veterans, veterans of the Vietnam era, and other eligible veterans at all levels of employment. This includes, but is not limited to hiring, upgrading, demotion or promotion, transfer, recruitment, layoff or termination, rates of pay, or other forms of compensation; and
- (6) To monitor affirmative action efforts daily and to audit and report results quarterly.

The institution takes affirmative action to admit, teach, grade, discipline, provide financial aid to, graduate, admit to graduate school, award graduate assistantships and fellowships to, and assist toward placement, all students, without regard to race, color, religion, sex, national origin, age, disability, or veteran status.

This policy is actuated and implemented through the authority of its Chief Executive Officer, derived from the Board of Trustees of State Institutions of Higher Learning and delegated to the Affirmative Action Equal Opportunity Officer.

## II. THE COLLEGES and SCHOOLS

### COLLEGE of AGRICULTURE and LIFE SCIENCES

VANCE WATSON, Interim Dean  
 LYNN L. REINSCHMIEDT, Associate Dean  
 Office: 105 Lloyd-Ricks Building  
 Telephone: (662) 325-2110  
 Fax: 325-8580

Mailing Address: Box 9760, Mississippi State, MS 39762  
 E-mail: dean@cals.msstate.edu

#### GENERAL INFORMATION

The College of Agriculture and Life Sciences (CALS) at Mississippi State University (MSU) is one of the leading colleges of agriculture, life sciences, and human ecology in the southeast. Student enrollment, degree offerings, and student placement have increased over the past nine years.

As a land-grant institution, Mississippi State University's College of Agriculture and Life Sciences offers excellent academic programs related to basic life sciences, environmental issues, agricultural production, food and fiber processing, agribusiness, agricultural information science, and the conservative and sustainable use of natural resources. With the recent establishment of MSU's Life Sciences and Biotechnology Institute, the College will continue to enhance the study of the life sciences, including biotechnological applications that will have a tremendous impact on education, agriculture production, food, fibers, human and animal health, the environment and biobased industrial products.

Students may select from 17 undergraduate curricula in the College of Agriculture and Life Sciences. Each degree program will prepare students for career opportunities in the multi-billion dollar agricultural and life sciences' industry. These programs will also prepare students for graduate and/or professional school study. The College of Agriculture and Life Sciences has degree programs that prepare students for medicine, veterinary medicine, and law. The College currently has an enrollment of 1255 undergraduate and 217 graduate students.

**Organization.** The College of Agriculture and Life Sciences is one of five major units of the Division of Agriculture, Forestry and Veterinary Medicine. The others are the Mississippi Agricultural and Forestry Experiment Station (MAFES), Mississippi State University Extension Service (MSU-ES), the College of Forest Resources, and the College of Veterinary Medicine (CVM).

The College of Agriculture and Life Sciences offers undergraduate curricula leading to the Bachelor of Science degree, with the exception of Landscape Architecture which leads to the Bachelor of Landscape Architecture degree. All departments within the College of Agriculture and Life Sciences offer graduate courses leading to the Master of Science, Master of Agriculture, Master of Agribusiness Management degree, or Master of Landscape Architecture degree.

**Faculty and Facilities.** The level of education of the faculty of the College of Agriculture and Life Sciences, as measured by advanced degrees and by the diversity of the institutions from which these degrees were earned, is exceptionally high. The teaching faculty include resident staff of the MAFES and MAFES-ES, which offer valuable opportunities for students on the undergraduate and graduate (see MSU Graduate Bulletin) levels. The sharing of faculty and facilities between the College of Agriculture and Life Sciences, MAFES and MSU-ES keeps the instructional program current and meaningful to the students.

#### POLICIES

The minimum requirements for graduation with a Bachelor of Science degree in the College of Agriculture and Life Sciences in any of the four-year curricula are 128 semester hours with an average grade of C (2.0 GPA on a 4.0 scale). Some curricula require more than this minimum.

Agriculture and Life Sciences majors are encouraged to take courses on the Mississippi State University campus when possible. If the desired courses are not offered, or if special circumstances exist, students may receive permission from the Dean, upon recommendation from the Department, to take courses through Independent Study.

The College of Agriculture and Life Sciences requires all entering freshman and transfer students to own or lease a personal computer. This College-wide requirement is a proactive measure to insure that students will develop the needed computer skills necessary for success in agriculture and life sciences professions. The CALS will identify the minimum com-

puter specifications, which is important to the overall university computing system, the University's Information Technology Services, and classroom and laboratory computer accommodations. This information will be posted on the College of Agriculture and Life Sciences's web site (<http://www.cals.msstate.edu>) by July 1 of each year. Additional information on computer specifications, software, purchasing and/or lease information (if available), and additional department requirements, will also be included on the CALS web site.

The College of Agriculture and Life Sciences currently offers 16 Bachelor of Science degree programs and 35 option areas. Students may choose from the following degree programs and options:

- \*Agricultural Engineering Technology and Business
  - Agricultural Systems
  - Natural Resource and Environmental Management
  - Gin Management and Technology
  - Land Surveying
  - Precision Agriculture/Ag Systems
- \*Biological Engineering (College of Engineering)
  - Pre-Dentistry
  - Pre-Medical
  - Pre-Veterinary Medicine
- \*Agribusiness
- \*Agricultural Economics
- \*Agricultural Information Science
  - Teaching Option (5<sup>th</sup> year)
- \*Agricultural Science
- \*Animal and Dairy Sciences
  - Science Option
  - Pre-Veterinary Medicine
  - Production/Business
- \*Biochemistry and Molecular Biology
  - Pre-Dentistry
  - Pre-Medical
  - Pre-Veterinary Medicine
- \*Agricultural Pest Management
- \*Food Science and Technology
  - Food Safety Pre-Veterinary Medicine
  - Processing/Business
  - Science
- \*Human Sciences
  - Apparel, Textiles and Merchandising
  - Foods, Nutrition and Dietetics
  - Gerontology Concentration
  - Human Development and Family Studies
  - Interior Design
- \*Landscape Architecture
- \*Landscape Contracting and Management
- \*Agronomy
  - Crop Science
  - General Agronomy
  - Golf and Sports Turf Management
  - Seed Science
  - Seed Technology
  - Soil Conservation
  - Soil Science
- \*Horticulture
  - Floriculture and Ornamental Horticulture
  - Retail Floristry Management
- \*Poultry Science
  - Business
  - Management
  - Manufacturing
  - Pre-Veterinary Medicine

\* denotes degree programs with available options

**OPTION in INTERNATIONAL AGRICULTURE**

The elective in International Agriculture is available to students majoring in any curriculum in the College of Agriculture and Life Sciences. This elective is intended to prepare students for possible careers in agricultural production or marketing on an international scale.

Students interested in this elective will take the following in addition to requirements for their majors. The specific courses included will be determined by the department involved and the student's interest, but will include the following minimums.

<i>SUBJECT MATTER</i>	<i>REQUIRED SEMESTER HOURS</i>
Production Agriculture (outside student's major)	6-9
Agricultural Economics	6-9
World Geography/Political Science and/or Sociology	3-6
Foreign Language	6-9

### **FIVE-YEAR, TWO-DEGREE CURRICULA in AGRICULTURE and BUSINESS and in AGRICULTURE and LIBERAL ARTS**

Five-year, two-degree curricula leading to Bachelor of Science degrees in both Agriculture and Business and Agriculture and Liberal Arts are available. Such curricula may be designed with a major in any field of agriculture or human sciences combined with a major in any field of business or liberal arts. These programs must meet the minimum requirements of 128 semester hours with a C average or better for a degree in Agriculture including (1) a minimum of 54 semester hours with a C average or better in business approved by the College of Business and Industry, or (2) a minimum of 48 hours with a C average or better in the liberal arts field approved by the College of Arts and Sciences.

Students desiring to follow a five-year, two-degree curriculum will develop a detailed program by consultation with advisors in the College of Agriculture and Life Sciences and the College of Business and Industry or the College of Arts and Sciences. The two degrees are conferred simultaneously at the end of the fifth year. Students should declare their intentions of pursuing the two-degree program as early as possible, generally not later than the end of the sophomore year.

### **SHORT COURSES in AGRICULTURE and LIFE SCIENCES**

Short courses from three days' to two weeks' duration are given when the need arises. The nature of the educational program and its length are determined by the needs of the particular groups served. Information regarding short-course programs may be secured from the dean or the head of the department offering the course.

### **PRE-VETERINARY MEDICINE**

Pre-Veterinary students enrolled in the College of Agriculture and Life Sciences (CALs) must select a major (Bachelor of Science degree program) that includes required Pre-Veterinary courses. The College of Agriculture and Life Sciences does not offer a degree in Pre-Veterinary Medicine; therefore, students should select a major that includes Pre-Veterinary courses. These requirements are included in the following degree programs: Animal and Dairy Sciences, Poultry Science, Food Science and Technology, Biochemistry and Molecular Biology, Microbiology and Biological Sciences (the latter two degree programs are located in the College of Arts and Sciences). Each of the four degree programs within the College of Agriculture and Life Sciences (CALs) allows the student to complete the necessary requirements for entry to the College of Veterinary Medicine and a Bachelor of Science simultaneously. To receive a Bachelor of Science degree, each student must meet the curriculum requirements set forth by the respective department provided through the Pre-Veterinary Medicine Option (Example: See Animal and Dairy Sciences). Upon the successful completion of the undergraduate degree program through the junior year and the pre-veterinary medicine course requirements, a student may apply to the College of Veterinary (CVM). Upon the successful completion of the first year of CVM courses (approximately 28-32 hrs.), a student may apply these hours toward the bachelor's degree. This course work can serve as the senior year of the undergraduate curriculum. This "three plus one" program is offered by the College of Agriculture and Life Sciences for Pre-veterinary students.

Address inquiries concerning the Pre-Veterinary medicine options available in the CALs to desired degree program and advisor listed below:

For general information or undecided on degree option:

College of Agriculture and Life Sciences  
Office of the Dean  
Mr. J. Byron Williams, Pre-Veterinary Advisor  
105 Lloyd Ricks Building  
Box 9760  
Mississippi State, MS 39762  
Phone: (662) 325-2110

For specific degree information:

Animal and Dairy Sciences Pre-Veterinary Medicine Program  
Department of Animal and Dairy Sciences  
Dr. Thomas Althen, Pre-Veterinary Advisor  
4025 Wise Center  
Box 9815  
Mississippi State, MS 39762  
Phone: 662-325-2802

Biochemistry and Molecular Biology Pre-Veterinary Medicine Program  
Department of Biochemistry and Molecular Biology  
Dr. John Boyle, Pre-Veterinary Advisor  
402 Dorman Hall  
Box 9540  
Mississippi State, MS 39762  
Phone: 662-325-2640

Food Science Pre-Veterinary Medicine Program  
Department of Food Science and Technology  
Dr. Charles White, Pre-Veterinary Advisor  
105 Herzer Dairy Science Building  
Box 9805  
Mississippi State, MS 39762  
Phone: 662-325-3200

Poultry Science Pre-Veterinary Medicine Program  
Department of Poultry Science  
Dr. Tim Chamblee, Pre-Veterinary Advisor  
114 Hill Poultry Science Building  
Box 9665  
Mississippi State, MS 39762  
Phone: 662-325-3416

### **Pre-Veterinary Requirements for entry into The College of Veterinary Medicine**

Major Advisors:

Thomas Althen, Animal and Dairy Science  
John Boyle, Biochemistry and Molecular Biology  
Tim Chamblee, Poultry Science  
Charles White, Food Science and Technology

BCH 3613 Elem. Biochemistry  
BIO 1504 Prin. Of Zoology  
BIO 2103 Cell Biology  
BIO 3304 General Microbiology  
CH 1211 Invest in Chemistry

CH 1213 Fund of Chemistry  
CH 1221 Invest in Chemistry  
CH 1223 Fund of Chemistry  
CH 4511 Organic Chemistry Lab  
CH 4513 Organic Chemistry

CO 1003 Fund of Public Speaking  
Elective (3 hrs)  
EN 1103 English Composition  
EN 1113 English Composition  
Fine Arts Elective  
Humanities (6 hrs)  
MA 1313 College Algebra  
Mathematics Requirement (3 hrs)  
NTR 4115 Nutrition  
PH 1113 General Physics  
PO 3103 Genetics  
Social/Behavioral Science (6 hrs)

**Total Credit Hours: 70**

Electives will be chosen from requirements toward the student's alternate major. Those students with an alternate major in agriculture will choose electives from the following courses.

ADS 1114 Animal Science  
AEC 2713 Introduction to Agricultural Economics  
PSS 3303 Soils  
PSS 3301 Soils Lab  
PSS 1313 Plant Science  
BIO 1203 Plant Biology  
GA 1111 Survey of Agriculture  
BIO 4103 Experimental Genetics  
ADS 4613 Physiology of Reproduction  
BIO 4403 Immunology  
PO 4824 Poultry Physiology  
VS 2014 Anatomy & Physiology of Farm Animals\*  
VS 1012 Intro to Veterinary Medical Careers

\* Strongly recommended.

**Department of AGRICULTURAL ECONOMICS (AEC)**

Major Advisor: Assistant Professor Wes Wolfe  
Office: 302 Lloyd-Ricks

Agriculture and related businesses create more employment than does any other industry. The agribusiness industry accounts for nearly one-fifth of the U.S. gross national product and employs close to one-fourth of the U.S. labor force. To formulate successful business policies, farm managers and agribusiness firm managers must fully comprehend the nature and influence of economic forces on prices, costs, product demand and production plans. The entire business complex surrounding the food and fiber sector must be managed in a manner consistent with reasonable returns to the factors of production and respond to consumer demands. Two majors, Agricultural Economics and Agribusiness, are offered to provide an understanding of economic forces and business management principles as well as general knowledge of technical agriculture and related sciences. Students completing either curriculum would also be prepared to pursue additional training at the graduate level.

Students who plan to attend a community college before transferring to Mississippi State are strongly encouraged to contact the Department's major advisor regarding their proposed community college course schedule and transfer requirements. **The Agricultural Economics department discourages, but will accept six technical course credits through the Spring 2004 semester. Beginning with the Fall 2004 semester the department will not accept technical course credits.**

**Students in both majors are required to earn a "C" or better in all required (non-elective) agricultural economics (AEC), economics (EC), English (EN), and mathematics (MA) courses.**

**AGRICULTURAL ECONOMICS**

The **Agricultural Economics (AEC)** major provides basic training in farm management, production economics, marketing and demand. Emphasis is on production agriculture and the economics of resource development and use. Individuals who plan to farm or seek employment with firms and agencies directly involved with production agriculture would be well prepared for such positions under this curriculum. In light of the emphasis on production agriculture and the flexibility offered by the AEC curriculum, first-year students are encouraged to contact the departmental undergraduate coordinator to discuss some specific options of current interest that are available through careful management and selection of elective courses (agricultural consulting licenses, GIS/GPS/Precision Agriculture skills, etc).

**University Core**

English Composition (6 hours)  
EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I  
  
EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II  
  
Public Speaking (3 hours)  
CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication  
  
Mathematics (6-9 hours)\*  
MA 1313 College Algebra **or** higher level Mathematics  
MA 1613 Calculus for Business and Life Sciences I **or**  
an equivalent or higher level calculus  
ST 2113 Statistics for Behavioral Sciences **or**  
an equivalent statistics course taught as a  
mathematics or statistics course  
  
Science (6-9 hours)  
CH 1043 General Chemistry **or**  
a higher level chemistry course  
BIO 1123 Animal Biology **or** BIO 1203 Plant Biology  
  
Humanities (6 hours)  
PHI 3013 Business Ethics **or** another introductory  
Philosophy (PHI) course  
3 hours select humanities from the University CORE  
  
Fine Arts (3 hours)  
Select from University CORE  
  
Social/Behavioral Sciences (6 hours)  
AEC 2713 Introduction to Ag Econ **or** EC 2123 Principles  
of Microeconomics  
EC 2113 Principles of Macroeconomics  
  
**Major Core\*\*\***  
12 hours Ag Econ/COBI Electives\*++  
15 hours CALS Electives\*+++  
AEC 4523 Farm Financial Management  
AEC 4343 Advanced Farm Management

GA 1111 Survey of Agriculture or 1-3 hour elective  
6 hours Restricted CALS Electives\*\*\*\*  
3 hours Communications Elective\*+  
5 hours Free Electives  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
AEC 2611 Seminar I  
AEC 3113 Introduction to Quantitative Economics  
AEC 3133 Introduction to Agribusiness Management  
AEC 3213 International Trade  
AEC 3233 Introduction to Environmental Economics  
AEC 3413 Principles of Agricultural Marketing  
AEC 4133 Agricultural Market Price Analysis  
AEC 4413 Public Problems of Agriculture  
EC 3113 Intermediate Macroeconomics  
EC 3123 Intermediate Microeconomics  
  
Writing Requirement (3 hours)  
AIS 3203 Introduction to Technical Writing  
  
Computer Literacy (3 hours)  
AEC 1223 Computing for Ag and Life Sciences

**Total hours needed for major: 128**

\* Students should contact an advisor to verify the equivalency of a course.

\*\*\* Courses are listed in alphanumeric order below. Students should contact an advisor, refer to the appropriate departmental curriculum sheet or refer to the course description section of this bulletin to determine the prerequisites for each course.

\*\*\*\* Restricted CALS electives include: ABE 1863 Engineering Technology in Agriculture; ADS 1114 Animal Science; AIS 3803 Leadership Development in Ag & Life Sciences; PSS 1313 Plant Science; PSS 3303 Soils (Prereq. CH 1043, preferably CH 1053 also); EPP 3113 Intro Plant Pathology (Prereq: BIO 1203); EPP 4154 General Entomology; FST 1103 Intro to Food Science; HS 4193 Social & Cultural Aspects of Food; PO 3313 Commercial Poultry Prod; PSS 3133 Intro Weed Science (Prereq: BIO 1203 and CH 2213), and WF 1213 Intro to Wildlife & Fish Conservation.

\*+ May be satisfied by a communications course (CO) or a higher-level writing course (MGT 3213 Organizational Comm I, etc.)

\*++ Choose any course from the Department of Ag Econ. Choose any 3000 level or above courses from the College of B&I. Up to 2 courses in any foreign language can count towards COBI electives. A foreign language course cannot simultaneously satisfy both COBI and humanities elective requirements.

\*+++ Choose any course from the College of Ag & Life Sciences (excluding AEC courses). Up to 2 natural science courses (2000 level or above) can count toward free CALS electives. A foreign language course cannot simultaneously satisfy both COBI and humanities elective requirements.



**AGRIBUSINESS**

The **Agribusiness (AGB)** major provides training in business including accounting, management, marketing, finance and economics, along with training in the agricultural sciences. A student who plans to work in an off-farm agricultural profession can greatly enhance his/her training for a particular specialty by carefully choosing the courses in his/her area of interest. The program of study is designed to give the student considerable flexibility in his/her chosen field of study and to prepare him or her for career positions with all types of firms involved in getting food and fiber to the consumer.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics (6-9 hours)\*

MA 1313 College Algebra **or** higher level Mathematics  
 MA 1613 Calculus for Business and Life Sciences I **or**  
 an equivalent or higher level calculus  
 ST 2113 Statistics for Behavioral Sciences **or**  
 an equivalent statistics course taught as a  
 mathematics or statistics course

Science (6-9 hours)

CH 1043 General Chemistry **or**  
 a higher level chemistry course  
 BIO 1123 Animal Biology **or** BIO 1203 Plant Biology

Humanities (6 hours)

PHI 3013 Business Ethics **or** another introductory  
 Philosophy (PHI) course  
 3 hours select humanities from the University CORE

Fine Arts (3 hours)

Select from University CORE

Social/Behavioral Sciences (6 hours)

AEC 2713 Introduction to Ag Econ **or** EC 2123 Principles  
 of Microeconomics  
 EC 2113 Principles of Macroeconomics

**Major Core\*\*\*\***

9 hours Ag Econ Electives\*\*\*\*  
 3 hours Ag Econ/COBI Electives\*\* + +  
 6 hours COBI Electives\*\* +  
 FIN 3123 Financial Management  
 MGT 3113 Principles of Management  
 MKT 3013 Principles of Marketing  
 AEC 4113 Legal Environment of Business

BL 2413 Legal Environment of Business  
 GA 1111 Survey of Agriculture or 1-3 hour elective  
 6 hours Restricted CALS Electives\*\*  
 3 hours Communications Elective\*\*\*  
 5 hours Free Electives  
 ACC 2013 Principles of Financial Accounting  
 ACC 2023 Principles of Managerial Accounting  
 AEC 2611 Seminar I  
 AEC 3113 Introduction to Quantitative Economics  
 AEC 3133 Introduction to Agribusiness Management  
 AEC 3213 International Trade  
 AEC 3233 Introduction to Environmental Economics  
 AEC 3413 Principles of Agricultural Marketing  
 AEC 4133 Agricultural Market Price Analysis  
 AEC 4413 Public Problems of Agriculture  
 EC 3113 Intermediate Macroeconomics  
 EC 3123 Intermediate Microeconomics

Writing Requirement (3 hours)

AIS 3203 Introduction to Technical Writing

Computer Literacy (3 hours)

AEC 1223 Computing for Ag and Life Sciences

**Total hours needed for major: 128**

\* Students should contact an advisor to verify the equivalency of a course.

\*\* Restricted CALS electives include: ABE 1863 Engineering Technology in Agriculture; ADS 1114 Animal Science; AIS 3803 Leadership Development in Ag & Life Sciences; PSS 1313 Plant Science; PSS 3303 Soils (Prereq. CH 1043, preferably CH 1053 also); EPP 3113 Intro Plant Pathology (Prereq. BIO 1203); EPP 4154 General Entomology; FST 1103 Intro to Food Science; HS 4193 Social & Cultural Aspects of Food; PO 3313 Commercial Poultry Prod; PSS 3133 Intro Weed Science (Prereq. BIO 1203 and CH 2213); and WF 1213 Intro to Wildlife & Fish Conservation.

\*\*\* May be satisfied by a communications course (CO) or a higher-level writing course (MGT 3213 Organizational Comm I, etc.)

\*\*\*\* Courses are listed in alphanumeric order below. Students should contact an advisor, refer to the appropriate departmental curriculum sheet or refer to the course description section of this bulletin to determine the prerequisites for each course.

\*\* + Choose any 3000 level or above courses from the College of Business and Industry. Up to 2 courses in any foreign language can count towards COBI electives. A foreign language course cannot simultaneously satisfy both COBI and humanities elective requirements.

\*\* + + Choose any course from the Department of Ag Econ. Choose any 3000 level or above courses from the College of B&I. Up to 2 courses in any foreign language can count towards COBI electives. A foreign language course cannot simultaneously satisfy both COBI and humanities elective requirements.

## Department of AGRICULTURAL INFORMATION SCIENCE and EDUCATION(AIS)

**Agricultural Information Science Curriculum**

Major Advisor: Assistant Professor Kirk Swartzel  
Office: 200 Ballew Hall

Agriculture is an applied science with many disciplines. Agricultural Information Science is the science of assisting others to learn how to access, analyze, apply, and amend information to solve problems in agriculture. The curriculum is designed to prepare students to enter professions requiring extensive knowledge and skill in solving agricultural and agriculturally related problems. Students are prepared to meet agriculture industry's needs for individuals who can create, access, disseminate, apply, amend, and integrate information to solve problems in agriculture. Agricultural Information Science graduates may become involved in a variety of occupations in agricultural business and industry, education, production, Extension, public relations and others. A minimum of 128 semester hours is required for this major. Students must complete 13 semester hours of agriscience electives from approved courses in one of the following areas: animal agriculture, plant agriculture, horticulture, agribusiness, natural resources and agriscience.

All students in Agricultural Information Science are required to have their own personal computer. Students should consult with the department for equipment specifications prior to purchasing.

Students desiring to receive certification to teach in secondary agriculture programs will need to complete certification requirements. This can be accomplished by completing the Master of Science Degree in Agricultural and Extension Education, Teacher Certification Option. To enroll in this program, individuals must possess a bachelor's degree in an agriculture area and meet requirements for regular admission to the Master of Science degree program. The minimum G.P.A. Requirement is 2.75, on a 4.0 scale, during the last two years (approximately 60 hours) of undergraduate academic work or a 3.0 on a minimum of 24 hours of graduate level courses. Individuals must apply to teacher education. Individuals must present an ACT score of 21 (SAT equivalent of 860) with no sub-score below 18 or minimum scores on the Pre-professional Skills test (PPST) to meet teacher certification standards in Mississippi. The minimum scores are 170 on Reading, 172 on Writing, and 169 on Mathematics; OR, on the Computer Based Test (CBT), 316 on Reading, 318 on Writing, and 314 on Mathematics. Applicants to teacher education must complete the "Verification of Work Experience with Children and Youth" and provide two letters of recommendation.

Exit requirements include a 3.0 G.P.A., mastery on an oral comprehensive examination administered by the Graduate Committee and submission of the required score on the Praxis - Principles of Learning and Teaching (PLT) to Mississippi State University College of Education and to the Mississippi Department of Education to obtain licensure.

**AGRICULTURE INFORMATION SCIENCE****University Core**

- English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I
- EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II
- Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication
- Mathematics (6 to 9 hours)  
 MA 1313 College Algebra  
 MA 1323 Trigonometry **or**  
 ST 2113 Stats for the Behavioral Science **or**  
 ST 3113 Intro to Statistical Inference
- Science (6 to 9 hours)  
 BIO1123 Animal Biology  
 CH 1043 General Chemistry  
 CH 1053 General Chemistry
- Humanities (6 hours)  
 PHI 1113 Intro to Logic **or**  
 PHI 1123 Intro to Ethics  
 HI elective Select from University CORE
- Fine Arts (3 hours)  
 Select from University CORE
- Social Sciences (6 hours)  
 AEC 2713 Intro to Ag Econ  
 PSY 1013 General Psychology

**Major Core**

- AIS 2613 Intro to Info and Dec Science in Agrisci  
 AIS 3324 Mgt of Ag Learning Systems  
 AIS 3503 Internship  
 AIS 3803 Leadership Development  
 AIS 4103 Programs in AIS  
 AIS 4203 App of Computer Info Systems  
 AIS 4303 Info Tech Ag Learning Systems  
 ABE 3513 GPS/GIS  
 ADS 1114 Animal Science  
 Approved Ag Elective - 3 hours (see advisor)  
 BIO 1203 Plant Biology  
 CH 1051 Exp Chemistry Lab  
 CH 2501 Elem Organic Chemistry Lab  
 CH 2503 Elem Organic Chemistry  
 EPP 2213 Intro to Insects  
 FST 1103 Intro to Food Science **or**  
 FST 1113 Food and the Consumer  
 GA 1111 Survey of Agriculture  
 Management Elective, Restricted (see advisor)  
 PO 3103 Genetics  
 PSS 1313 Plant Science  
 PSS 2423 Plant Materials I  
 PSS 3133 Weed Science  
 PSS 3301 Soils Lab  
 PSS 3303 Soils  
 SO 3033 Rural Sociology  
 Agriscience Electives - 13 hours (see advisor)  
 Free Electives - 4 hours
- Writing Requirement (3 hours)  
 AIS 3203 Intro to Technical Writing in Agricomm
- Computer Literacy (3 hours)  
 AIS 4203 App of Computer Info Systems

**Total hours needed for major: 128****AGRICULTURAL SCIENCE****Agricultural Science Curriculum**

Major Advisor: Assistant Professor Kirk Swartzel  
 Office: 200 Ballew Hall

The Agricultural Science degree prepares individuals for a variety of agricultural related careers. Many agricultural businesses and organizations are seeking graduates who have a diversified knowledge of agriculture and life sciences, which includes production agriculture, business, leadership and management. Many graduates become involved in agriculture business and industry, production agriculture operations, international agriculture development or pursue advanced study in areas such as nutrition and agricultural education.

Agricultural Science allows students to develop a high concentration of science and specialized agricultural study. Through the Agricultural Science degree program, a student can pursue a bachelor of science in agriculture and develop specialization areas that will serve his/her individual needs and interests. For the degree requirements, students must complete 128 hours, which includes 33 hours of science and 58 hours of agricultural science. Thirty hours will be agricultural science electives, which must be taken from two academic departments within the College of Agriculture and Life Sciences. The student must select agricultural science electives that are closely related and compliment each other. By selecting electives from two academic departments, a student can develop two specialization areas, such as agricultural pest management and agronomy or agricultural economics and animal science. A minimum of 16 of the agricultural science electives must be 4000 level courses or above, and a maximum of 4 hours may be selected from 1000 level courses.

**University Core**

- English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I
- EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II
- Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication
- Mathematics (6 to 9 hours)  
 MA 1313 College Algebra  
 3 hours Select from University CORE
- Science (6 to 9 hours)  
 BIO 1203 Plant Biology  
 BIO 1123 Animal Biology  
 CH 1043 General Chemistry
- Humanities (6 hours)  
 HI elective Select from University CORE  
 3 hours Select from University CORE
- Fine Arts (3 hours)  
 Select from University CORE
- Social Science (6 hours)  
 AEC 2713 Intro to Ag Econ  
 PS 1113 American Government

**Major Core**

- ABE 1863 Eng Tech Agriculture  
 ADS 1114 Animal Science  
 BIO 1213 Survey of Plant and Fungi Kingdoms  
 CH 1051 Exp Chemistry Lab  
 CH 2501 Elem Organic Chemistry Lab  
 CH 2503 Elem Organic Chemistry  
 EPP 2213 Intro to Insects  
 EPP 3113 Plant Pathology  
 GA 1111 Survey of Agriculture  
 PH ——— Physics elective  
 PO 3103 Genetics  
 PSS 1313 Plant Science  
 PSS 3133 Weed Science  
 PSS 3301 Soils Lab  
 PSS 3303 Soils  
 Agriscience Electives in two CALS depts - 33 hours (see advisor)  
 Free electives - 6 hours
- Writing Requirement (3 hours)  
 AIS 3203 Intro to Technical Writing in Agricomm
- Computer Literacy (3 hours)  
 AIS 4203 App of Computer Info Systems

**Total hours needed for major: 128**

## Department of AGRICULTURAL and BIOLOGICAL ENGINEERING (ABE)

### Agricultural Engineering Technology and Business (AETB)

Major Advisor: Professor Jerome A. Gilbert  
Office: 100 Agricultural and Biological Engineering Building

The AETB program provides an educational opportunity for students interested in applying technical, business, and management skills to problems in agricultural production, processing, commodity related business and finance, and natural resources utilization. A Bachelor of Science degree is offered by the Agricultural and Biological Engineering Department through the College of Agriculture and Life Sciences.

The AETB program provides the agricultural industry with men and women possessing excellent skills in the engineering technologies, as well as a thorough background in business and management. This combination allows the AETB graduate to excel in virtually any business enterprise. The AETB Base Curriculum prepares the graduate for the many diverse opportunities afforded by the industrial and agricultural industries. In addition to the broad background in agricultural technologies and business, students may concentrate on a particular career-path by completing an AETB emphasis option. The AETB Base Curriculum provides five emphasis options including: (1) Aquacultural Systems, (2) Enterprise Management, (3) Gin Management & Technology, (4) Natural Resources & Environment Management, and (5) Precision Agriculture. These emphasis options are achieved by completing 18 hours of specified emphasis electives as approved by an AETB advisor. In addition, a Land Surveying option is supported through a unique AETB curriculum.

The Aquacultural Systems option provides an enhanced background in fishery management, fish disease, and water quality. The Enterprise Management option is designed to provide skills for agricultural and business enterprise management. The curriculum provides a broad background including both animal and plant sciences, agricultural technology, economics, business and management. The Gin Management and Technology option provides graduates with a thorough education in cotton gin management and fiber processing. Courses emphasize technologies that are specific to the fiber processing industry including: hydraulics, pneumatics, industrial controls, seed technologies, biological materials handling, industrial safety and human relations. The Natural Resources and Environmental Management option provides an enhanced background in geology, hydrogeology, resource conservation, and water quality for students pursuing careers that require environmental training. The Gin Management and Land Surveying options include an intern program allowing students to apply educational concepts in real-world settings. The Precision Agriculture option provides courses in remote sensing, GPS, GIS, and surveying to enhance the student's abilities for careers involving spatial technologies.

All new students in AETB are required to have a laptop computer. Students should check with the ABE Department for equipment specifications prior to purchasing. **Transfer credits with a grade of C or higher will be considered toward fulfillment of the degree requirement in the AETB curriculum. A maximum of 7 transfer hours of technical credit can be applied toward degree requirements.**

Employment for AETB graduates includes the following agricultural industries/government agencies: Food/Fiber Production (Farming), Agri-Chemical, Agricultural Lending, Aquaculture, Banking, Cotton Ginning, Seed & Grain Processing, Crop Consulting, Agricultural Equipment Manufacturers and Sales, Farm Management, Land Surveying, and Food Processing.

### Agricultural Engineering Technology & Business (AETB Base Curriculum)

(Emphasis Options include: Aquacultural Systems, Enterprise Management, Gin Management & Technology, Natural Resources & Environmental Management, and Precision Agriculture)

#### University Core

English Composition (6 hours)

- EN 1103 English Comp I **or**
- EN 1163 Accelerated Comp I **or**
- EN 1183 Honors Comp I

- EN 1113 English Comp II **or**
- EN 1173 Accelerated Comp II **or**
- EN 1193 Honors Comp II

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**
- CO 1093 Honors Oral Communication

Mathematics (6 to 9 hours)

- MA 1313 College Algebra
- MA 1323 Trigonometry

Science (6 to 9 hours)

- PH 1113 General Physics
- PH 1123 General Physics
- CH 1043 General Chemistry

Humanities (6 hours)

- 3 hours Elective # 1 (select from University CORE)
- 3 hours Elective # 2 (select from University CORE)

Fine Arts (3 hrs)

- 3 hours Select from University CORE

Social Science (6 hours)

- AEC 2713 Agricultural Economics
- 3 hours Social/Behav Elective (select from University CORE)

#### Major Core

- ABE 1863 Engineering Tech in Ag
- GA 1111 Survey of Ag or GG 1111
- CH 1053 General Chemistry
- CH 1051 Experimental Chemistry
- PSS 1313 Plant Science or BIO 1203
- ABE 2063 Intro to Ag Engr Tech

#### AETB Approved Elective\*\*

- ABE 2873 Land Surveying
- ABE 1073 Agricultural Mechanics
- EG 1143 Graphic Communications
- ADS 1114 Animal Science or BIO 1504
- Approved Emphasis Elective #1 (3 hrs)
- Approved Emphasis Elective #2 (3 hrs)
- ACC 2013 Prin of Financial Accounting
- AEC 3133 Ag Business Management
- Approved Emphasis Elective #3 (3 hrs)
- Finance/Financial Course\*\*\* (3 hrs)
- ABE 3513 GPS.GIS
- ACC 2023 Principles of Accounting II
- PSS 3303 Soils
- PSS 3301 Soils Lab
- Approved Emphasis Elective # 4 (3 hrs)
- ABE 4473 Elec Applications
- ABE 4961 Seminar
- Approved Emphasis Elective # 5 (3 hrs)
- ABE 4263 Soil and Water Mgt
- ABE 4383 Building Construction
- BL 2413 Legal Environment of Business
- MGT 3513 Intro Human Resources Mgt
- Approved Emphasis Elective #6 (3 hrs)

Writing Requirement (3 hours)

- ALS 3203 Intro to Tech Writing

Computer Literacy (3 hours)\*

#### Total hours needed for major: 128

\* Strongly suggest AIS 2613 Intro to Decision Science. Students may also take AEC 1223 Comp Appl for Agric and Life Sci **or** AIS 4203 Applic of Computer Tech in Ag Info Systems. The AETB academic advisor will evaluate transfer computer courses for credit.

\*\* ABE 2173 Internal Combustion Engines or ABE 4163 Machinery Management for Agro-Ecosystems

\*\*\* INS 3413 Intro. Personal Fin. Planning; FIN 3003 Personal Money Mgt. **or** FIN 3113 Financial Systems

### Land Surveying Option

Individuals can become registered as a Land Surveyor in Mississippi by either (a) seven years combined surveying experience and testing or (b) academic training, three years of surveying experience (supervised by a registered land surveyor) and testing. The state board for Professional Engineers and Land Surveyors requires that an individual complete 62 hrs. of specific course work in order to meet the academic requirements for registration. These 62 hrs. include 9 hrs. of Surveying, 9 hrs. of Mathematics including Calculus I, 8 hrs. of Physics, 3 hrs. of Graphics, 6 hrs. of Computer Applications, 9 hrs. of English Composition/Writing and 18 hrs. of recommended electives. The following courses are needed to become a registered Land Surveyor in Mississippi and obtain a Bachelor of Science degree in Agricultural Engineering Technology and Business. In order to become a registered Land Surveyor in the state of Mississippi through academic training (see "b" above), one must: (1) complete the required course work (62 hrs.), (2) pass the Land Surveyor Intern examination (administered by the Mississippi Board of Professional Engineers and Land Surveyors), (3) successfully complete a three year internship, and (4) pass the Land Surveyor examination (administered by the Mississippi Board of Professional Engineers and Land Surveyors). Requirements for registration in other states can vary. The following sequence of courses allows the student to take the Land Surveyor Intern examination after completion of the Junior year. Employment opportunities for registered land surveyors in Mississippi include self-employment, an extensive number of land surveying or engineering firms, as well as local, state, and federal government agencies.

#### Land Surveying Curriculum

##### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics

MA 1313 College Algebra  
MA 1323 Trigonometry

Science

PH 1113 General Physics  
PH 1123 General Physics  
CH 1043 General Chemistry

Humanities (6 hours)

3 hours Elective #1 (Select from University CORE)  
3 hours Elective #2 (Select from University CORE)

Fine Arts

3 hours Fine Arts Elective (Select from University CORE)

Social Sciences (6 hours)

AEC 2713 Agricultural Economics  
3 hours Social/ Behav Elective (Select from University CORE)

##### Major Core

ABE 2873 Land Surveying  
CE 2214 Surveying  
CH 1053 General Chemistry  
CH 1051 Experimental Chemistry  
Computer Applications Course #1\*

ABE 2063 Intro to Ag Engr Tech  
CE 4233 Control Survey  
EG 1143 Graphic Communications  
Computer Applications Course #2\*  
MA 1713 Calculus I  
CE 4243 Land Surveys  
Finance/Financial Course\*\*  
ABE 4163 Machinery Mgt  
ACC 2013 Prin of Fin Acc  
PH 1063 Astronomy\*\*\*  
BL 2413 Legal Environ of Business  
Emphasis Elective #1 (3 hrs)  
ABE 1073 Agricultural Mechanics  
ACC 2023 Prin of Accounting II  
ABE 3513 GPS/GIS  
Restricted Elective #1 (2 hrs)\*\*\*\*  
ABE 4961 Seminar  
ABE 4473 Elec Applications  
MGT 3323 Entrepreneurship  
Emphasis Elective #2 (3 hrs)  
Restricted Elective #2 (3 hrs)\*\*\*\*  
ABE 4263 Soil and Water Mgt  
ABE 4383 Building Construction  
MGT 3513 Intro Human Resources Mgt  
Emphasis Elective #3 (3 hours)

Writing Requirement

AIS 3203 Intro to Tech Writing

#### Total hours needed for major: 128

- \* AIS 2613 Intro to Decision Science; AIS 4203 Appl of Computer Tech; CS 1223 Computer Prog with Fortran; AEC 1223 Computer Appl for Agriculturalists & Life Scientists; or TKT 1273 Micro Computers in Ed  
\*\* INS 3413 Intro Personal Fin Planning; FIN 3003 Personal Money Mgt or FIN 3113 Financial Systems  
\*\*\* Not required if a student has 8 hrs of Physics without this course; student still needs 128 hrs to graduate.  
\*\*\*\* GG 1113, GG1123, GG 1153, GG 1163, GG 1111, GG 1121, GG 1151, GG 1161, PSS 3303 or a CAD course.

### AGRICULTURAL PEST MANAGEMENT (APM) An Interdisciplinary Curriculum Including Entomology, Plant Pathology and Weed Science

Major Advisors: Professors Larry E. Trevathan and John D. Byrd, Jr.  
Office: 206 Dorman Hall

Agricultural Pest Management (APM) is an interdisciplinary program of study in Entomology, Plant Pathology and Weed Science jointly administered by the Department of Entomology and Plant Pathology and the Department of Plant and Soil Sciences. The Bachelor of Science and degree in Agricultural Pest Management is offered. Effective management of pest problems in production agriculture requires a broad base of knowledge in the pest disciplines and practical field experience. The undergraduate Agricultural Pest Management major features a strong core of courses in the three pest disciplines (entomology, plant pathology, and weed science); a strong background in agriculture, biological and physical sciences; and practical training through co-op work experiences. Curricula are designed to meet the needs of students who wish to pursue advanced degrees (M.A., M.S., Ph.D.) and of students who wish to terminate their higher education with a baccalaureate degree. A range of restricted and non-restricted electives allows students to personalize their degree program for careers in crop production, agri-business, and/or graduate studies preparation. **A grade of "C" or better is required in all courses with the APM, EPP, PSS, CH, or BIO prefix prior to completion of the degree. No course may be transferred for credit from another college or university in which a grade of "D" was made.** A student may transfer up to nine hours of "T" level technical courses from community colleges as unrestricted lower-level electives. "T" level technical courses may not be transferred for credit on any course listed specifically in the APM curriculum.

Graduates are well prepared for employment with agricultural industries such as chemical, seed or biotechnology companies; state and federal research, extension and regulatory agencies; private agricultural consulting firms; farmer's cooperatives; nurseries, home and garden centers; greenhouse plant production; and corporate farms.

**Co-op Work:** APM students must complete a minimum 12 months or three semesters of co-op work with approved co-op sponsors in industry, private consulting firms/individuals, or governmental agencies. During the three co-op experiences, students typically work in at least two of these three areas. One of the three co-op semesters enrolled by the student must be a non-summer semester. A 2.50 cumulative GPA on all MSU work is required to participate in the APM Co-op Program.

**AGRICULTURAL PEST MANAGEMENT****University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics

MA 1313 College Algebra  
 ST 3113 Introduction to Statistical Inference

Sciences (6 to 9 hours)

See major courses

Humanities (6 hours)

Select from University CORE

Fine Arts (3 hours)

Select from University CORE

Social Sciences

AEC 2713 Intro to Agricultural Economics  
 See University CORE - 3 hours

**Major Core**

APM 4021 Senior Seminar  
 BIO 1203 Plant Biology  
 BIO 1504 Principles of Zoology  
 BIO 4203 Taxonomy of Spermatophytes  
 BIO 4213 General Plant Ecology  
 BIO 4214 General Plant Physiology  
 CH 1051 Experimental Chemistry  
 CH 1043 General Chemistry

CH 1053 General Chemistry  
 CH 2503 Elementary Organic Chemistry  
 CO 2213 Small Group Communication  
 CP 2103 First Work Semester  
 CP 2203 Second Work Semester  
 CP 3303 Third Work Semester  
 EPP 3113 Intro to Plant Pathology  
 EPP 4154 General Entomology  
 EPP 4163 Plant Disease Management  
 EPP 4214 Diseases of Crops  
 EPP 4234 Field Crop Insects  
 EPP 4263 Principles of Insect Pest Management  
 GA 1111 Survey of Agriculture  
 PO 3103 Genetics I  
 PSS 3301 Soils Lab  
 PSS 3303 Soils  
 PSS 3133 Intro to Weed Science  
 PSS 4313 Soil Fertility & Fertilizers  
 PSS 4633 Weed Biology and Ecology  
 PSS 4813 Herbicide Technology  
 9 hours Restricted Electives \*\*\*  
 11 hours Unrestricted Electives (See advisor)

Writing Requirement (3 hours)  
 AIS 3203 Intro to Technical Writing

Computer Literacy (3 hours)  
 AIS 4203 Applications of Computer Tech to AIS and Ed

**(Plus 9 hours co-op experience)****Total hours needed for major: 128**

\*\*\*Restricted electives are courses selected from the following list or approved by APM Steering Committee:  
 AEC 4113 Agribusiness Firm Mgt, AEC 3133 Intro Agribusiness Mgt, AEC 3413 Principles of Ag Mkt, BCH 3613 Elem Biochemistry, BIO 3304 General Micro, EPP 3223 Pest Control, EPP 4543 Toxicology and Insecticide Chem, PSS 4103 Forage and Pasture Crops, PSS 4123 Grain Crops, PSS 4133 Fiber and Oil Seed Crops, PSS 4314 Soil Micro, PSS 4414 Turf Mgt

**Department of ANIMAL and DAIRY SCIENCES (ADS)**

Major Advisor: Professor Tom Althen  
 Office: 4017 Wise Center

**Animal and Dairy Sciences Curriculum**

The Animal and Dairy Sciences Curriculum is designed to give students essential instruction and practical experience in the science and business of animal agriculture. Courses provide training in the areas of breeding, nutrition, growth, reproductive and lactational physiology, marketing, management, evaluation, product processing as related to farm animals. A student may pursue one of the two general emphases options within the curriculum. Students interested in a career in animal production and/or allied industries would choose the Production/Management option. Within the Production/Management option, a student may choose to emphasize one of three species emphases: Meat animal, Dairy or Equine. Students pursuing admission to the College of Veterinary Medicine or the Graduate School would choose the Science option. The Science option allows students to take support courses in the sciences that will better prepare the veterinary and graduate student for the professional programs in the CVM or Graduate School.

The ADS department's Bearden Dairy Research Center and the animal research units in the Leveck Animal Research Center provide the student contact with modern techniques and practical experience to give insight to the many technical problems associated with the Animal and Dairy industries.

**ANIMAL and DAIRY SCIENCES (4 Year Program)****University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics (6 to 9 hours)

Select from University CORE

Science (6 to 9 hours)

Refer to major core

Humanities (6 hours)

Select from University CORE

Fine Arts (3 hours)

Select from University CORE

Social Sciences (6 hours)  
 Select from University CORE

**Major Core****All ADS students must complete the following required courses:**

7-8 hours Inorganic Chemistry  
 4 hours Organic Chemistry  
 3 hours Biochemistry  
 BIO 3304 General Microbiology  
 BIO 1504 Principles of Zoology  
 ADS 1114 Animal Science  
 NTR 4115 Nutrition  
 ADS 4123 Animal Breeding  
 ADS 4613 Physiology of Reproduction  
 ADS 4611 Practices in Phy of Reproduction  
 ADS 4423 Animal Science Internship **or**  
 ADS 3312 Livestock Management Practices  
 ADS 4221 Animal and Dairy Sciences Seminar  
 3 hours Capstone Course

All students must complete the requirements under either Concentration I or II.

**I. Production/Business Management Concentration**

(select species emphasis below)

**Meat Animal Emphasis(25-28 hours)**

ADS 4213	Rations
ADS 4412	Livestock Sales I
PSS 4103	Forage & Pasture Crops
ADS 4323	Beef Cattle Science
ADS 4113	Swine Science
ADS 3213	Perf Analysis of Meat Animals
ADS 4314	Meats Processing
2-4 hours	1 Prod Elective *
2-3 hours	1 Eval Elective **

**Dairy Emphasis(29-31 hours)**

FST 4164	Quality Assurance of Food Products
ADS 4213	Rations
ADS 4412	Livestock Sales I
PSS 4103	Forage & Pasture Crops
ADS 4814	Dairy Farm Management
ADS 3813	Dairy Cattle Appraisal
ADS 4623	Physiology of Lactation
5-6 hours	2 Prod Electives*
2-3 hours	1 Eval Elective**

**Equine Emphasis(28-31 hours)**

ADS 1132	Western Equitation
ADS 2102	Equine Conf & Performance Eval
ADS 3232	Horse Science
ADS 4314	Meats Process <b>or</b>
FST 4164	Quality Assur of Food Prod
ADS 4213	Rations
ADS 4412	Livestock Sales I
PSS 4103	Forage & Pasture Crops
5-7 hours	2 Prod Elec*
2-3 hours	1 Eval Elec**

ADS 4314	Meats Processing <b>or</b>
FST 4164	Quality Assur of Food Prod
PO 3103	Genetics I
BIO 2103	Cell Biology
VS 3014	Anatomy & Physiology
PH 1113	General Physics
ADS 4623	Physiology of Lactation
6-7 hours	2 Prod Elective *
2-3 hours	1 Eval Elective **

Science Electives (6-8 hours)	
BIO 4503	Vertebrate Histology
BIO 4504	Comparative Vertebrate Embryology

3 hours 1 Nutrition/Physiology elective

In addition, for all Prod/Bus Concentrations, students must select:  
Business electives - (Choose 12 hours from the following)\*\*:

AEC 2713	Intro Ag Econ (Preferably taken as a Soc/Behavior Science elective)
AEC 3133	Intro to Agribusiness Management
AEC 3213	International Trade In Ag
AEC 3233	Intro to Environmental Econ
AEC 3413	Prin of Ag Mkt
AEC 4123	Commodity Futures Mkt
ACC 2013	Principles of Financial Accounting
EC 2113	Principles of Macroeconomics
EC 2123	Principles of Microeconomics
MGT 3113	Principles of Marketing

Prerequisites for MABM program:

ACC 2013	Prin of Fin Acc
EC 2113	Prin of Macroeconomics
EC 2123	Prin of Microeconomics
MGT 3113	Prin of Mgt
3-12 hours	Free electives

**Total hours: 128**

- \* Production Electives: ADS 3232 Horse Science; ADS 4113 Swine Science; ADS 4222 Sheep Science; ADS 4323 Beef Cattle Science; ADS 4814 Dairy Farm Mgt;
- \*\* Evaluation Electives: ADS 2102 Equine Conformation, ADS 2122 Adv Equine Eval, ADS 3142 Meats Judging I, ADS 3213 Perf Anal of Meat Animals, ADS 3813 Dairy Cattle Appraisal, ADS 4132 Meats Judging II, ADS 4212 Livestock Eval, ADS 4232 Adv Livestock Eval, ADS 4812 Dairy Cattle Judging, FST 2112 Food Products Eval.
- \*\*\* These courses also count towards a Minor in Agribusiness.

**II. Science Concentration**

BIO 4514	Animal Physiology
BIO 4613	General Biochemistry
BIO 4413	Immunology
8-14 hours	Free electives to make 128 hours

**Total hours: 128**

- \* Production Electives: ADS 3232 Horse Science; ADS 4113 Swine Science; ADS 4222 Sheep Science; ADS 4323 Beef Cattle Science; ADS 4814 Dairy Farm Mgt;
- \*\* Evaluation Electives: ADS 2102 Equine Conformation, ADS 2122 Adv Equine Eval, ADS 3142 Meats Judging I, ADS 3213 Perf Anal of Meat Animals, ADS 3813 Dairy Cattle Appraisal, ADS 4132 Meats Judging II, ADS 4212 Livestock Eval, ADS 4232 Adv Livestock Eval, ADS 4812 Dairy Cattle Judging, FST 2112 Food Products Eval.

**Course requirements for Pre-Veterinary students (3 + 1 program) to obtain a B.S. degree in Animal and Dairy Sciences**

Because (1) the entrance requirements for the College of Veterinary Medicine satisfy a portion of the course requirements for the Animal and Dairy Sciences curriculum (2) a number of students are enrolled in Animal and Dairy Sciences while satisfying their pre-veterinary requirements and (3) an Animal and Dairy Sciences degree will be especially helpful to a practicing veterinarian, the following requirements for those electing to apply for a B.S. degree in Animal and Dairy Sciences after successfully completing the first year of Veterinary Medicine are listed.

University CORE.....	39 hours
Dept Core (eliminate Capstone & Seminar).....	41-42 hours
Science Option - excluding Science and Free Elective.....	28-30 hours

To qualify for the B.S. degree in ADS, a student in the 3+1 program must complete the 3 years of above listed undergraduate course work (**105-108 hours**) and also successfully complete the first year of the Veterinary Medicine curriculum.

**Department of BIOCHEMISTRY and MOLECULAR BIOLOGY (BCH)**

Major Advisor: Professor John A. Boyle  
Office: 402 Dorman

Biochemistry and molecular biology are disciplines involved at the cutting edge of a revolution in biology. Molecular methods and the use of genetic engineering have given scientists unprecedented power to begin to understand the chemistry of life processes. The Department of Biochemistry and Molecular Biology aims to prepare students at Mississippi State in this exciting area.

The curriculum leads to a Bachelor of Science degree in biochemistry and molecular biology. The objective of this curriculum is to provide the student with a strong background in science as part of a liberal education and also to prepare the student for professional work and/or graduate study.

There are sufficient individual choices in the curriculum to allow students to tailor their programs to any of several areas of specialization by appropriate use of elective hours.

**BIOCHEMISTRY**

<b>University Core</b>	Public Speaking (3 hours)
English Composition (6 hours)	CO 1003 Fundamentals of Public Speaking <b>or</b>
EN 1103 English Comp I <b>or</b>	CO 1093 Honors Oral Communication
EN 1163 Accelerated Comp I <b>or</b>	
EN 1183 Honors Comp I	<b>Mathematics (6 to 9 hours)</b>
	MA 1713 Calculus I
EN 1113 English Comp II <b>or</b>	MA 1723 Calculus II
EN 1173 Accelerated Comp II <b>or</b>	
EN 1193 Honors Comp II	<b>Science (6 to 9 hours)</b>
	See major core

Humanities (6 hours)  
Select from University CORE

Fine Arts (3 hours)  
Select from University CORE

Social Sciences (6 hours)  
Select from University CORE

**Major Core**

CH 1213 Fund of Chemistry  
CH 1211 Investigations in Chemistry  
CH 1223 Fund of Chemistry  
CH 1221 Investigations in Chemistry  
CH 2313 Quantitative Inorgan Analysis  
CH 4513 Organic Chemistry  
CH 4511 Organic Chemistry Lab  
CH 4523 Organic Chemistry  
CH 4521 Organic Chemistry Lab  
BIO 3013 Prof Writing for BIO **or**  
CH 4103 Chemical Literature **or**  
BCH 1001 Intro to Biochem  
BCH 4603 General Biochem I  
BCH 4414 Radioisotopes\*  
BCH 4613 General Biochemistry II  
BCH 4623 Biochem Spec Tissues

BCH 4713 Molecular Biology\*  
BCH 3901 Senior Seminar  
BCH 4805 Biochemical Methods\*  
BIO 1203 Plant Biology  
BIO 1504 Prin of Zoology  
BIO 3304 General Micro  
BIO 4114 Cell Physiology  
PH 2213 Physics I\*\*  
PH 2223 Physics II\*\*  
18 hours Technical Electives \*\*\*

Writing Requirement (3 hours)  
AIS 3203 Intro Tech Writing In Agricomm

**Total hours needed for major: 128**

- \* Completion of these courses satisfies the Departmental requirements for computer literacy.
- \*\* PREMED, PREVET, and PREDENT majors are given the option of scheduling PH 1113 and PH 1123. In addition, PREMED majors must schedule a third semester of physics, either PH 1133 or PH 2233.
- \*\*\* Technical electives serve to prepare students for different areas of specialization. These courses are selected in collaboration with an advisor. However, students in specific areas should use specific courses.

**PRE-MEDICINE and PRE-DENTISTRY**

Genetics, Cell Biology, an Anatomy course, Embryology, and Immunology are strongly recommended.

**GRADUATE STUDIES TRACK**

Students aiming for a career requiring graduate education should take Genetics and Cell Biology as technical electives. Since many graduate programs require some form of physical chemistry, it is strongly suggested that students take CH 4413/4423 Physical Chemistry or CH 4404 Biophysical Chemistry as technical electives.

**BIOINFORMATICS SPECIALIZATION**

The objective of this specific selection of electives is to provide the student with a B.S. in Biochemistry and Molecular Biology incorporating a strong background in the biochemical sciences along with a rigorous preparation in the field of computer science. The graduate will be able to either enter graduate school or directly enter a job requiring knowledge of bioinformatics. This exciting field applies computational and database skills to molecular biological problems. Practitioners routinely mine genomic databases for information relating to basic understanding of life processes as well as information providing clues for medical and agricultural advances. This program also constitutes a minor in computer science. Students should take the following courses for their electives: CS 1233 Computer Programming with C; CS 1314, 2314, 2324 Computer Science I, II, III; CS 2813 Discrete Structures; CS 3833 Introduction to Analysis of Algorithms; CS 3813 Introduction to Formal Languages and Automata; CS 4633 Artificial Intelligence; CS 4653 Cognitive Science; ST 3113 Introduction to Statistical Inference.

**PREPARATION FOR ENTRY INTO MBA/MASTER of AGRIBUSINESS MANAGEMENT PROGRAM (4+1 PROGRAM)**

The objective of this specific selection of electives is to provide the student with a B.S. in Biochemistry incorporating a strong background in science and to prepare the student for immediate entry into a graduate program leading to an advanced business degree (either the Master of Business Administration or the Master of Agribusiness Management). Either program can be completed in a minimum of three semesters. Students thus educated may enter into management level positions in the biotech or agribusiness industry. Students should take the following courses for their electives: ACC 2013 Financial Accounting; EC 2113 Macroeconomics; ACC 2023 Managerial Accounting; EC 2123 Microeconomics; BQA Business Statistics I; MGT 3113 Principles of Management; BQA Business Statistics II; MGT 3413 Production Management; BL 2413 Business Law; MKT 3013 Principles of Marketing; FIN 3123 Financial Management.

**PREPARATION FOR ENTRY INTO AN ACCELERATED MASTER'S PROGRAM (THESIS) IN BIOCHEMISTRY and MOLECULAR BIOLOGY**

This program requires careful planning by the student in order to complete the requirements for the B.S. while beginning a research program that should result in successful completion of a Master's thesis at the end of the second summer after the B.S. Only exceptional and motivated students should attempt this program. It is critical that BCH 4603 General Biochemistry I be scheduled in the Spring of the Sophomore year. The student will be expected to begin a research project in the senior year by taking up to nine hours of Directed Individual Study courses (BCH 4000). Research will continue during the summer after completion of the B.S. degree. The student must register for BCH 8000 (3 hours), Thesis Research during the summer. In addition, the student should schedule a graduate level BCH course and ST 8114 in the Spring of the senior year.

The student interested in the Five Year Program should apply early in the undergraduate program to facilitate the scheduling of courses to conform to time constraints. In addition to applying for admission to the graduate program, the student must also take the Graduate Record Examination early enough so that the results are available by the beginning of the semester in which the student expects to graduate. The student must complete the courses required for completion of the BS degree with no more than 10 hours remaining in the semester of expected graduation.

**PREPARATION FOR ENTRY INTO AN ACCELERATED MASTER'S PROGRAM (NON-THESIS) IN BIOCHEMISTRY and MOLECULAR BIOLOGY**

This program requires careful planning by the student in order to complete the requirements for the B.S. while initiating graduate work that should result in completion of courses leading to a Master's Degree, non-thesis option. This curriculum allows completion of the two degrees in a minimum of five years. Required courses and electives must be scheduled so that the student has only eight hours of undergraduate course work remaining in the Spring of the senior year. The student should then schedule ST 8114 Statistical Methods and an 8000 level BCH course in that same semester. Graduate work must include BCH 8654 Intermediary Metabolism and BCH 7000(3hrs) Directed Individual Study (to allow completion of an independent research paper).

The student interested in the Five Year Program should apply early in the undergraduate program to facilitate the scheduling of courses to conform to time constraints. In addition to applying for admission to the graduate program, the student must also take the Graduate Record Examination early enough so that the results are available by the beginning of the semester in which the student expects to graduate. The student must complete the courses required for completion of the B.S. Degree with no more than 10 hours remaining in the semester of expected graduation.

PREPARATION FOR ENTRY INTO AN ACCELERATED  
PH.D. PROGRAM  
IN MOLECULAR BIOLOGY

This program requires careful planning by the student in order to complete the requirements for the B.S. while beginning a research program that should meaningfully accelerate progress towards early completion of the Ph.D. degree in Molecular Biology. By initiating a research program in the senior year, a student should reduce the time to completion of the Ph.D. by a year. Only exceptional and motivated students should attempt this program. It is critical that BCH 4603 General Biochemistry I be scheduled in the Spring of the Sophomore year.

The student will be expected to begin a research project in the senior year by taking the Directed Individual Study Courses. Research will continue during the summer after completion of the B.S. degree. The student must register for BCH 8003, Thesis Research during the summer.

The student should plan his/her complete graduate program of study in conjunction with research Director and Graduate Committee. Since the Ph.D. is primarily a research degree, ultimate time to completion will be dependent upon the period necessary to satisfy the research requirements of the Graduate Committee. This option allows the student to begin that research substantially earlier than usual.

**Three year program for early admission into the  
COLLEGE of VETERINARY MEDICINE**

The aim of this curriculum is to allow a student to matriculate through the Department of Biochemistry and Molecular Biology for three years and then proceed into the College of Veterinary Medicine under their early admissions policy. Successful completion of the courses taken during the first year in Veterinary Medicine will satisfy the Department's requirements for technical electives and allow the University to grant the student a B.S. in Biochemistry and Molecular Biology after this period.

39 hours	University CORE	BCH 3901	Senior Seminar
CH 1213	Fundamentals of Chemistry	BCH 4805	Biochemical Methods
CH 1211	Investigations in Chemistry	BIO 1504	Principles of Zoology
CH 1223	Fundamentals of Chemistry	BIO 2103	Cell Biology
CH 1221	Investigations in Chemistry	BIO 3304	General Micro
CH 2313	Quant Inorg Analogy	PH 1113	General Physics I
CH 4513	Organic Chemistry	PH 1123	General Physics II
CH 4511	Organic Chemistry Lab	VS 3014	Anatomy and Physiology
CH 4523	Organic Chemistry	GNS 3103	Genetics
CH 4521	Organic Chemistry Lab	BIO 3013	Prof Writing for Biologists <b>or</b>
BCH 1001	Intro to Biochemistry	CH 4103	Chemical Literature <b>or</b>
BCH 4603	General Biochemistry I	AIS 3203	Intro Tech Writing in Agricom
BCH 4414	Radioisotopes		
BCH 4613	General Biochemistry II		
BCH 4623	Biochemistry Special Tissues		
BCH 4713	Molecular Biology		

**99 hours required plus successful completion of the first  
year curriculum of the College of Veterinary Medicine**

Mississippi State requires a minimum of 128 hours for the undergraduate degree. Therefore, the first year in the College of Veterinary Medicine will contribute 29 hours of technical electives to this program.

**Department of ENTOMOLOGY and PLANT PATHOLOGY (EPP)**

Department Head: Clarence H. Collison  
Office: 106 Clay Lyle Entomology Complex

**ENTOMOLOGY**

Office: 103 Clay Lyle Entomology Complex

Entomology is the study of insects and the impact of insects on the health and economic well-being of mankind. The Clay Lyle Entomology Complex houses the staff and administrative offices of the department, and the laboratory and classroom facilities support a broad range of extension, research and teaching functions. Students have access to a wide range of entomological expertise. Most faculty have joint appointments with the College of Agriculture and Life Sciences and the Mississippi Agricultural and Forestry Experiment Station and/or the Mississippi Cooperative Extension Service. The breadth of the department is also influenced by several USDA/ARS research laboratories located on campus and at Stoneville, Mississippi. Master of Science and Doctor of Philosophy degrees in Entomology are offered (See the Graduate Bulletin for description of programs and requirements for advanced degrees.) Entomology jointly participates in the Agricultural Pest Management degree program with Plant Pathology and Weed Science (see Agricultural Pest Management).

**PLANT PATHOLOGY**

Office: 104 Dorman Hall

Plant pathology is the study of plant diseases, their causal agents and methods of control. Emphasis is placed on protection of environmental quality. Graduate programs of study leading to the Master of Science and the Doctor of Philosophy degrees in Plant Pathology are offered. (See the Graduate Bulletin for description of programs and requirements for advanced degrees.) Plant Pathology jointly participates in the Agricultural Pest Management degree program with Entomology and Weed Science (**See Agricultural Pest Management**).

**Department of FOOD SCIENCE and TECHNOLOGY (FST)**

Food Science and Technology Curriculum  
Major Advisor: Professor Juan Silva  
Office: 107 Herzer Building

The curriculum in Food Science and Technology is designed to educate students in the application of science to the manufacture, preservation, storage, marketing, and consumer use of food and beverage products.

Processing of the basic raw materials—milk, fruits, vegetables, meats, poultry, and miscellaneous foods and beverages—into consumer products by canning, freezing, dehydration, fermenting and fabrication is taught with emphasis on basic chemical, microbiological and physical principles as well as certain specific procedures. Therefore, those who complete a major in this field have excellent opportunities in or associated with the largest industry in the world—the food industry.

Students may emphasize any one of several commodities through proper selection of electives. The student will be advised by a departmental advisor.

The Food Science and Technology Curriculum offers three options: Processing/Business option, science option, and food safety option.

**FOOD SCIENCE and TECHNOLOGY**

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**



EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Mathematics (6 to 9 hours)	
	Refer to concentration
Science (6 to 9 hours)	
	Refer to concentration
Humanities (6 hours)	
	Select from University CORE
Fine Arts (3 hours)	
	Select from University CORE
Social Sciences (6 hours)	

AEC 2713 Intro to Ag Econ  
3 hours Select from University CORE

**Major Core**

FST 1103	Intro to Food Science
CH 1213	Fund of Chemistry
CH 1211	Invest in Chemistry
CH 1223	Fund of Chemistry
CH 1221	Invest in Chemistry
BIO 3304	General Microbiology
FST 2112	Food Products Evaluation
PH 1113	General Physics
FST 4114	Analysis of Food Products
FST 4164	Qual Assur of Food Prod
FST 4243	Food Comp and Reaction
FST 4414	Microbiology of Foods
FST 4241	Applied Food Chemistry
FST 4593	New Food Product Dev

Writing Requirement (3 hours)

AIS 3203 Intro to Technical Writing

**Processing/Business Concentration**

MA 1313	College Algebra
GA 1111	Survey of Agriculture
BIO 1203	Plant Biology
HS 1711	Professional Protocol
CH 2503	Elem Organic Chemistry
CH 2501	Elem Organic Chemistry Lab
CS 1013	Basic and Comp Conc & Appl*
HS 2293	Individual/Family Nutrition
FST 4114	Anal of Food Products
ST 3113	Intro to Statistical Inference
FST 3111	Food Science Seminar
FST 4573	Food Eng Fund <b>or</b>
FST 4583	Food Industry Unit Operations
MGT 3513	Intro to Human Resource Mgt <b>or</b>

MGT 3413	Prod Mgt
AIS 4203	Applic of Comp Tech to AIS & Ed
FST 4173	Food Packaging
ACC 2013	Prin of Financial Acct
FST 4153	Food Plant Management
6 hrs	Food Processing Electives**
6 hrs	Electives

**Total needed for major: 130**

\* Fulfills Computer Literacy requirement.

\*\* Food Processing Electives: FST 4314, Meats Processing; FST 4513 Poultry Processing; FST 4123, Fermented Foods Processing; or FST 4143 Dairy Foods Processing; or FST 4583 Food Industry Unit Operations.

**Science Concentration**

MA 1713	Calculus I
GA 1111	Survey of Agriculture
BIO 1203	Plant Biology
HS 1711	Professional Protocol
CH 2503	Elem Organic Chemistry
CH 2501	Elem Organic Chemistry Lab
MA 1723	Calculus II
CS 1013	Basic Computer Conc & Applic*
BCH 3613	Elem Biochemistry
BIO 1123	Animal Biology
FST 2664	Food Processing
PH 1123	General Physics
FST 4573	Food Eng Fund
ST 3113	Intro to Statistical Inference

HS 2293	Individual & Family Nutrition
FST 4153	Food Plant Mgt
6 hrs	Business Electives**
3 hrs	Food Processing Elective***
4 hrs	Electives

**Total hours needed for major: 131**

\* Fulfills Computer Literacy requirement.

\*\* Selected Business Electives: MGT 3513, Human Resource Mgt., MGT 3413, Production Mgt., ACC 2013, Prin of Accounting, AIS 4203, Appl of Comp Tech to Agric and Ext education.

\*\*\* Food Processing Electives: FST 4314, Meats Processing; FST 4513 Poultry Processing; FST 4123, Fermented Foods Processing; or FST 4143 Dairy Foods Processing; or FST 4583 Food Industry Unit Operations.

**Food Safety Concentration**

MA 1313	College Algebra
MA 1323	Trigonometry <b>or</b>
MA 1713	Calculus I
BIO 1504	Principles of Zoology
CH 4511	Organic Chemistry Lab
CH 4513	Organic Chemistry I
BCH 3613	Elem Biochemistry
PO 3103	Genetics
FST 2112	Dairy Food Prod Eval <b>or</b>
FST 3142	Meats Judging
ACC 2013	Prin of Financial Accounting
FST 4153	Food Plant Management <b>or</b>

FST 4173	Food Packaging
NTR 4115	Nutrition
BIO 2103	Cell Biology
FST 4314	Meat Processing

**Total hours needed for major through Junior year: 107****(Complete degree requirements listed in Veterinary Medicine)**

Note: Courses are application requirements for the College of Veterinary Medicine.

**SCHOOL of HUMAN SCIENCES**

Interim Director: Associate Professor Gary B. Jackson  
Office: 128 Lloyd Ricks Building

The mission of the School of Human Sciences is to address needs of individuals, families, communities and related businesses and industries through education, research and extension. Career preparation includes the generation and dissemination of knowledge, the education of professionals and the provision of research-based educational programs.

**HUMAN SCIENCES (HS)**

The Human Sciences program at Mississippi State University is accredited by the Council for Professional Development of the American Association of Family and Consumer Sciences. The Bachelor of Science degree in Human Sciences is conferred upon completion of a Human Sciences core, specialized course work and courses from supporting disciplines.

Human Sciences prepares men and women for professional work and provides a liberal and professional education. Students majoring in Human Sciences may choose to study from any one of four option areas. Human Sciences courses may also constitute a minor field of study or elective area for students in other majors. Field trips are required with some Human Sciences classes and costs are in addition to fees and tuition. Charges for field trips are prorated to students based on actual cost of transportation plus meals and lodging when applicable.

Transfer credits with grade of C or higher will be considered toward fulfillment of degree requirements in Human Sciences.

A minor in **Human Sciences** is available. Required are HS 2593, HS 3213, HS 3303, HS 3633, HS 4853. In addition, six credits are to be selected from HS 4403, HS 2613, HS 2813, HS 4313, HS 3203, HS 4333, HS 1533, HS 4193.

The following concentrations are offered in the School of Human Sciences:

Apparel, Textiles, and Merchandising (ATM); Food and Nutrition (FN); Human Development & Family Studies (HDFS); and Interior Design (ID).

### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
HDFS/ID - Select from University CORE  
ATM/FN - See Concentration

Science (9 hours)

HDFS See Concentration

FN See Concentration

ATM/ID CH 1043 + 6 hrs from University CORE

Humanities (6 hours)

ATM/ID See Concentration  
FND/HDFS Select from University CORE

Fine Arts

ATM/FN/HDFS - Select from University CORE  
ID See Concentration

Social Sciences (6 hours)

PSY 1013 General Psychology  
3 hrs See Concentration

### Major Core

HS 1701 Survey of Human Sciences  
HS 2293 Individual and Family Nutrition  
HS 3303 Consumer Economics  
HS 4702 Human Sciences Senior Seminar  
HS 4853 The Family: A Transactional Approach

### Choose one of the following concentrations:

#### Apparel, Textiles, and Merchandising Concentration

Advisors: Assistant Professor Wanda Cheek, Associate Professor Phyllis Bell Miller

**Apparel, Textiles, and Merchandising.** This option is designed to provide students with an understanding of the fashion and textile industries, consumer behavior, product quality, and business principles. Students concentrate in one of two areas: Merchandising or Apparel Production and Design. Merchandising combines an overview of the fashion industry, consumer behavior, and product knowledge with an understanding of business principles. Apparel Production and Design emphasizes the total design and production process from inception to finished product and its ultimate sale to the consumer. Apparel, Textiles, and Merchandising students are required to have a laptop computer during the freshman year, selected from a range of models recommended by the School of Human Sciences.

ART 1123 Design I  
HS 1533 Apparel Design I  
ACC 2013 Principles of Financial Accounting  
EC 2113 Principles of Macroeconomics  
HS 1523 Visual Design in Dress  
ACC 2023 Principles of Managerial Accounting  
HS 2553 Fashion Merchandising  
EC 2123 Principles of Microeconomics  
HS 4733 Computer-Aided Design for Human Sciences  
HS 3593 Merchandising & Promotion Strategies  
HS 2593 Apparel/Sewn Prod Analysis & Evaluation  
HS 3553 Fashion Retailing  
HS 2523 Introductory Textiles  
BL 2413 The Legal Environment of Business  
HS 3573 Historic Costume  
HS 4563 Intermediate Textiles  
HS 3563 Visual Merchandising  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Prod  
8 hours Foreign Language  
HS 4513 Social-Psych Aspects of Clothing  
HS 4701 Internship Placement Seminar  
HS 1711 Professional Protocol  
HS 4756 Internship

Writing Requirement (3 hours)

AIS 3203 Intro to Tech Writing in Agricomm

Computer Literacy (3 hours)

TKT 1273 Microcomputers in Education

Restricted Electives - choose 9 credit hours from one area

Apparel Production and Design Area

HS 4533 Apparel Design II  
HS 4583 Home-based Entrepreneurship  
HS 4710 Study Tour  
ART 1123 Design II  
ART 1213 Drawing I  
ART 1223 Drawing II  
ART 3103 Photography I  
ART 2213 Life Drawing I  
MGT 3413 Production Management

Merchandising Area

HS 4583 Home-based Entrepreneurship  
HS 4710 Study Tour  
BQA 2113 Business Stat I  
FIN 3123 Financial Mgt  
IB 3913 Prin of International Business  
IB 3933 International Marketing  
MGT 3413 Production Management  
MGT 3513 Intro to Human Resource Mgt  
MKT 3213 Retailing  
MKT 4113 Personal Selling  
MKT 4123 Advertising  
MKT 4413 Consumer Analysis & Behavior  
MKT 4813 Marketing Mgt  
PHI 3013 Business Ethics

### Total hours needed for major: 133

MINORS: A minor in Apparel, Textiles and Merchandising is available. Requirements for the minor are: HS 2593, HS 2523, HS 2553, HS 4513. In addition, six credits are to be elected from HS 1523, HS 1711, HS 2563, HS 3563, HS 3573, HS 3553, HS 4583, HS 1533, HS 2543, HS 4733, HS 4710.

#### Food and Nutrition Concentration

Advisors: Assistant Professor Carolyn Malone  
Instructor Carolyn Bailey

**Food and Nutrition.** The option prepares students for a wide variety of food and nutrition careers. For students interested in becoming a Registered Dietitian, the Didactic program in Dietetics at Mississippi State University is currently granted Developmental Accreditation by the Commission of Accreditation for Dietetics Education of the American Dietetic Association, 216 W. Jackson Boulevard, Chicago, IL 60606-6995; telephone 312-899-0040. Upon completion of the didactic program, graduates may pursue participation in a supervised practice program. Successful completion of the supervised practice program, followed by the Registration Exam, fulfills the requirements to become a Registered Dietitian. All students in Food and Nutrition are required to have a computer that meets specifications established by the School of Human Sciences.

CH 1213 Fundamentals of Chemistry  
CH 1211 Investigations in Chemistry  
HS 2203 Science of Food Preparation  
SO 1003 Intro to Sociology **or**  
SO 1103 Contemp Social Problems  
CH 1223 Fundamentals of Chemistry  
CH 1221 Investigations in Chemistry

ST 2113 Stat for Behavioral Sciences  
BIO 1504 Principles of Zoology  
CH 2503 Organic Chemistry  
CH 2501 Lab  
HS 3283 The Foodservice System  
BCH 3613 Elementary Biochemistry  
HS 4213 Nutrition Public Policy & Promotion

BIO 2014	Human Physiology	HS 3274	Quantity Food Production & Ser
HS 4283	Purch Food & Equip for Institutions	HS 4233	Medical Nutrition Therapy
HS 4701	Internship Placement Seminar	HS 4243	Nutrition Throughout the Life Cycle
HS 4223	Human Nutrition I	PO 3103	Genetics
MGT 3114	Prin of Management and Prod	Writing Requirement	
BIO 3304	General Microbiology	AIS 3203	Intro to Tech Writing
HS 3263	Research Meth in Food & Nutrition		
HS 3003	Field Experience		
HS 4423	Teaching Human Sciences		
MGT 3513	Intro Human Resources Mgt		
HS 4273	Nutritional Assessment		

**Total hours needed for major: 128**

### Human Development & Family Studies Concentration

Advisors: Professor Jan Cooper Taylor; Assistant Professors Sheri Lokken and Wanda Cheek

**Human Development and Family Studies (HDFS).** This option offers an interdisciplinary lifespan approach to the study of children and families. It encompasses specialty areas in preschool teaching, childcare, administration, family services, child life, consumer economics, human sciences teacher education and extension. Students develop an awareness of trends, issues and public policy affecting families; analyze factors that influence cognitive, emotional, social and physical development in the contexts of culture and family. Graduates enter diverse public and private sectors which focus on enabling children and families to function effectively in today's complex society. Human Development and Family Studies students are required to have a laptop computer, selected from a range of models recommended by the School of Human Sciences.

Specific course work is required to specialize in Extension or to meet class A teacher certification requirement for Vocational Home Economics in the state of Mississippi. Specific course work is also required to specialize in child life, preschool education, or family services.

All teacher education programs at Mississippi State University are NCATE accredited. Students must conform to the policies on teacher education, as explained under "Teacher Licensure" elsewhere in this catalog. Additional endorsement is available in these occupational areas: Clothing, apparel and textiles; child care guidance; and institutional food and administration. Approved work experience is required to obtain this special endorsement.

HS 1802	Professional Seminar I	HS 2593	Apparel/Sewn Product Anal & Evaluation
SO 1003	Introduction to Sociology	HS 1533	Apparel Design I
BIO 1004	Anatomy & Physiology	HS 2203	Science of Food Preparation
TKT 1273	Microcomputers in Education*	HS 2523	Introductory Textiles
HS 2803	Pre-natal and Infant Development	HS 2813	Child Development I
EPY 3543	Psychology of Adolescence	EPY 3543	Psychology of Adolescence
HS 2813	Child Development I	PE 1223	Personal Health
HS 2283	Child Health and Nutrition	HS 2283	Child Health and Nutrition
6 hrs	Science with Laboratory	HS 4423	Teaching Human Sciences
HS 3813	Child Development II	HS 4803	Art of Parenting
PE 3213	Emergency Health Care <b>or</b>	HS 2613	Intro to Interior Environments
PE 1223	Personal Health	HS 4333	Families, Legislation & Policy
HS 4403	Intro to Gerontology	HS 4403	Introduction to Gerontology
EDX 3213	Psych & Ed Exceptional Children & Youth	EDX 3213	Psych & Ed of Excep Child & Youth
HS 2613	Intro to Interior Environments <b>or</b>	HS 4313	Family Resource Management
COE 4013	Facilitative Skills Development	HS 3001	Field Experience
HS 4313	Family Resource Management	Writing Requirement	
HS 4803	Art of Parenting	AIS 3203	Intro to Tech Writing*
HS 4823	Dev & Adm of Child Svc Programs	Computer Literacy (3 hours)	
HS 4333	Families, Legislation, & Public Policy	TKT 1273	Microcomputers in Education*
9 hrs	Restricted Electives (see advisor)		
5-8 hrs	Electives		
HS 4750	Internship		

**Total hours needed for major: 132**

#### Writing Requirement

AIS 3203 Intro to Tech Writing\*

#### Computer Literacy (3 hours)

TKT 1273 Microcomputers in Education\*

#### Restricted Electives

##### Child Studies (Preschool/Child Life)

EDE 3233 Teaching Children's Literature  
 HS 3803 Child Care Procedures  
 HS 3823 Designing Child Care Programs  
 HS 4834 The Hospitalized Child\* (Child Life)  
**or** other approved restricted elective (Preschool)

##### Family Studies

HS 3633 Environments for Special Needs  
 HS 4813 Adult Development: The Middle Years  
 HS 4843 Family Interaction  
 HS 4863 Consumer Aspects of Aging

**Total hours needed for major: 128-130**

##### Family & Consumer Sciences Emphasis

CH 1043 General Chemistry  
 6 hrs Science with laboratory  
 SO 1003 Introduction to Sociology

#### Education

EDF 3333 Social Foundations of Education  
 EPY 3143 Human Dev & Learning Strategies in Ed  
 EDS 3411 Practicum in Secondary Ed  
 HS 4462 Curriculum in Human Sciences  
 EDF 3243 Planning & Managing Learning  
 EPY 3253 Evaluating Learning  
 EDS 4873 Prof Seminar in Secondary Ed  
 HS 4886 Student Teaching  
 HS 4896 Student Teaching

**Total hours needed for major: 133**

#### Extension

AIS 3303 Youth Organizations  
 EDX 3213 Psych & Ed of Excep Child & Youth  
 HS 4701 Internship Placement Seminar  
 HS 1711 Professional Protocol  
 AIS 4103 Obj & Proc of Prog in AIS and Ed  
 12 hours Restricted Electives (See advisor)

**Total hours needed for major: 129**

\* Satisfies University CORE

A minor in **Child and Family Studies** is available. Requirements are: HS 2803, HS 2813, HS 3803, HS 4803, HS 4853. In addition, six credits are to be elected from HS 4403, HS 4843, HS 3813, HS 3823, HS 4863, HS 2283, and HS 4333.

A minor in **Consumer Economics** is available. Requirements are: HS 3303, HS 3463, HS 4313, HS 4333. In addition, nine credits are to be elected from HS 4323, HS 4853, HS 4863 and HS 4403.

**Interior Design (ID) Concentration**

Advisors: Associate Professor Margaret S. Bateman  
Assistant Professor Beth Miller

**Interior Design.** This option offers the student a broad background in interior elements, materials, sources and practical experience in the business of interior design; it develops the skills of the design process to create functional, efficient and aesthetically pleasing residential and commercial interior environments for human use. The program is accredited by the Foundation for Interior Design Education and Research (FIDER). Interior Design students are required to have a computer during the freshman year, selected from a range of models recommended by the School of Human Sciences.

ART 1123	Design I	HS 4613	Residential Interior Design Studio I
EG 1513	Architectural Graphics	6 hours	Science with laboratory
ART 1133	Design II	HS 4623	Commercial Interior Design Studio I
ART 1213	Drawing I	ART 3103	Photography I
EG 2513	Construction Drawing	HS 4643	Residential Interior Design II
HS 3611	Portfolio Presentation	ABE 4383	Building Construction
MA 1323	Trigonometry <b>or</b>	HS 4653	Commercial Interior Design Studio II
MA 1463	Finite Math & Intro to Calculus	HS 4663	Prof Procedures & Practices for Interior Des
HS 4733	Computer-Aided Design*	HS 4576	Internship
HS 3673	Environments for Special Needs	EC 2113	Principles of Macroeconomics <b>or</b>
ART 1013	Art History <b>or</b> ART 1023, Art History <b>or</b>	AEC 2713	Intro to Ag Economics*
ARC 2313	Hist Arch I <b>or</b> ARC 2323, Hist Arch II	PHI 3013	Business Ethics*
HS 2523	Introductory Textiles	3 hours	Elective
HS 2633	Int Materials, Treatments & Resources		
HS 3643	History of Interiors I	Writing Requirement	
ART 2203	Rendering	AIS 3203	Intro to Tech Writing*
HS 2613	Intro to Interior Environments		
HS 4563	Intermediate Textiles		
HS 3653	History of Interiors II		
HS 4693	Furniture Design		
HS 3663	Color and Lighting for Interiors		

Writing Requirement  
AIS 3203 Intro to Tech Writing\*

\* Satisfies University CORE

**Total hours needed for major: 133**

**Gerontology Concentration**

Coordinator: Sheri Lokken, Assistant Professor

The Gerontology Concentration is designed to provide the student with current factual and theoretical data along with practicum experience relating to the process of aging. It is a multidisciplinary effort with contributions from a variety of departments cutting across several colleges on the campus.

The concentration is open to students from all colleges within the University. It was developed to supplement the student's elected area of emphasis. A student wishing to take the Gerontology Concentration will select a major in addition to electing the concentration.

Students completing the concentration will earn a certificate in gerontology. The certificate will be issued by the Council on Gerontology, signed by the dean of the college in which the student is enrolled, by the head of the department in which the student is obtaining a major, and by the Coordinator of the Gerontology Concentration.

**Undergraduate Certificate Requirements:** (Minimum 15 hours)

Select three of the following:

HS 4403	Intro to Gerontology
ABE 4513	Dynamics of Aging
PSY 4983	Psychology of Aging
HS 4863	Consumer Aspects of Aging
SO 4413	Aging and Retirement in American Society
SW 4623	Social Work with the Aged

Select at least two of the following: (may include courses from above list)

COE 4713	Issues in Aging
SW 2323	Social Welfare Policy
HS 3673	Environments for Special Needs
HS 4243	Nutrition Throughout the Life Cycle
HS 4813	Adult Development
HS 4333	Families, Legislation, and Public Policy

**Graduate Certificate Requirements:**(minimum 18 hours)

Select three of the following:

ABE 6513	Dynamics of Aging
PSY 6983	Psychology of Aging
SO 6413	Aging & Retirement in American Society
HS 6863	Consumer Aspects of Aging
PE 8153	Wellness and Aging

Take at least two of the following:(may include courses from the above list)

HS 6813	Adult Development
HS 6243	Nutrition Throughout the Life Cycle
HS 8243	Community Nutrition
HS 6333	Families, Legislation, and Public Policy
COE 8813	Counseling the Elderly
COE 6713	Issues in Aging
PSY 8313	Developmental Psychology

Required: Independent study/readings course (3 hours)

**Department of LANDSCAPE ARCHITECTURE (LA)**

Professor and Head: Cameron R. J. Man  
Office: 130 Lloyd Ricks

**Landscape Architecture Curriculum**

Landscape Architecture is a design profession, concerned with the harmonious relationship of man and his environment.

Thus, a student of this discipline learns how to apply the design process to discover how physical installations or activities of man can be placed upon the land in a fashion that accommodates man, functionally and aesthetically, and complements the environment.

The Landscape Architecture program at Mississippi State University is accredited by the American Society of Landscape Architects. Upon completing curriculum requirements, a student receives a Bachelor of Landscape Architecture (BLA) degree. A Master's degree in Landscape Architecture (MLA) is also available. For more information, refer to the Graduate Bulletin.

There are many career opportunities for landscape architects with private firms and in governmental agencies. The scope of this profession includes, but is not limited to: site planning for housing developments, shopping centers, malls, civic centers, industrial parks, campuses, motels, resort areas, country clubs, golf courses, and municipal, state, regional and national parks.

In addition to completing the specified courses of the curriculum, all students are required to participate in at least one major department-sponsored field trip. A field trip fee will be assessed to specific courses. Students are expected to consult with their assigned academic advisor in choosing electives.

The Department reserves the right to retain student work for the purpose of records, exhibition, instruction, etc.

All students in Landscape Architecture are required to have their own personal computer. Students should check with the Department for equipment specifications prior to purchasing.

**All students admitted to Mississippi State University may be enrolled in the first year of the program. After completion of 30 hours of course work at MSU or another university or community college, students must have achieved a minimum 2.5 grade point average (GPA), on a 4.0 scale, and must maintain at least a GPA of 2.5 to continue enrollment in the curriculum. A student who does not satisfy this requirement will not be allowed to enroll in LA prefix courses beyond the freshman (1000) level until his or her overall cumulative GPA reaches 2.5 or better.\***

**In as much as the published Bulletin of Mississippi State defines a letter grade of “D” as poor, Landscape Architecture requires that a grade of “C” or better is required to fulfill a curriculum requirement.\***

**The department reserves the right to retain student work for the purpose of records, exhibition, instruction, industry review, etc. In addition to Mississippi State University policies, all students enrolled in this curriculum shall be required to abide by all approved departmental policies.**

\* As published in the Department of Landscape Architecture policy manual.

### LANDSCAPE ARCHITECTURE (LA)

#### University Core

English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I  
  
 EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II  
 Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication  
 Mathematics (6 to 9 hours)  
 ST 3113 Intro to Statistical Inference\*\*\* *and*  
 Select from University CORE  
 Science (6 to 9 hours)  
 Select from University CORE  
 Humanities (6 hours)  
 Select from University CORE  
 Fine Arts (3 hours)  
 Select from University CORE  
 Social Sciences (6 hours)  
 Select from University CORE

#### Major Core

ART 1123 Art Design I  
 LA 1153 Intro to Landscape Architecture  
 LA 1253 Design Fund in Landscape Arch  
 LA 2323 Presentation Methods and Media

PSS 2423 Plant Materials I  
 EC 2113 Economics I (Macro)  
 LA 2423 History of Landscape Arch  
 LA 2453 Site Inventory and Analysis  
 LA 2433 Landscape Systems  
 LA 2555 Design Studio I  
 LA 3544 Construction I  
 PSS 3303 Soils **or** Geology (GG) Course  
 LA 3655 Design Studio II  
 LA 3644 Construction II  
 LA 3623 Urban Planning Theory  
 LA 3652 Case Studies  
 LA 4755 Design Studio  
 LA 4744 Construction  
 LA 4855 Capstone Studio  
 LA 4844 Design Sustainable Comm  
 6 hours  
 ST 3113 Intro to Statistical Inference \*\*  
 ART 1113 Art Appreciation **or**  
 ARC 1013 Arch Appreciation  
  
 Writing Requirement (3 hours)  
 LA 3723 Professional Practice  
 Computer Literacy  
 LA 1223 Use of Computer in Landscape Arch

\* Select from courses offered by faculty within department.

\*\* Prerequisite: MA 1313

**Total hours needed for major: 128**

### Landscape Contracting and Management Curriculum

A landscape contractor is a specialty contractor who provides the materials and services needed to make the landscape architect's project become a reality; and/or to provide the management and maintenance needed to keep the project in prime condition after implementation.

All students in Landscape Contracting and Management are required to have their own personal computer. Students should check with the Department for equipment specifications prior to purchasing.

The Landscape Contracting and Management degree program at Mississippi State University, accredited by the Associated Landscape Contractors of America, requires three internships which involve three semesters of experiential learning and field experience with an approved landscape contracting company or agency; and, under supervision of a qualified supervisor and oversight of Mississippi State University faculty. In addition, two departmental field trips are specific curriculum requirements for this degree. A field trip fee will be assessed to specific courses. Upon successful completion of curriculum requirements, a student receives a Bachelor of Science degree in Landscape Contracting and Management.

**All students admitted to Mississippi State University may be enrolled in the first year of the program. After completion of 30 hours of course work at MSU or another university or community college, students must have achieved a minimum 2.5 grade point average (GPA), on a 4.0 scale, and must maintain at least a GPA of 2.5 to continue enrollment in the curriculum. A student who does not satisfy this requirement will not be allowed to enroll in LA prefix courses beyond the freshman (1000) level until his or her overall cumulative GPA reaches 2.5 or better.\***

**In as much as the published Bulletin of Mississippi State defines a letter grade of “D” as poor, Landscape Architecture requires that a grade of “C” or better is required to fulfill a curriculum requirement.\***

**The department reserves the right to retain student work for the purpose of records, exhibition, instruction, industry review, etc. In addition to Mississippi State University policies, all students enrolled in this curriculum shall be required to abide by all approved departmental policies.**

\* As published in the Department of Landscape Architecture policy manual.

### LANDSCAPE CONTRACTING (LC)

English Composition (6 hours)  
 EN 1103 English Comp I\* **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I  
  
 EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II  
 Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication  
 Mathematics (6 to 9 hours)  
 MA 1323 Trigonometry  
 CH 1043 General Chemistry\*\*  
 Science (6 to 9 hours)  
 BIO 1203 Plant Biology with Lab

GG 1113 Survey of Earth Science I\*\*  
 GG 1111 Earth Science I Lab  
 Humanities (6 hours)  
 Select from University CORE  
 Fine Arts (3 hours)  
 Select from University CORE  
 Social Sciences (6 hours)  
 Select from University CORE  
 Major Core  
 LA 1701 Intro to Landscape Contracting  
 ABE 2873 Land Surveying with Lab  
 ST 3113 Intro Statistical Inference \*\*\*  
 PSS 3303 Soils  
 PSS 3301 Soils Lab  
 LA 1712 Landscape Contracting Internship I  
 LA 2323 Presentation Methods & Media

LA 1153	Intro to Landscape Arch	LA 3701	Landscape Contracting Seminar III
ABE 2173	Internal Combustion Engine Technology	PSS 4414	Turfgrass Management
LA 2701	Landscape Contracting Seminar I	MKT 3013	Prin of Marketing
PSS 2423	Plant Materials I	FLS 1114	Spanish I
EC 2113	Prin of Macroeconomics	3 hours	LA Faculty Elective
LA 1253	Design Fund in Land Arch	LA 4744	Landscape Contracting IV
PSS 3474	Plant Materials II	LA 4721	Landscape Contracting Field Trip II
PSS 4353	Aboriculture & Landscape Maint	BL 3223	Law of Commercial Transactions
ACC 2013	Prin of Financial Acc	MGT 3513	Intro Human Resource Management
EC 2123	Prin of Microeconomics	Writing Requirement (3 hours)	
LA 2712	Landscape Contracting Internship II	LA 4733	Landscape Contracting III
LA 3713	Landscape Contracting I	Computer Literacy	
LA 3544	Landscape Construction I with Lab	LA 1223	Use of Computer in Landscape Arch
LA 3701	Landscape Contracting Seminar II		
PSS 3133	Intro to Weed Science		
ACC 2023	Prin of Managerial Accounting		
LA 2334	Plant Specs for Small Properties		
LA 4724	Landscape Contracting II		
LA 3721	Landscape Contracting Field Trip I		
EPP 3423	Ornamental & Turfgrass Insects		
MGT 3114	Prin of Management & Prod		
LA 3712	Landscape Contracting Internship III		
LA 4733	Landscape Contracting III		

**Total hours needed for major: 141**

## Department of PLANT and SOIL SCIENCES (PSS)

Interim Department Head: Frank Matta  
Office: 117 Dorman Hall

Plant and Soil Sciences curricula focus on the application of sciences to the integrated management of plants, soil, and climate for high-quality production of food, fiber, and ornamental plants. Central to this course of study is the dedication to conserve, maintain and enhance our environment. An undergraduate student may major in either Agronomy (AGN) or Horticulture (HO) and specialize in various option areas such as Agricultural and Environmental Soil Sciences (AGN), Golf and Sports Turf Management (AGN), Integrated Crop Management (AGN), Floriculture and Ornamental Horticulture (HO), and Retail Floristry Management (HO).

Graduate programs (M.S. and Ph.D.) are also offered in the Department of Plant and Soil Sciences in Agronomy, Horticulture, and Weed Science. Consult the Graduate Bulletin for additional details.

### AGRONOMY (AGN)

#### University Core

English Composition (6 hours)

EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I

EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II

Public Speaking (3 hours)

CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication

Mathematics (6 to 9 hours)

MA 1313	College Algebra
3 hours	Select from University CORE <b>or</b> see Concentrations

Science (6 to 9 hours)

See major core/concentration

Humanities (6 hours)

Select from University CORE

Fine Arts (3 hours)

Select from University CORE

Social Science (6 hours)

See major core/concentration **or** select from University CORE list

#### Major Core

BIO 1203	Plant Biology*
BIO 4214	General Plant Biology
PSS 3301	Soils Laboratory
PSS 3303	Soils
PSS 4313	Soil Fertility and Fertilizers

Computer Science Elective - Choose one from the following:

AEC 1223	Computer Applications for Ag and Life Scientists
CS 1013	Basic Computer Concepts & Appl
CS 1213	Computer Programming w/ Fortran
CS 1253	Computer Programming w/ Pascal
CS 1233	Computer Programming w/ C
AIS 4203	Applications of Computer Tech of AIS & Ed

Writing Requirement (3 hours)

AIS 3203	Intro to Tech Writing in Agricom
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\* Satisfies University CORE

### Agricultural and Environmental Soil Sciences Concentration

Professors Jac J. Varco and Kingery Cox  
Associate Professors William Kingrey and Michael Cox

The Agricultural and Environmental Soil Science curriculum provides an educational foundation in soil processes involving physical, chemical, and biological interrelationships. The soil resource is an integral component of our environment and is subject to loss and degradation through human activities. Humanity's dependence on soil for food and fiber production and the need for ensuring environmental quality require individuals trained in the management of this resource. Career opportunities exist both nationally and internationally in agricultural and environmental consulting, agribusiness, government agencies, teaching, and research. Required courses provide soil science training, while elective courses can be selected to meet specific needs.

**Cooperative Education:** Agricultural and Environmental Soil Science students are encouraged to participate in the cooperative education program.

GR 1123	Intro to World Geography	CH 4513	Organic Chemistry
MA 1323	Trigonometry	CH 4523	Organic Chemistry
MA 1713	Calculus I	GG 1151	Earth Materials & Processes Lab
ST 3113	Intro to Statistical Inference	GG 1153	Geology for Scientists and Engineers
AEC 2713	Intro to Agricultural Economics	PH 1113	General Physics
BIO 3304	General Microbiology	PH 1123	General Physics
CH 1211	Investigations in Chemistry	PSS 4313	Soil Microbiology
CH 1213	Fundamentals of Chemistry		
CH 1221	Investigations in Chemistry		
CH 1223	Fundamentals of Chemistry		
CH 2314	Quantitative Inorganic Analysis		

Choose 6 hours from the following:

PSS 4323	Soil Classifications
PSS 4333	Soil Conservation and Land Use

PSS 4623 Physical Edaphology  
PSS 4603 Soil Chemistry

CH 3213 Inorganic Chemistry  
CH 4303 Environmental Chem I  
CH 4404 Biophysical Chem  
CH 4413 Physical Chem  
EPP 2213 Intro to Insects  
EPP 3113 Intro Plant Pathology  
FO 3123 Forest Eco & Global Env  
GG 3133 Intro to Env Geology  
GG 3613 Water Resources  
GG 4114 Mineralogy

PSS 3133 Intro Weed Science  
PSS 4103 Forage & Pasture Crops  
PSS 4123 Grain Crops  
PSS 4133 Fiber & Oilseed Crops  
PSS 4223 Seed Production  
PSS 4323 Soil Classification  
PSS 4333 Soil Conv & Land Use  
PSS 4414 Turf Management  
PSS 4623 Physical Edaphology

### Restricted Electives: (24 Hours Required)

ABE 2263 AG Survey and Drain  
ABE 4263 Soil & Water Mgt  
ADS 1114 Animal Science  
AEC 3123 Farm Management  
BCH 3613 Elementary Biochemistry  
BCH 4414 Radioisotope Tech I  
BIO 4213 Plant Ecology  
BIO 4404 Environment Micro  
GG 4304 Prin of Sed Deposits I  
GG 4503 Geomorphology  
GR 2313 Maps & Remote Sens  
GR 3113 Cons of Natur Resources  
GR 3323 Com Applic in Geosci  
GR 4603 Climatology  
MA 1723 Calculus II  
PSS 1313 Plant Science

**Total hours needed for major: 128**

### Golf and Sports Turf Management Concentration

Major Advisors: Professors J. Michael Goatley  
Assistant Professor Barry Stewart

The Golf and Sports Turf Management (GSTM) is the study of plant and soil sciences for the culture of turfgrass on golf and sports facilities. The GSTM curriculum prepares individuals for careers as golf course superintendents at private, daily fee, and resort courses or as sports turf managers at city, school, and professional sports turf facilities (i.e. football, baseball, soccer fields.) New construction of golf courses and sports facilities has led to a heightened demand for trained golf and sports turf management professionals. Three semesters of Cooperative Education work experience will be required of all students enrolled in the GSTM option.

**Cooperative Education Requirements:** GSTM students must complete a minimum 12 months or three semesters of Coop work at a golf course with an individual who is certified or progressing toward certification with the Golf Course Superintendents Association of America or at a sports stadium with a recognized sports turf manager. One of the three Coop semesters enrolled by the student must be a non-summer semester period. A 2.50 cumulative QPA on all MSU work is required to participate in the GSTM program. All new students must register with their coop advisor early in their initial semester of enrollment.

ACC 2013 Principles of Financial Accounting  
ABE 2263 Agricultural Surveying and Drainage  
ABE 4163 Machinery Mgt for Agro-Ecosystems  
CH 1043 General Chemistry  
CH 1053 General Chemistry  
CH 1051 Experimental Chemistry (CH 1053)  
CH 2503 Elementary Organic Chemistry  
CH 2501 Elementary Organic Chemistry Lab  
EC 2113 Principles of Macroeconomics  
EPP 3113 Introductory Plant Pathology  
EPP 3423 Ornamental & Turfgrass Insects  
FLS 1114 Spanish I  
FLS 1124 Spanish II  
LA 2334 Plant Spec for Small Properties  
LA 3603 Design of Golf Environment  
LA 4344 Landscape Arch Construction IV  
MGT 3113 Principles of Management  
MGT 3513 Intro to Human Resource Mgt  
PSS 2423 Plant Materials I  
PSS 3133 Intro Weed Science  
PSS 3411 Turf Seminar I  
PSS 3421 Turf Seminar II  
PSS 3473 Plant Materials II  
PSS 4353 Arboriculture & Landscape Maint  
PSS 4414 Turfgrass Management  
PSS 4423 Golf Course Operations  
PSS 4823 Turfgrass Weed Management

CP 2103 First Work Semester  
CP 2203 Second Work Semester  
CP 3303 Third Work Semester  
**Restricted Electives - (12 hours required)**  
ABE 1073 Agriculture Mechanics  
ABE 2173 Int Combust Eng Tech  
BCH 3613 Elem Biochemistry  
BIO 1213 Survey of Plant & Fungi King  
BIO 4203 Taxonomy of Spermatophytes  
CO 2213 Small Group Comm  
CO 2253 Fund of Interpersonal Comm  
LA 4733 Landscape Contr II  
3 hours Finance Elective  
PE 1081 Beginning Golf  
PE 3213 Emergency Health Care  
PH 1113 General Physics  
PSS 1313 Plant Science  
PSS 3923 Plant Propagation  
PSS 4223 Seed Production  
PSS 4314 Soil Microbiology  
PSS 4323 Soil Classification  
PSS 4333 Soil Conservation & Land Use  
PSS 4343 Greenhouse Management  
PSS 4603 Soil Chemistry  
PSS 4623 Physical Edaphology

**Total hours needed for major: 131**

### Integrated Crop Management Concentration

Major Advisors: Professor Frank B. Matta  
Associate Professors Brian Baldwin, David J. Lang, and Ted Wallace  
Assistant Professor Paul Meints

Integrated Crop Management (ICM) is the study of food and fiber production utilizing ecologically sound and technologically advanced methods. Areas covered include basic concepts of plant science and specific practices in crop initiation, culture, harvesting, processing, distribution and marketing. Biotechnological and traditional methods of germplasm enhancement are taught. Specific program areas of study include agronomic crop production, crop science, fruit science, seed science, seed technology, and vegetable crop production. Students completing the Integrated Crop Management curriculum are prepared for careers as producers, consultants, technical representative plant breeders, extension agents, or inspectors with USDA and state agencies. This curriculum also provides a good background of basic sciences for those who wish to pursue graduate studies.

AEC 2713 Intro to Agricultural Economics\*  
AEC 3133 Intro to Agribusiness Mgt  
AEC 3413 Principles of Agri Marketing  
BCH 3613 Elementary Biochemistry  
BIO 3304 General Microbiology  
CH 1043 General Chemistry\*  
CH 1053 General Chemistry\*  
CH 1051 Experimental Chemistry (CH 1053)  
CH 2503 Elementary Organic Chemistry  
CH 2501 Elementary Organic Chemistry Lab  
EPP 2213 Introduction to Insects  
EPP 3113 Introduction Plant Pathology  
GA 1111 Survey of Agriculture  
PO 3103 Genetics I  
PSS 1313 Plant Science  
PSS 3133 Intro Weed Science  
PSS 4712 Agronomic Management Problem  
3 hours Business Elective

EPP 4263 Prin of Insect Pest Mgt  
MA 1713 Calculus I  
PH 1113 General Physics  
PSS 2423 Plant Materials I  
PSS 3043 Fruit Science  
PSS 3923 Plant Propagation  
PSS 4103 Forage & Pasture Crops  
PSS 4123 Grain Crops  
PSS 4133 Fiber & Oilseed Crops  
PSS 4143 Advanced Fruit Science  
PSS 4213 Seed Analysis & Lab Prac  
PSS 4223 Seed Production  
PSS 4233 Seed Cond Machinery  
PSS 4243 Seed Technology  
PSS 4253 Seed & Grain  
PSS 4263 Viticulture  
PSS 4314 Soil Microbiology  
PSS 4323 Soil Classification  
PSS 4333 Soil Cons & Land Use  
PSS 4343 Greenhouse Mgt  
PSS 4363 Nursery Mgt  
PSS 4414 Turfgrass Mgt  
PSS 4444 Plant Tissue Culture  
PSS 4453 Vegetable Prod  
PSS 4503 Plant Breeding  
PSS 4603 Soil Chemistry  
PSS 4633 Weed Bio & Ecology  
PSS 4813 Herbicide Tech  
3 hours Agri-Business Elective

**Total hours needed for major: 128**

Consult with the appropriate faculty advisor for restricted course selection emphasizing the following program areas: Crop Science, Agronomic Crop Production, Vegetable Crop Production, and Fruit Science.  
\* Satisfies University CORE

### Restricted Electives - (24 hours required)

EPP 4163 Plant Disease Mgt  
PSS 4253 Seed & Grain Stor

**HORTICULTURE (HO)****University Core**

English Composition (6 hours)

- EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

- EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics (6-9 hours)

- MA 1313 College Algebra  
 3 hours Select from University CORE list

Science (6-9 hours)

See major core/concentration

Humanities (6 hours)

- Floriculture - See concentration  
 Retail Floristry - Select from University CORE

Fine Arts (3 hours)

Select from University CORE

Social/Behavioral Sciences (6 hours)

Floriculture:

- AEC 2713 Intro to Ag Economics  
 3 hours Select from University CORE

Retail Floristry:

See Concentration

**Major Core**

Computer Literacy - Choose one of the 6 below:

- AEC 1223 Computer Appl for Ag & Life Sciences  
 CS 1013 Basic Computer Concepts  
 CS 1213 Computer Programming w/ Fortran  
 CS 1233 Computer Programming w/ C  
 CS 1253 Computer Programming w/ Pascal  
 AIS 4203 Appl Computer Tech AIS and Ed

- ACC 2013 Principles of Financial Accounting  
 BIO 1203 Plant Biology\*  
 CH 1043 General Chemistry\*  
 LA 2334 Plant Spec for Small Properties  
 PSS 1313 Plant Science  
 PSS 2343 Floral Design\*  
 PSS 2423 Plant Materials I  
 PSS 3313 Interior Plant Design & Maint  
 PSS 3473 Plant Materials II  
 PSS 3923 Plant Propagation  
 PSS 3511 Seminar

Writing Requirement (3 hours)

- AIS 3203 Intro to Tech Writing Agricom

\* Satisfies University CORE

**Floriculture and Ornamental Horticulture Concentration**

Major Advisors: Professor David H. Tatum  
 Associate Professor: Richard L. Harkess

Floriculture and Ornamental Horticulture offers diversified opportunities that are challenging, intellectually stimulating, and economically rewarding. Floriculture and Ornamental Horticulture is the science and art of producing, distributing, marketing, and utilizing flowers, flowering and foliage plants, and woody ornamental landscape plants. It offers a wide variety of employment opportunities and competitive salaries. Students completing this curriculum are prepared for many different careers including greenhouse or nursery management, landscape management, public service, and technical product research and sales.

- AEC 2713 Intro to Agricultural Economics\*  
 BIO 1213 Survey of Plant and Fungi Kingdom  
 BIO 4203 Taxonomy of Spermatophytes  
 BIO 4214 General Plant Physiology  
 CH 1051 Experimental Chemistry (CH 1053)  
 CH 1053 General Chemistry\*  
 CH 2501 Elementary Organic Chemistry Lab  
 CH 2503 Elementary Organic Chemistry  
 EPP 3113 Introductory Plant Pathology  
 EPP 3423 Ornamental and Turfgrass Insects  
 FLS 1114 Spanish I  
 FLS 1124 Spanish II  
 MGT 3113 Principles of Management  
 PO 3103 Genetics  
 PSS 3301 Soils Laboratory  
 PSS 3303 Soils  
 PSS 3433 Horticulture Internship  
 PSS 4343 Greenhouse Management  
 PSS 4353 Arboriculture & Landscape Maintenance  
 PSS 4363 Nursery Management  
 PSS 4444 Plant Tissue Culture  
 PSS 4613 Floriculture Crop Programming  
 12 hours See advisor for list of Restricted Electives

**Restricted Electives (select 12 hours from following)**

- ABE 2263 Ag Surveying and Drainage  
 AEC 3413 Principles Ag Marketing  
 BCH 3613 Elementary Biochemistry  
 BIO 3304 General Microbiology  
 BIO 4204 Plant Anatomy  
 BIO 4213 Plant Ecology  
 BIO 4404 Environmental Microbiology  
 EPP 4163 Plant Disease Management  
 EPP 4263 Principles Insect Pest Management  
 FLS 2133 Spanish III  
 FLS 2143 Spanish IV  
 MKT 3013 Principles of Marketing  
 MKT 3213 Retailing  
 PSS 3133 Intro to Weed Science  
 PSS 3343 Advanced Floral Design I  
 PSS 4453 Vegetable Production  
 PSS 4143 Advanced Fruit Science  
 PSS 4503 Plant Breeding  
 PSS 4313 Soil Fertility  
 PSS 4414 Turf Management  
 PSS 3023 Retail Floristry Management  
 PSS 3043 Fruit Science

**Total hours needed for major: 132**



**Retail Floristry Management Concentration**

Major Advisors: Associate Professor James DelPrince  
Instructor Lynette McDougald

Retail Floristry Management (RFM) blends business, horticultural science, and design disciplines to prepare graduates for careers in the floral industry. Career options include floral designing, store management, shop ownership, freelance designing, product development, display work, and floral consulting. RFM students have the opportunity to work in and manage a professional flower shop owned by the department on the MSU campus.

**Internship Requirements (PSS 3413):** RFM majors must complete a 12 week, 480 clock hour work experience in a floral industry enterprise. The internship requirement may be completed any semester after successful completion of PSS 2343, Floral Design.

ACC 2023	Principles of Managerial Accounting
ART 1113	Art Appreciation
ART 1123	Design I
CH 1211	Investigations in Chemistry*
EC 2113	Principles of Macroeconomics
EC 2123	Principles of Microeconomics
BL 2413	The Legal Environment of Business
EPP 2213	Intro to Insects*
FIN 3113	Financial Systems
HS 2613	Introduction to Interior Environment
MGT 3113	Principles of Management
MKT 3013	Principles of Marketing
PS 1113	American Government
PSS 2351	Techniques in Flower Shop Mgt
PSS 3023	Retail Floristry Operation and Mgt
PSS 3343	Advanced Floral Design I
PSS 3413	Retail Floristry Internship
PSS 3443	Advanced Floral Design II
PSY 1013	General Psychology
9 hours	Select from Art Electives list
6 hours	Select from Business Electives list
6 hours	Select from Restricted Electives list
3 hours	Free Elective

**Art Electives (Choose 9 Hours)**

ART 1013	Art History I
ART 1023	Art History II
ART 1133	Design II
ART 1153	Three Dimensional Design
ART 1213	Drawing I
ART 1223	Drawing II
ART 1303	Ceramic Art I
ART 2013	Painting I
ART 2213	Life Drawing I
ART 2303	Printmaking
ART 2313	Ceramic Art II
ART 2403	Sculpture I

ART 3103	Photography I
ART 3153	African Art & Culture
ART 3423	Color Photography I
ART 3703	Jewelry/ Metals
ART 4133	Watercolor II
ART 4533	Ceramic Art III

**Business Electives (Choose 6 hours)**

EC 3333	Managerial Economics
FIN 3123	Financial Management
FIN 4223	Intermediate Financial Management
FIN 4233	Working Capital Management
IB 3913	Principles of International Business
MGT 3513	Intro to Human Resource Mgt
MGT 4543	Compensation Management
MKT 4113	Personal Selling
MKT 4123	Advertising
MKT 4413	Consumer Analysis Behavior
MKT 4613	Service Marketing
PHI 3013	Business Ethics

**Restricted Electives (Choose 6 hours)**

PSS 3043	Fruit Science
PSS 3303	Soils
PSS 4000	Directed Individual Study
PSS 4143	Advanced Fruit Science
PSS 4263	Viticulture
PSS 4343	Greenhouse Management
PSS 4353	Aboriculture & Landscape Maintenance
PSS 4363	Nursery Management
PSS 4444	Plant Tissue Culture
PSS 4453	Vegetable Production
PSS 4503	Plant Breeding
PSS 4613	Floriculture Crop Programming

\* Satisfies University CORE

**Total hours needed for major: 136**

**Department of POULTRY SCIENCE (PO)**

Major Advisor: Associate Professor Timothy N. Chamblee  
Office: 103 Hill Poultry Science

The U.S. Poultry Industry is a \$21 billion+ business employing hundreds of thousands of people in the United States. Mississippi ranks 4th in broiler production and is continuing to expand. This dynamic industry employs about 20,000 Mississippians and has approximately 3,000 poultry farming operations throughout the state. Poultry is the **Number 1** farm revenue commodity in Mississippi.

The Poultry curriculum provides for in-depth study of scientific principles important in the production, processing and marketing of poultry and poultry products. The curriculum is designed with academic and experiential components to ensure that graduates are prepared to manage people and resources vital to this important food industry. Poultry students should also expect to develop creative thinking skills that will allow them to develop solutions for complex real world problems as they develop their careers as managers. The strong science content of the curriculum also makes it an excellent fit for pre-vet students and students interested in graduate studies. The department provides one-on-one advising for all Poultry Science students. Concentrations available are:

- Business
- Management
- Manufacturing
- Pre-Veterinary Medicine

**Only grades of C or higher will be accepted for courses with the PO and VS prefixes.**

**POULTRY SCIENCE****University Core**

English Composition (6 hours)	
EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Mathematics (6 to 9 hours)	
MA 1313	College Algebra
MA/ST	3 hours (see major/concentration)

Science (6 to 9 hours)	
See major/concentration	
Humanities (6 hours)	
Select from University CORE	
Fine Arts (3 hours)	
Select from University CORE	
Social Sciences (6 hours)	
AEC 2713	Introduction to Agriculture Economics
PS 1113	American Government

**Major Core**

ACC 2013	Principles of Financial Accounting
BIO 1203	Plant Biology
BIO 3304	General Microbiology
BL 2413	Legal Environment of Business
MGT 3113	Principles of Management

MGT 3513	Intro to Human Resource Mgt	PO 4513	Poultry Processing
PO 3011	Seminar	PO 4523	Commercial Broiler Processing Tech
PO 3021	Seminar	PO 4833	Poultry Anatomy
PO 3103	Genetics	PO 4843	Poultry Physiology
PO 3313	Commercial Poultry Production	VS 2033	Diseases of Poultry
PO 3333	Advanced Poultry Judging		
PO 4031	Seminar	Writing Requirement (3 hours)	
PO 4041	Seminar	AIS 3203	Intro to Technical Writing in Agricomm
PO 4313	Management of Commercial Layers	Computer Literacy (3 hours)	
PO 4323	Management of Broiler Breeders	AEC 1223	Computer Applications for Agriculturists and Life Scientists
PO 4333	Broiler Production		
PO 4413	Poultry Nutrition		
PO 4423	Feed Manufacturing		

### Management Option

The management option is appropriate for students interested in entering into a personal poultry operation, in service and sales work with large poultry enterprises, in federal, state or local government employment, and in many employment opportunities in the allied fields relating to poultry.

ACC 2023	Principles of Managerial Accounting	MKT 4113	Personal Selling
AEC 3133	Introductory Agribusiness Management	PO 3323	Poultry Judging
BIO 1123	Animal Biology	PSS 3303	Soils
CH 1043	General Chemistry	ST 2113	Statistics for Behavioral Sciences
CH 1053	General Chemistry		
FIN 3003	Personal Money Management		
MKT 3013	Principles of Marketing		

**Total hours needed for major: 128**

### Business Option

The rapid growth in poultry production in Mississippi has created a large demand for graduates with good backgrounds in poultry and strong supporting work in business. Thus, the business option elective offers lucrative employment opportunities to the poultry science major.

ACC 2023	Principles of Managerial Accounting	MKT 4113	Personal Selling
AEC 3133	Introductory Agribusiness Management	MKT 3413	Production Management
BIO 1123	Animal Biology	PO 3323	Poultry Judging
CH 1043	General Chemistry	ST 2113	Statistics for Behavioral Sciences
CH 1053	General Chemistry		
EC 2113	Principles of Macroeconomics		
MKT 3013	Principles of Marketing		

**Total hours needed for major: 128**

### Manufacturing Option

The future growth of the poultry industry is closely associated with advancements in manufacturing technology. There is a large demand for well trained poultry scientists with this capability. This option elective offers rapid career advancement for the poultry science major and prepares the student for future graduate work.

BCH 3613	Elementary Biochemistry	FST 4164	Quality Assurance of Food Products
BIO 1023	Plants and Humans	FST 4243	Composition and Chemical Reactions of Foods
CH 1211	Investigations in Chemistry	FST 4414	Microbiology of Foods
CH 1213	Fundamentals of Chemistry	HS 4223	Human Nutrition
CH 1221	Investigations in Chemistry	ST 3113	Intro to Statistical Inference
CH 1223	Fundamentals of Chemistry		
CH 4513	Organic Chemistry		
CH 4523	Organic Chemistry		
FST 2112	Food Products Evaluation		

**Total hours needed for major: 134**

### Pre-Veterinary Option:

The Pre-Veterinary option allows a student to satisfy the pre-veterinary requirements while completing a B.S. in Poultry Science. The Poultry Science Department offers a 3 + 1 program for admission to the College of Veterinary Medicine. Contact the Poultry Science Department for these requirements.

BCH 3613	Elementary Biochemistry	CH 4513	Organic Chemistry
BIO 1504	Principles of Zoology	MKT 3013	Principles of Marketing
BIO 2103	Cell Biology	PH 1113	General Physics
CH 1211	Investigations in Chemistry	ST 3113	Intro to Statistical Inference
CH 1221	Investigations in Chemistry	VS 3014	Anatomy and Physiology
CH 1213	Fundamentals of Chemistry		
CH 1223	Fundamentals of Chemistry		
CH 4511	Organic Chemistry Laboratory		

**Total hours needed for major: 129**

## INTERDISCIPLINARY CURRICULUMS

### FOOD SCIENCE and TECHNOLOGY AN INTERDEPARTMENTAL CURRICULUM

A student may work toward a Master of Science or a Doctor of Philosophy degree in Food Science and Technology by selecting FST courses which are provided by the Animal and Dairy Sciences, Poultry Science, Life Sciences, Horticulture, or Food Science and Technology Departments. The Food Science and Technology program involves staff members and facilities of the cooperating departments plus supporting work in other departments such as biochemistry, microbiology, statistics, computer science, etc. A Bachelor of Science in food science and technology will be considered to meet the pre-requisites for study toward an advanced degree. Students from other disciplines will be required to take leveling courses not to exceed 15 semester hours. To secure additional information, write or call the Head of the Department of Food Science and Technology, Mississippi State University, Mississippi State, MS 39762. Phone 662/325-3200.

#### Food Science & Technology Committee

Charles H. White, Coordinator  
Thomas G. Althen  
Russell Bazemore  
L. H. Chen  
T. C. Chen  
D. N. Downer  
Z. Haque

#### Department

Food Science & Tech  
Animal and Dairy Sci  
Food Science & Tech  
Ag & Bio Engineering  
Poultry Science  
Biological Sciences  
Food Science & Tech

Anna Hood

Larry Lane

Douglas L. Marshall  
Robert W. Rogers

Juan Silva

Extension Food Tech,  
Food and Fiber Center  
Sr Research Chemist,  
Chemical Laboratory  
Food Science & Tech  
Animal and Dairy Sci/  
Food Science & Tech  
Food Science & Tech

Robert P. Wilson

Bio Chemistry and  
Molecular Biology**NUTRITION PROGRAM  
AN INTERDISCIPLINARY CURRICULUM**

A student may work toward a Master of Science and/or a Doctor of Physiology degree in Nutrition by selecting courses in animal and dairy sciences, biochemistry and molecular biology, food science and technology, human sciences, poultry and wildlife and fisheries. The Nutrition program utilizes the staff members and facilities of these five departments, with supporting work in other departments.

A Bachelor of Science degree in agriculture, human sciences, biological or physical sciences will be considered as a prerequisite for receiving graduate credit for these courses. The students planning a major or minor in nutrition should use the NTR prefix for each course. Courses contributing to a major in nutrition are listed alphabetically under the symbol NTR in the Description of Courses section (Part III) of this catalog.

**Nutrition Committee**

R.P. Wilson, Coordinator  
Louis R. D'Abramo  
Michael E. Boyd  
Sylvia Byrd  
Wanda L. Dodson  
Wayne A. Frank  
A. Wayne Groce

**Department**

BCH and Mol Bio  
Wildlife & Fisheries  
Animal and Dairy Sci  
Human Sciences  
Human Sciences  
Animal and Dairy Sci  
College of Vet Med

Rebecca Kelly  
Michael T. Kidd  
Berry D. Lott  
Melissa Mixon  
Charlotte Oakley  
Brian J. Rude  
Terry R. Smith  
Yvonne Vizzier

Human Sciences  
Poultry Science  
Poultry Science  
Human Sciences  
Human Sciences  
Animal and Dairy Sci  
Animal and Dairy Sci  
Poultry Science

**ANIMAL PHYSIOLOGY PROGRAM  
AN INTERDISCIPLINARY CURRICULUM**

The graduate program in physiology is an interdisciplinary curriculum which utilizes the staff members and facilities available in the various participating departments. The student is offered the opportunity to work toward the M.S. degree and/or the Ph.D. in Physiology.

A student wishing to do graduate work in Physiology must be in an appropriate department, usually that of the major professor, and will be expected to complete graduate work in the same fashion as any other graduate student, even though his program is interdepartmental. Listed below are the faculty members who administer the Physiology program, and their departments. Students planning a major or minor in Physiology should use the PHY prefix for each course. Courses contributing to a major in Physiology are listed alphabetically under the symbol PHY in the Description of Courses section (Part III) of this catalog.

**Animal Physiology Committee**

Peter Ryan, Coordinator  
A. Jerald Ainsworth  
Thomas G. Althen  
J. A. Boyle  
Randal K. Buddington  
Howard Chambers  
Janice E. Chambers  
Timothy N. Chamblee  
Angelica Chapa  
Anita Kelly  
Terry E. Kiser,

**Department**

Animal and Dairy Sci  
College of Vet Med  
Animal and Dairy Sci  
BCH and Mol Biology  
Biological Sciences  
Entomology  
College of Vet Med  
Poultry Science  
Animal and Dairy Sci  
Wildlife and Fisheries  
Animal and Dairy Sci

Christopher D. McDaniel  
G. W. Morgan  
Molly Nicodemus  
E. David Peebles  
Terry R. Smith  
J. Paul Thaxton  
Rhoda Vann  
Scott Willard  
Allen Williams

Poultry Science  
Poultry Science  
Animal and Dairy Sci  
Poultry Science  
Animal and Dairy Sci  
Poultry Science  
Animal and Dairy Sci  
Animal and Dairy Sci  
Animal and Dairy Sci

Thesis research and dissertation credit will be scheduled in the department of the major professor.

**GENETICS****AN INTERDISCIPLINARY CURRICULUM**

An opportunity is offered to a student who wishes to work toward the M.S. degree in Genetics.\* The Genetics program is an interdisciplinary curriculum which utilizes the staff and facilities available in the various participating departments and colleges. A wide array of plant and animal material is available for genetic investigation. Listed below are the faculty members who administer the Genetics program and their departments.

The student's complete program will be formulated in the department of his/her choice. Listed below are the faculty members who administer the Genetics program and their departments. Students planning a major or minor in Genetics should use the GNS prefix for each course. A Bachelor of Science in the biological or physical sciences will be considered a prerequisite for receiving graduate credit for the courses listed in the catalog. Courses contributing to the major in Genetics are listed alphabetically under the symbol GNS in the Description of Courses section (Part III) of this catalog.

**Genetics Committee**

B. S. Baldwin  
M. E. Boyd  
J. A. Boyle  
M. A. Caprio  
R. G. Creech  
W. J. Diehl  
L.A. Hanson  
J. N. Jenkins  
S. B. Land  
D. S. Luthe  
Din-Pow Ma  
J. C. McCarty

**Department**

Plant & Soil Sciences  
Animal and Dairy Sci  
BCH and Mol Bio  
Entomology  
Plant and Soil Sci  
Biological Sciences  
Veterinary Medicine  
Plant & Soil Sciences  
Forestry  
BCH and Mol Bio  
BCH and Mol Bio  
Plant & Soil Sciences

G. A. Pederson  
E. David Peebles (coordinator)  
N. A. Reichert  
D. E. Rowe  
M. L. Salin  
P. G. Thompson  
T. P. Wallace  
C. E. Watson  
W. P. Williams  
D. A. Wise

Plant & Soil Sciences  
Poultry Science  
Plant & Soil Sciences  
Plant & Soil Sciences  
BCH and Mol Bio  
Plant & Soil Sciences  
Plant & Soil Sciences  
Plant & Soil Sciences  
Plant & Soil Sciences  
Plant & Soil Sciences  
Biological Sciences

\*The Ph.D. program has been suspended. Students should check with the Coordinator before making plans.

**GRADUATE BULLETIN**

For more information on graduate programs in agriculture, see the *Graduate Bulletin*. A copy may be secured by writing to Office of Graduate Studies, Mississippi State, Mississippi 39762.

## SCHOOL of ARCHITECTURE

JAMES L. WEST, Dean  
 MICHAEL FAZIO, Interim Associate Dean  
 Office: 240 Giles Architecture Building  
 Telephone: (662) 325-2202  
 Fax Number: (662) 325-8872  
 Mailing Address: Box AQ, Mississippi State, MS 39762

### GENERAL INFORMATION

The profession of architecture offers the student the opportunity to participate in improving the physical world, in solving problems of our society, and in giving form to the needs of modern culture. To meet these demands requires a highly trained profession composed of sensitive, dedicated men and women. The School of Architecture is the educational foundation of the profession in the State of Mississippi and provides for the development of the individual skills and understanding to prepare the student for his or her role in the practice of architecture.

The School of Architecture offers an intense, carefully structured, and rich array of courses which constitute a solid foundation for architectural practice. While course work is comprehensive in scope, providing the students with an awareness of the diversity and complexity of today's professional world, each course has its own important role in developing the unique knowledge and abilities required of architects in a modern world.

The School of Architecture at Mississippi State University is the professional school for the State of Mississippi and is the only program in the state which leads to a professional degree in architecture. To meet the needs of the state and region, the School was established in 1973 with the support of an Advisory Committee of the Mississippi Chapter of the American Institute of Architects.

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. Professional degree programs in architecture, recognizes two types of degrees: the Bachelor of Architecture and the Masters of Architecture. A program may be granted a five-year, a three-year, or a two-year term of accreditation, depending on its degree of conformance with established educational standards. The School of Architecture at Mississippi State University holds a five-year accreditation.

Information regarding the School of Architecture may be obtained from the School's website at [www.sarc.msstate.edu](http://www.sarc.msstate.edu).

### CURRICULUM

The curriculum is divided into three levels: the first-year level is defined as the pre-professional program; the second-, third-, and fourth-year levels compose the professional core; the fifth-year provides the transition to professional practice. The curriculum is composed of four areas of study representing: (1) History/Theory, (2) Management, (3) Design, (4) Technology:

1. **History/Theory** - composed of architectural history and philosophy, current architectural ideas and directions.
2. **Management** - representing the tools necessary to direct the processes of architecture, areas of economics, real estate, finance, promotion, land development, law, and office practice.
3. **Design** - concerned with the understanding of form, shape, and space responsive to human needs and programs, together with development of architectural communication skills.
4. **Technology** - providing basic knowledge in physical systems of structures, materials, construction and service systems of plumbing, electrical, heating and air conditioning.

The fifth-year is a unique experience and is located in downtown Jackson, MS. It offers the student the opportunity to develop depth and expertise. The city provides a major resource for the activities and a laboratory for continued study. Professionals involved in all areas of the built environment contribute to the teaching; weekly field trips are scheduled to building and manufacturing sites. Research and design projects are focused on the city. This unique experience provides a transition from the academic foundation to the professional realities of architecture.

At the completion of the fifth year, the students will receive the professional degree of Bachelor of Architecture.

### ADMISSIONS

Admission to the School of Architecture is limited and highly competitive. Prospective students should communicate with the School of Architecture to request current information, and if possible, arrange for a tour of facilities and admissions advisement.

The School of Architecture admits applicants under one of three categories of admission. All three require completing a general application to the University; followed by the filing of a special Supplementary Application Form and other materials required by the School of Architecture. The three categories of admissions are as follows:

1. **Full Admission** with the opportunity to begin freshman architectural design studio in the fall term. (This category is only open to new freshman with very strong abilities. Since selection of the majority of this group will be announced by March, initial application should be made before January 15th. A limited number of places will be held for late applicants with exceptional abilities).

2. **Pre-Architecture** admission is generally granted to students acceptable to the University but who applied late or have not qualified for "full admission" to the School of Architecture. (Pre-architecture students are enrolled in the School of Architecture and complete all required freshman courses except freshman architectural design studios. At such time as all required freshman courses are completed, and if the overall college GPA is a minimum 2.5, pre-architecture students may apply to take freshman design studios in the summer term. Entrance to design studios is highly competitive, on a space available basis, and is not automatic. All transfer students from other disciplines or other colleges or universities are considered "pre-architecture" students. Admission to summer design studios requires a special application process which must be initiated prior to February 15 and also requires submission of portfolio type materials. Admission is highly selective).

3. **Accelerated Studies** admission is a special category for incoming students who hold 4 year undergraduate degrees in other fields. Application must be made prior to February 15 and is similar to the pre-architecture application to summer design studios. The "accelerated studies" program begins with admission to summer design studios and requires 35 consecutive months to complete the professional degree. Demonstrated abilities in mathematics, physics, and freehand drawing are expected. Admission is highly selective.

Students may receive transfer credit for non-professional courses completed at other universities, colleges, and community colleges, provided a grade of C or better is received for each course. Transfers from other architecture schools are not encouraged. No transfer credit will be given for courses listed as technical, vocational, or architectural. A student may receive six hours of Reserve Officers' Training Corps (ROTC) credit.

Each prospective student is urged to contact the Director of Admissions of the School of Architecture to discuss his/her individual program development through the curriculum. Students intending to spend one year at a community college should seek academic advice from the School of Architecture prior to beginning the community college.

The School of Architecture also offers a Master of Science in Architecture degree with a specialization in computer graphics visualization. The degree program is appropriate for 1) students from various design fields who can demonstrate a high level of creative accomplishment, experience with digital media, and an ability to master computer programming; or 2) students with a mastery of computer programming, including such languages as C++, Autolisp, and Java, and substantial course work or experience in a design field; or 3) students with specialized backgrounds in such fields as archaeology and anthropology who wish to use design visualization as a means of scientific inquiry. The Master's program is not a professional degree and does not lead to Architectural registration. Interested students should consult the Director of the Graduate Program.

### FINANCES

Costs for an architectural education are somewhat higher than in other disciplines. In addition to standard costs of fees, tuition, room, board, books, etc, an architectural student must buy required drawing equipment and materials for drawings and models during the school year. This can add \$400 or so per year. Additionally, at least one major field trip is required each year. Charges for field trip expenses are collected with tuition and currently range from \$350 in first year to \$550 in fourth year. These charges are intended to cover transportation and lodging during field trips. These fees are not refundable after the first day of classes. Students should expect to purchase a laptop computer in their second year, selected from a range of models approved by the School.

A number of small scholarship opportunities as well as design competitions and awards are available to students within the School of Architec-

ture's design programs. Normal MSU Scholarships are available to in-state and out-of-state students. Inquiries for financial aid or assistance should be sent directly to the MSU Office of Student Financial Aid and Scholarships.

### COUNSELING

Once accepted into the Design Studio courses, students are required to maintain at least an MSU 2.00 cumulative quality point average to remain in design courses. At the end of the first year, a student must have completed all required courses in order to enter the second year, and at the end of the senior year, a student must have completed all required courses in order to advance to the fifth year. Any student who receives a grade of D or lower for two sequential design courses must repeat both of these courses and receive a grade of C or higher in both courses in order to advance in the program, or receive the Bachelor of Architecture degree. If a studio course is failed, a grade of C must be received to advance in the program, or receive the Bachelor of Architecture degree.

### ACCELERATED STUDIES

A special program is available for graduates of other disciplines. The Accelerated Studies candidate must apply to the School of Architecture prior to February 15 and, if accepted, may expect to begin studies in a summer term and to complete the program in three years, including work during the summer terms (see admissions, paragraph #3).

### Curriculum in Architecture

#### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 to 9 hours)

MA 1313 College Algebra\*  
MA 1323 Trigonometry\*  
MA 1463 Finite Mathematics and Intro to Calculus **or**  
MA 1613 Calculus for Business and Life Sciences I

Science (6 to 9 hours)

PH 1113 General Physics  
PH 1123 General Physics

Humanities (6 hours) Choose from below:

HI 1063 Early U.S. History  
HI 1073 Modern U.S. History  
HI 1213 Early Western World  
HI 1223 Modern Western World

Fine Arts (3 hours)

ARC 2313 History of Architecture I

Social Sciences (6 hours)

See University CORE

#### College Core

EN 3223 Writing for Architects

#### Major Core

ARC 1536 Architecture Design I-A\*\*  
ART 1213 Drawing I  
ARC 1546 Architectural Design I-B  
ART 1223 Drawing II\*\*\*  
ARC 2536 Architectural Design II-A  
ARC 2713 Passive Building Systems

### SMALL TOWN CENTER

From its inception the School has made small town problems and the solutions to these problems one of its foremost concerns. The Small Town Center was created in 1979 to formalize this commitment. The Center seeks to initiate theoretical and applied research and to serve as a national focus for the collection, storage, dissemination, and application of information pertinent to small town issues.

For further information write to the Director of the Small Town Center, P.O. Box AQ, Mississippi State, MS 39762.

### JACKSON COMMUNITY DESIGN CENTER

The Jackson Community Design Center is a laboratory professional design office whose mission is to support urban revitalization of Jackson's urban living and working environments. The Design Center provides research, design, planning, and technical assistance to individuals and associations that are working to make a viable, safe and healthy urban environment. The Design Center undertakes large and small scale projects and research which serve the community at large or benefit individuals who are socially, economically, or physically disadvantaged. The Design Center conducts public educational programs and sponsors visiting lectures and other Continuing Education Programs.

For further information, contact the Director of the Jackson Community Design Center, (662-354-6480)

Approved Electives (6 hrs)\*\*\*\*

ARC 2546 Architectural Design II-B  
ARC 2313 History of Architecture I  
ARC 2723 Materials  
ARC 3536 Architectural Design III-A  
ARC 3313 History of Architecture II  
ARC 3713 Assemblages  
ARC 3904 Architectural Structures I  
ARC 3546 Architectural Design III-B  
ARC 3323 History of Architecture III  
ARC 3723 Active Building Systems  
ARC 3913 Structures II  
ARC 4536 Architectural Design IV-A  
ARC 4733 Site Planning for Architects  
ARC 4903 Structures III  
ARC 4546 Architectural Design IV-B  
ARC 4313 Architectural Theory  
ARC 5576 Architectural Design V-A  
ARC 5443 Thesis Programming  
ARC 5623 Studies in Theory and Practice of Urban Design  
ARC 5733 Process  
ARC 5589 Architectural Thesis V-B  
ARC 5353 Philosophy of Architecture  
ARC 5383 Legal Aspects of Architecture  
ARC 5493 Architectural Practice  
ARC Elective (3 hours)  
Fifth Year Elective (3 hours)

### Total hours needed for major: 160

\* Prospective students with composite ACT of 24 in Mathematics are excused from College Algebra. Those with a "B" or better in a full semester high school trigonometry course may be excused from College Trigonometry. Others should take these courses at MSU or a community college in the summer prior to beginning studies in Architecture. Math placement tests are available from the School of Architecture.

\*\* Pre-architecture, transfer students, and accelerated-studies students take ARC 1536 and ARC 1546 in the summer following completion of all freshman required courses. Special application must be made by February 15 prior to summer design. Admission is highly selective and on a space available basis.

\*\*\* This course is required if a student receives a grade of "C" or lower in ART 1213 Freehand Drawing I.

\*\*\*\* The new curriculum requires a student to take three (3) electives between his/her second and fourth year. At least one must be an architectural elective. The remaining electives must be selected from the current School of Architecture Approved Electives List.

## COLLEGE of ARTS and SCIENCES

PHILIP B. OLDHAM, Interim Dean  
 Gary Myers, Interim Associate Dean  
 Office: 208 Allen Hall  
 Telephone: (662) 325-2646  
 Mailing Address: Box AS, Mississippi State, MS 39762

### GENERAL INFORMATION

The College of Arts and Sciences provides the fundamental training needed by all persons who wish to become college graduates. Students in all undergraduate schools and colleges in the University take more than half their courses during the first two years in the College of Arts and Sciences. In addition, the College provides pre-professional curricula for students who take their professional training elsewhere. Thus, pre-medical, pre-dental, pre-pharmacy, pre-law, pre-ministerial, pre-optometry, medical records administration, pre-nursing, and physical therapy training is available within the College of Arts and Sciences. Medical and dental students completing required courses are eligible for consideration of a B.S. degree from Mississippi State after one year in the professional school.

Majors are offered in the following: anthropology, art, biological sciences, chemistry, communication, economics, English, foreign languages, general liberal arts, general science, geoscience, history, international business, mathematics, medical technology, microbiology, physics, political science, philosophy, psychology, sociology, and social work.

Students who are undecided about a specific curriculum should select the Undeclared category. Advisors are available to assist these students in developing their educational and career goals. A student is permitted to delay a decision as to a field of concentration for one year.

Minors are available in the following: aerospace studies, anthropology, art, biological sciences, chemistry, communication, English, foreign languages, geography, geology, geoscience, history, mathematics, philosophy, physics, political science, psychology, religion, sociology and statistics.

In addition to these majors and minors, courses are offered in Air Force ROTC, archaeology, Army ROTC, corrections, gerontology, and women's studies. Information concerning these offerings can be found in this section of the catalog.

### MISSION

The educational mission of the College of Arts and Sciences is two-fold: to provide students with a liberal education which will facilitate intellectual development and stimulate a life-long pursuit of knowledge, and to give students an in-depth education in at least one specialized area necessary to prepare them for a career or for advanced study.

The College offers curricula in the fine arts, the humanities, the sciences and the social sciences. These curricula are designed to introduce students to the basic methods of inquiry in diverse disciplines, to develop their analytical abilities, to improve their skills in writing and speaking, and to broaden their perspectives on humanity and culture in the natural and technological worlds. Additionally, they provide intensive preparation in one or more academic disciplines.

A liberal education attained in this context should ensure that graduates of the College have gained an understanding and appreciation of human culture. They should have examined the social, historical, political, philosophical and economic dimensions of the human condition and mankind's perception of the world as it is expressed through the fine arts, language, and literature. They should have learned the use of quantitative and scientific methods and should have participated in the universal quest to comprehend natural phenomena and to utilize this knowledge beneficially and ethically.

### ADVISING

The student is assigned an advisor as soon as he or she enters the College of Arts and Sciences and should maintain contact with that advisor throughout the university affiliation. The advisor will assist the student in developing a course of study and will serve as a resource person to deal with academic problems and student needs.

### DEGREES

The College of Arts and Sciences offers four degrees: the Bachelor of Arts, the Bachelor of Social Work, the Bachelor of Fine Arts, and the Bachelor of Science. All B.A., B.S., B.F.A., and B.S.W. students take a common set of requirements consisting of 25-29 semester credit hours in basic skills, 9-10 semester credit hours in natural sciences, 6 semester credit hours each in humanities and social sciences, and 3 semester credit hours in fine arts, computer literacy, and a junior/senior level writing

course. The B.A. and B.S.W. curriculum requires 12 additional semester credit hours each in humanities and social sciences. The requirements for all four degrees as well as the curricula for specific areas of study are described below. For a description of the B.F.A. requirements, please see the entry under the Department of Art. Details for B.S.W. degree requirements are listed under Social Work.

In order to qualify for a second bachelor's degree at Mississippi State University, the candidate must meet the following requirements: (1) The student must satisfy all course requirements for the degree sought; and (2) The student must satisfy residency requirements at Mississippi State University after the first degree has been conferred. The major department from which the second degree is sought shall determine completion of requirements.

### COLLEGE REQUIREMENTS for ALL A&S DEGREES

The College of Arts and Sciences has identified graduation requirements which must be satisfied by all students pursuing degrees conferred by the College. Furthermore, these requirements (listed immediately below) must be satisfied from a list of courses approved by the College. These approved courses are taken from a longer list of courses satisfying University Core requirements which can be found in the front pages of this *Bulletin*. However, majors in the College of Arts and Sciences must be aware that there are numerous courses on the University Core list which are not on the College approved list. Copies of the College courses approved list are available both from the Dean's Office and from advisors.

### BACHELOR of ARTS DEGREES and REQUIREMENTS

A Bachelor of Arts degree is offered in the following areas: anthropology, chemistry, communication, economics, English, foreign languages, general liberal arts, history, mathematics, philosophy, political science, psychology, and sociology. The Bachelor of Social Work is offered in Social Work and follows the same basic regulations as the B.A. degree except that courses must be taken in proper sequence and a minimum of 130 hours is required.

The liberal arts include certain basic academic disciplines that contribute to the development of intelligent, moral beings. Over the centuries various subjects have at one time or another been spoken of as "liberal arts," but the objective of liberal-arts training has remained unchanged. Whether students major in liberal arts or whether they merely take a few basic courses in that field, the liberal arts will enable them to develop those fundamental habits of good citizenship and cultural awareness which are expected of all members of our society.

The curriculum in liberal arts at Mississippi State University is intended to provide:

1. a broad educational experience in the liberal arts, regardless of professional objectives;
2. adequate preparation for admission to professional schools and graduate schools in the liberal arts disciplines;
3. specialized training of a professional or pre-professional nature, as offered by the several liberal-arts departments.

### BACHELOR of ARTS CURRICULA

A minimum of 128 credit hours is required in all B.A. programs, 32 of which must be upper-division (3000-level or higher) Arts and Sciences credits.

In most departmental majors, the curricular requirements are sufficiently flexible to allow a student in liberal arts to select his or her departmental major at any time during the freshman or sophomore year. Whenever a student has made a decision as to a departmental major, whether it be at the beginning of the freshman year or later, he or she will be assigned to a major advisor in that department. If a student has not decided upon a major field, he or she should register as an Undecided student and take courses in the common curriculum which will prepare him or her for a subsequent shift into a departmental major.

### BACHELOR of SCIENCE DEGREES and REQUIREMENTS

A Bachelor of Science degree is offered in the following areas: biological sciences, chemistry, general science, geoscience, mathematics, medical technology, microbiology, physics and psychology.

The Bachelor of Science degree is awarded:

- (1) on the completion of not fewer than 136 semester credit hours of study including 32 upper-division Arts & Sciences approved credits and the common curricula for Arts & Sciences (carrying 272 quality points) approved by the dean and an official advisor.
- (2) on the completion of at least 102 semester credit hours (carrying two quality points for each credit hour) of approved study (not fewer than 32 semester hours of upper-division courses in residence at Mississippi State University) and on presentation through the dean or registrar of an approved school of medicine, dentistry, or medical technology of a certificate of the satisfactory completion of all courses in the first year of professional study.
- (3) on the transfer of satisfactory credits from other institutions, provided the candidate, during at least one academic year in actual residence, receives 32 credits in upper-division courses in the College of Arts and Sciences.

### GRADUATION REQUIREMENTS in the COLLEGE

Arts and Sciences majors **are responsible** both for **knowing** the graduation requirements associated with their degree program and for **keeping track** of their own progress toward graduation. Faculty advisors are available to offer students informed answers to their questions and, during registration, to review and approve their course schedules. In addition to the graduation requirements outlined above, students pursuing majors in the College of Arts and Sciences need to be aware of a number of special requirements having to do with graduation.

- (1) **Senior Check sheets:** College seniors who have completed 90 or more semester hours (including 'S' hours) must meet with their advisors and complete a Senior Check sheet or they will be unable to register for courses. A completed Senior Check sheet allows a student to determine which graduation requirements are not completed at the time the Check sheet is filled out; this then allows the student to identify those remaining courses he/she still needs to pass in order to graduate. A Senior Check sheet cannot be completed until all transfer course work and/or independent study is on record with the Office of the Registrar.
- (2) **Total Hours Passed:** EN 0103, Basic English, and MA 0103, Fundamentals of Algebra, do **not** satisfy any graduation requirements: they do **not** count toward the English composition and mathematics graduation requirements, **nor** can they be counted as electives. However, the University routinely reports credit earned in EN 0103 and MA 0103 on student grade reports and includes the grades earned in those courses in the student's QPA. This means that the total "hours passed" listed on grade reports **exaggerates** the number of hours passed **which apply toward the student's degree**.
- (3) **Independent Study:** Arts and Sciences majors are expected to take courses on the Mississippi State University campus when possible. If the desired courses are **not** offered, or if special circumstances exist, students may receive permission from the Dean to take courses through independent study. Hours earned through independent study will **not** apply toward upper-division residency requirements.
- (4) **CLEP Credit:** The College does **not** allow graduation requirements in English Composition, literature, or Public Speaking to be satisfied by the awarding of CLEP credit.

### ENGLISH and FOREIGN LANGUAGES REQUIREMENTS

The English and foreign language requirements apply to all Arts and Sciences students. Since departments have the authority to require specific foreign languages for their majors, students must become familiar with the language required by their individual major. The foreign language requirement is ordinarily satisfied:

- (1) by proving competency in any foreign language (including one's native language, if other than English) in a test administered by the Department of Foreign Languages or a national testing service;
- (2) by successfully completing a single upper-division course beyond the fourth semester in one's native language (if other than English) at MSU;

- (3) by taking two years of one foreign language in high school and successfully completing the third and fourth semesters of that language at MSU;
- (4) by taking three years of one foreign language in high school and successfully completing the fourth semester of that language at MSU;
- (5) by successfully completing 14 semester credits (or equivalent) in a foreign language.

**Students For Whom English is a Second Language.** Students for whom English is a second language must fulfill the English and foreign language requirements as stated in this bulletin. Most majors allow these students to use their native languages to fulfill the foreign language requirement. But students planning to use their native languages in order to satisfy the foreign language requirement are urged to check with their major department to determine if that language is acceptable to the department. As far as the College of Arts and Sciences is concerned, students may use their native language to satisfy the foreign language requirement provided that:

- (1) the language is a recognized mode of communication in conducting official business in a given country and taught in the primary and secondary schools of the country (regional languages and dialects do not qualify as official languages);
- (2) the Department of Foreign Languages has the expertise to administer a test in the language, or, where such expertise is not available, the student takes the initiative to take a test in the language from those administered through the National Testing Service, or by another certifiable agency;
- (3) the language meets specific departmental requirements.

In English, a maximum of 12 semester hours total of English as a Second Language (ESL) and freshman composition courses (including the required EN 1103 and EN 1113) may be counted for graduation. Proper placement of international students from ESL courses into English composition courses is important to students' academic success.

International students with a TOEFL score of 525 or higher should be placed in EN 1103. If their TOEFL score is 475-500, they should be placed in EN 1133; if their TOEFL score is 501-524, they should be placed in EN 1143. Once EN 1143 is passed, such students should be placed in EN 1103.

### PRE-PROFESSIONAL CURRICULA

The College offers appropriate curricula for students who plan to enter schools of dentistry, law, medicine, theology, nursing, optometry, pharmacy, and physical therapy. These are described with the departmental entries in the following pages.

### TEACHER EDUCATION

Please see the appropriate departmental entry or advisor for information on major programs which can incorporate courses for certification. It is especially important for students desiring certification to consult with their advisors before choosing options in required categories, like the natural sciences, or electives.

Students seeking secondary school teaching certification must complete phases II-IV of the Teacher Education program. (See "Admission Procedures in the College of Education")

The Mississippi State Department of Education provides an alternate route to certification to individuals who hold a baccalaureate or higher degree from a regionally accredited institution of higher education and have achieved a score at or above the 51st percentile, based on the 1983 norms, on each part of the core battery and the specialty area of the NTE. An individual who meets the two above requirements may, upon proper application, receive a provisional certificate for one year. The provisional certificate will allow the holder to seek a teaching job. Additional information is available from the Dean of Arts and Sciences, the Dean of Education, and the Mississippi State Department of Education.

### ARTS & SCIENCES CORE

In order to satisfy College graduation requirements, students seeking B.A., B.S., B.F.A., or B.S.W. Degrees must take the number of courses indicated in each of the areas below. By satisfying these College requirements, students will simultaneously satisfy all analogous University Core requirements.

B.A. and B.S.W. students must complete twelve hours in Humanities and twelve hours in Social Sciences in addition to the two courses in the Humanities and Social Sciences required of all majors. Hence, a student must complete a total of 18 hours in the Humanities (EN, HI, PHI, REL), AND 18 hours in the Social Sciences (AN, CO, EC, GR, PS, PSY, SO).

These additional 24 hours are not limited to the courses listed which follow; they may be satisfied by others in EN, PHI, and REL or in AN, EC, GR, PS, PSY, SO as long as they satisfy the distribution requirements for the major.

While all of the courses below satisfy college-wide requirements, individual departments may require that particular courses in each area be taken to satisfy requirements for their majors.

NOTE: Courses listed on the same line, separated by "or" cannot be taken in combination. Students will not receive credit in Arts & Sciences for two courses which are listed on the same line.

**Basic Skills**

English Composition (6 hours)

EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication  
 (Air Force ROTC students may substitute AS 3013 and AS 3023.)

Foreign Language

4 semesters One Foreign Language (1113 **or** 1114, 1123 **or**  
 1124, 2133, and 2143)

**Fine Arts (one course required)**

ARC 1013 Architectural Appreciation  
 ARC 2313 History of Architecture I  
 ARC 3313 History of Architecture II  
 ARC 3323 History of Architecture III  
 ART 1013 Art History I  
 ART 1023 Art History II  
 ART 1113 Art Appreciation **or**  
 ART 1193 Honors Art Appreciation  
 ART 3143 Italian Renaissance in Art History  
 CO 1503 Intro to Theatre  
 MU 2213 History and Literature of Music I  
 MU 2323 History and Literature of Music II  
 MU 1113 Music Appreciation  
 PE 1123 History and Appreciation of Dance

**Humanities (EN, HI, REL, PHI)**

B.S., B.F.A., and B.S.W. degrees require one EN and one HI from the core listing.

B.A. and B.S.W. require one PHI course plus 3 other humanities (not necessarily on the following list). These three courses should cover at least two areas.)

EN 2203 Intro to Literature (Not applicable if EN 1183 or 1193 taken)  
 EN 2213 English Literature **or**  
 EN 2383 Honors English Literature I  
 EN 2223 English Literature **or**  
 EN 2393 Honors English Literature II  
 EN 2243 American Literature I  
 EN 2253 American Literature II  
 EN 2273 World Literature I  
 EN 2283 World Literature II  
 HI 1063 Early U.S. History  
 HI 1073 Modern U.S. History  
 HI 1083 Problems in American Civilization  
 HI 1163 World History Before 1500  
 HI 1173 World History Since 1500  
 HI 1183 Problems in Modern World Civilization  
 HI 1213 Early Western World  
 HI 1223 Modern Western World  
 HI 3813 Modern Latin America

B.A. and B.S.W. majors must take at least 1 PHI course.

PHI 1103 Intro to Philosophy **or**  
 PHI 1183 Honors Intro to Philosophy  
 PHI 1113 Intro to Logic  
 PHI 1123 Intro to Ethics **or**  
 PHI 1193 Honors in Ethics  
 PHI 3023 History of Western Philosophy: Part I  
 PHI 3033 History of Western Philosophy: Part II  
 PHI 3013 Business Ethics  
 PHI 2133 Intro to Aesthetics  
 REL 1103 Intro to Religion  
 REL 3213 World Religion: Part I  
 REL 3223 World Religion: Part II

**Social and Behavioral Sciences**

(B.S. and B.F.A. - two courses in different disciplines.

B.A. and B.S.W. - courses spread over at least 4 disciplines, max Of 1 in EC, max of 2 in each remaining discipline. Of the six, only Two required to be from the listing.)

AN 1103 Intro to Anthropology **or**  
 AN 1193 Honors Intro Anthropology  
 AN 1343 Intro To Biological Anthropology  
 AN 1143 Intro Cultural Anthropology  
 AN 1543 Intro Archaeology  
 CO 1223 Intro to Communication Theory  
 CO 1403 Intro to Mass Media  
 EC 2113 Principles of Macroeconomics **or**  
 EC 2183 Honors Macroeconomics  
 EC 2123 Princ Microecon **or** EC 2193 Honors Microecon

GR 1123 Intro to World Geography  
 GR 2013 Cultural Geography  
 GR 3113 Conservation of Natural Resources  
 GR 4123 Urban Geography  
 GR 4203 Geography of North America  
 PS 1113 American Government **or**  
 PS 1193 Honors in American Government  
 PS 1313 Intro to International Relations **or**  
 PS 1393 Honors International Relations  
 PS 1513 Comparative Government **or**  
 PS 1593 Honors Comparative Government  
 PS 2713 Politics of the American Bureaucracy  
 PSY 1013 General Psychology **or**  
 PSY 1093 Honors Psychology  
 PSY 2513 Psychology of Adjustment  
 PSY 3073 Psychology of Interpersonal Relations  
 SO 1003 Intro to Sociology **or**  
 SO 1093 Honors Intro to Sociology  
 SO 1103 Contemporary Social Problems  
 SO 1203 Marriage and Family

**Computer Literacy**

One 3 hour course required. Consult advisor.

**Mathematics & Statistics**

Either 2 courses required or one MA course at the level of MA 1463 or higher.

MA 1313 College Algebra **or**  
 MA 1303 Quantitative Reasoning  
 MA 1323 Trigonometry  
 MA 1463 Finite Math  
 MA 1613 Calculus for Business and Life Sciences I  
 MA 1713 Calculus I **or**  
 MA 1763 Honors Calculus I  
 MA 1623 Calculus for Business and Life Science II **or**  
 MA 1723 Calculus II **or**  
 MA 1773 Honors Calculus II  
 MA 2733 Calculus III **or**  
 MA 2783 Honors Calculus III  
 MA 2743 Calculus IV **or**  
 MA 2793 Honors Calculus IV  
 MA 3113 Introduction to Linear Algebra  
 ST 2113 Statistics for the Behavioral Sciences **or**  
 ST 3113 Introduction to Statistical Inference

**Natural Sciences**

3 courses required, 2 with labs. B.A., B.S.W., and B.F.A. Majors must take 1 lab course in the Life Sciences BIO or EPP and 1 in the Physical Sciences CH, GG, GR, PH.

BIO 1004 Anatomy and Physiology  
 BIO 1033 Biological Sciences **or**  
 BIO 1023 Plants and Humans **or**  
 BIO 1123 Animal Biology  
 BIO 1203 Plant Biology **or**  
 BIO 1023 Plants and Humans  
 BIO 1504 Principles of Zoology **or**  
 BIO 1123 Animal Biology  
 BIO 3103 Genetics I **or equivalent**  
 BIO 3304 Parasitology  
 CH 1043 Chemistry **or**  
 CH 1213 Fundamentals of Chemistry  
 CH 1053 General Chemistry **or**  
 CH 1223 Fundamentals of Chemistry **or**  
 CH 1293 Honors in Chemistry  
 CH 1051 Experimental Chemistry  
 CH 1211 Investigations in Chemistry  
 CH 1221 Investigations in Chemistry  
 EPP 4154 General Entomology  
 GG 1111 Earth Science I Lab  
 GG 1113 Survey of Earth Science I  
 GG 1121 Earth Science II Lab  
 GG 1123 Intro to World Geography  
 GR 1114 Elements of Physical Geography  
 PH 1041 Physics Laboratory  
 PH 1042 Physics of Sound and Music  
 PH 1011 Physical Laboratory I  
 PH 1063 Descriptive Astronomy  
 PH 1021 Physical Science Lab 2  
 PH 1013 Physical Science Survey I  
 PH 1023 Physical Science Survey II  
 PH 1113 General Physics **or**  
 PH 2213 Physics I **or** PH 2283 Honors Physics I  
 PH 1123 General Physics  
 PH 2223 Physics II  
 PH 1133 General Physics  
 PH 2223 Physics II **or** PH 2293 Honors Physics II

**Junior/Senior Writing**

3 hours Consult advisor for selections.



**ANTHROPOLOGY (AN)**

See the Department of SOCIOLOGY, ANTHROPOLOGY, and SOCIAL WORK

**ARCHAEOLOGY**

See the Department of SOCIOLOGY, ANTHROPOLOGY, and SOCIAL WORK

**Department of ART (ART)**

Professors: Bartlett, Funderburk, Gootee, Mixon and Seckinger;  
Associate Professors: Chupa, DeMarche (head) and Long  
Assistant Professors: Elsea, Haupt, Livingston, McCourt, Miller, Ngoh and Runnells;  
Instructor: Luck; Lecturers: Pagilaro, Poole, Sewell,  
and Stelioes-Wills;  
102 Freeman

**Mission**

The Department of Art's primary undergraduate responsibilities include the following: the education of professional artists with emphasis in graphic design and fine arts; the preparation of students for a career or advanced study; the serving of the University with electives and required art courses; and the provision of an active art gallery to serve the University, the community, and region.

**Bachelor of Fine Arts**

The Bachelor of Fine Arts (BFA) degree is a professional studio degree. The BFA degree is earned after successful completion of an intensive, 4.5-5.5 year program that provides the student with a series of in-depth studio experiences leading to thesis/senior presentation balanced by studies in humanities, communication, mathematics, and sciences.

The BFA degree may also serve as a preparation for graduate studies - usually the Master of Fine Arts (MFA) degree in studio art or design.

**Emphasis**

In the Bachelor of Fine Arts degree, a student may choose an emphasis in Graphic Design or in Fine Art. In Fine Art the student must select either ceramics, painting/drawing, photography, printmaking, sculpture or a double emphasis.

**Program Requirements: "A Program of Excellence"**

Adapted in 1998, the Department of Art recognizes Art major students within "A Program of Excellence" in the University by successful completion of the *Foundation Portfolio Review* (FPR) and continued high academic performance in emphasis courses.

Art major students must earn a grade of "C" or higher in each studio and art history course in the BFA program. (A "D" or "F" would require a repeat of the course until a "C" or higher is attained.) Art major students must earn a grade of "B" or higher in each studio emphasis course, or retake the course until a grade of "B" or higher is attained. (These requirements also apply to all transfer courses submitted for consideration.)

**Transfer Requirements**

After successful admission to the University, and before application to the Foundation Portfolio Review, transfer students must arrange for a meeting with the Department's transfer credit committee chair in order to articulate art studio and history credits. This meeting requires the presentation of a comprehensive portfolio of artwork completed in studio courses, as well as course descriptions (and in some cases, syllabi) from classes completed for credit at other institutions. This meeting should take place as soon as possible after admission, but no later than the preregistration advising period of the first semester at MSU. The MSU Department of Art reserves the right to deny or accept transfer courses as applicable to the BFA degree based on portfolio evaluation.

**Foundation Portfolio Review Requirements**

All art majors are required to present at the *Foundation Portfolio Review* for sophomores and transfer students. Students may enter emphasis courses (Graphic Design I, Painting II, Printmaking II, Sculpture II, Ceramics II, Photography II) only after successfully completing the *Foundation Portfolio Review*. The review is a student presentation and faculty evaluation of a minimum of 18 credit hours completed in studio art (Drawing I, Drawing II, Design I, Design II, 3-D Design, and Intro to Computing for Art/Design). The *Foundation Portfolio Review* will result in a "pass" or "non-pass" into emphasis. The student who "passes" (by faculty evaluation) may begin the emphasis sequence of courses. A student who receives a "non-pass" evaluation may remain in the art program, and may resubmit a portfolio in the *Foundation Portfolio Review* that is offered the next year after the "non-pass" evaluation. (A student who receives a "non-pass" twice may continue to take non-emphasis art courses but will not enter an emphasis area and therefore cannot pursue the BFA degree in Art).

The *Foundation Portfolio Review* is held during December of each year. Due to enrollment demand and limits in resources and classroom space, it must be noted that only the top students will be selected, after review, into the Graphic Design program of emphasis. (The usual acceptance rate is about 75% of those applying.)

**Senior Presentation Requirements**

Senior graphic design students are required to present a portfolio and senior fine arts students are required to present an exhibition as degree requirements. These final presentation requirements are fulfilled in capstone courses; ART 4643 Advanced Graphics for students in the Graphic Design emphasis; and ART 4083 Senior Honors Research/ART 4093 Senior Honors Thesis for students in the Fine Art emphasis.

**Computer and Equipment Requirements in the Graphic Design and Photography Emphases**

The Department of Art requires incoming (post review) BFA Art majors with an emphasis in Graphic Design or Photography to purchase certain tools and equipment.

The Graphic Design emphasis student is required to purchase a computer after successfully passing the *Foundation Portfolio Review*, usually in the sophomore year, and before enrolling in ART 3313 Graphic Design I. Art faculty will prepare an approved list of current software and minimum computer specifications each year.

The Photography emphasis student is required to purchase a camera and, in the digital photography option, a computer, after passing the *Foundation Portfolio Review*, usually in the sophomore year, and before enrolling in ART 4203 Photography II. Art faculty will prepare an approved list of specific cameras and minimum computer specifications each year.

Financial aid that includes this requirement may be available by contacting the MSU Student Financial Aid and Scholarship office.

**Student Materials Fee**

Additional fees associated with class materials, technology and laboratory materials are required of students. These range from \$10 to \$100 per course.

**Art Minor**

A minor in art shall consist of ART 1123 Design I, ART 1133 Design II (or ART 1223 Drawing II), ART 1213 Drawing I, and at least nine (9) hours in art courses above the 2000 level.

**Accreditation**

Mississippi State University is an accredited institutional member of the National Association of Schools of Art and Design.

**Graduate Studies**

The Department also offers a Master of Fine Arts (MFA) degree in Electronic Visualization, with emphasis in either animation or multimedia.

**Bachelor of Fine Arts****Fine Arts Emphasis and Graphic Design Emphasis****University and College Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language (see advisor)

Humanities (6 hours)

3 hours Literature - See University CORE  
3 hours History - See University CORE

Math (6 hours)

MA 1313 College Algebra  
3 hours See A&S Listing

Fine Arts (3 hours)

3 hours see note\*

Social Sciences (6 hours)\*\*

See A&S listing

Natural Sciences (9-12 hours)

See major courses - Consult advisor for specifics

Writing Requirement (3 hours)

ART 3603 Modern Art Writing (see Art History and Theory Program)

**Fine Arts Emphasis****Major Core**

(Photography, Printmaking, Painting/Drawing, Sculpture, or

Ceramics)

Student should check prerequisites for all courses. Consult advisor.

**Foundation Program (18 hours)**

ART 1123 Design I  
ART 1133 Design II  
ART 1153 3-D Design  
ART 1213 Drawing I  
ART 1223 Drawing II

Computer Literacy Requirement

ART 2803 Intro to Computing Art/Design

The Foundation Portfolio Review is required after successful completion of the Foundation Program.

**Survey Program (21 hours)**

ART 1303 Ceramic Art I  
ART 2013 Painting I  
ART 2213 Life Drawing I  
ART 2303 Printmaking I  
ART 2403 Sculpture I

ART 3103 Photography I

ART 3803 Gallery Management

**Art History and Theory Program (12 hours)**

ART 1003 The Idea of Art  
ART 1013 Art History I  
ART 1023 Art History II  
3 hours Art History Elective  
(ART 3603 Modern Art Writing - listed under University and College Core)

**Emphasis Program (27 hours)**

Approved Art studio courses in concentration area including capstone courses:

ART 4083 Senior Honors Research

ART 4093 Senior Honors Thesis  
(Senior exhibit required.)

**Art Studio Electives (12 hours)**

ART 2233 Drawing III **or**  
ART 2223 Life Drawing II  
9 hours Approved Art studio electives

**Total hours needed for major: 143**

**Graphic Design Emphasis****Major Core****Foundation Program (18 hours)**

ART 1123 Design I  
ART 1133 Design II  
ART 1153 3-D Design  
ART 1213 Drawing I  
ART 1223 Drawing II

Computer Literacy Requirement

ART 2803 Intro to Computing Art/Design

The Foundation Portfolio Review is required after successful completion of the Foundation Program.

**Survey Program (15 hours)**

ART 2013 Painting I  
ART 2213 Life Drawing I  
ART 2303 Printmaking I  
ART 2403 Sculpture I  
ART 3103 Photography I

**Art History and Theory Program (12 hours)**

ART 1003 The Idea of Art  
ART 1013 Art History I  
ART 1023 Art History II  
3 hours Art History Elective  
(ART 3603 Modern Art Writing - listed under University and College Core)

**Art Studio Program (18 hours)**

ART 3313 Graphic Design I

ART 3323 Graphic Design II

ART 3423 Color Photography I

ART 4103 Typography I

ART 4403 Advertising Design I

ART 4643 Advanced Studio - Graphic Design

**Emphasis Studio Electives (15 hours)**

Must be selected from this list or by consent of Emphasis Director.

ART 3443 Illustration

ART 3873 Digital Photography

ART 4113 Typography II

ART 4203 Photography II

ART 4413 Advertising Design II

ART 4523 Internship in Graphic Design

ART 4813 Multimedia I

ART 4833 Computer Animation I

ART 4843 Computer Animation II

ART 4863 Advanced Studio- Computer Art  
(Animation III)

**Art Studio Electives (12 hours)**

12 hours Approved Art studio electives

**Total hours needed for major: 143**

\* Art majors satisfy the fine art requirement by taking any one of the following courses: ART 1013, ART 1023, or ART 3143.

\*\* Must be from 2 different areas and must be selected from University CORE. CO 1403 Intro to Mass Media recommended for Art majors.

## Department of BIOLOGICAL SCIENCES (BIO) (MDT) (MIC)

The biological sciences encompass the three basic sub-disciplines of biology: botany, microbiology and zoology. The curricula of the major areas of concentration are designed to provide the student with a broad academic base while offering valuable practical experiences in laboratory and field situations.

The biology curriculum contains a nucleus of basic courses that present unifying principles, and advanced courses in either botany or zoology. Botany may be defined as a scientific study of plants. It is the basic science of all applied fields of work having to do with plants, such as agronomy, forestry, horticulture, plant breeding and plant pathology. Zoology is a basic science of all work having to do with animals such as taxonomy, ecology, physiology.

Microbiology is the study of living microscopic and submicroscopic organisms which are of importance to mankind. Majors in microbiology are prepared to work in food processing plants, plant or animal disease control agencies, pharmaceutical companies, quality control positions, the industrial fermentation industry, and basic research in cell and molecular biology.

Majors offered in the department are the B.S. in Biological Sciences, B.S. in Medical Technology, B.S. in Microbiology, M.S. in Biological Sciences, and the Ph.D. in Biological Sciences.

A senior research thesis in the biological sciences is available to outstanding students. A description of the program and application materials may be obtained from the department office.

### BIOLOGICAL SCIENCES (BIO)

Curriculum (136 hours)

Major Advisors: Professor Walter Diehl

Office: 104 Harned Hall

Associate Professor Giselle Thibaudeau

Office: 323 Harned Hall

#### University and College Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language (see advisor)

Humanities (6 hours)

3 hours Literature  
3 hours History

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1323 Trigonometry

Fine Arts (3 hours)

See A&S Listing

Natural Sciences (9-12 hours)

See Major Core - Consult Advisor for specifics

Social Sciences (6 hours)

Must be from 2 different areas - see A&S listing

#### Major Core - Biology (20 hours)

BIO 1203 Plant Biology  
BIO 1504 Principles of Zoology  
BIO 3304 General Microbiology  
BIO 3103 Genetics I **or**  
BIO 4103 Exper Genetics  
BIO 2103 Cell Biology

Jr./Sr. Writing Requirement

BIO 3013 Writing for Biologist

Computer Literacy Requirement

3 hours See advisor

#### Biology Area Courses - minimum 6 hours in each area

(Three Biology area courses must include a laboratory.)

Molecules and Cells

BIO 4103 Exp Genetics (if not used in Core)  
BIO 4423 Immunology  
BIO 4433 Prin Virology  
BIO 4504 Embryology  
BIO 4503 Histology  
BCH 4603 General Biochemistry  
BCH 4613 General Biochemistry

Anatomy and Physiology

BIO 4204 Plant Anatomy  
BIO 4214 General Plant Physiology  
BIO 3504 Comparative Anatomy

BIO 4514 Animal Physiology

Organisms ( one animal and one plant recommended)

BIO 2203 Dendrology  
BIO 2213 Survey of Plant & Fungi  
BIO 3303 Parasitology  
BIO 4203 Taxonomy of Spermatophytes  
BIO 4223 Freshwater Algae  
BIO 3514 Invertebrate Zoology  
BIO 3524 Biology of Vertebrates  
BIO 4163 Bryology  
BIO 4513 Ichthyology  
BIO 4523 Mammalogy  
BIO 4543 Ornithology

Ecology and Evolution

BIO 3104 Ecology  
BIO 4113 Evolutionary Biology  
BIO 4213 Plant Ecology  
BIO 4533 Animal Behavior

Life Science Elective (10 hours)\*\* consult advisor

Physical Science & Math Core (26 hours)

CH 1213 Fundamentals Chemistry  
CH 1223 Fundamentals Chemistry  
CH 1211 Invest Chemistry  
CH 1221 Invest Chemistry  
CH 4513 Organic Chemistry  
CH 4523 Organic Chemistry  
PH 1113 General Physics  
PH 1123 General Physics **or**  
PH 1133 General Physics  
MA 1313 College Algebra  
MA 1323 Trigonometry

#### Total hours need for major: 136

NOTE: The following courses may not be used to meet the above science requirements: BIO 1053, BIO 1033/1001, BIO 1003, BIO 1023, BIO 1053, BIO 1004, BIO 2004, BIO 2014, VS 2014\*, BCH 3613\*

\* Courses may be used if student receives both Vet and Bio Science Degree.

\*\* Hours in excess of 24 hours from area courses may be deducted from elective hours. Life Science electives may be taken in other Departments but must be courses for respective "majors".

College and University CORE restrictions: The following courses may not be used to meet the above science requirements: BIO 1053, BIO 1033/1001, BIO 1003, BIO 1023, BIO 1053, BIO 1004, BIO 2004, BIO 2014, VS 2014<sup>1</sup>, BCH 3613<sup>1</sup>

<sup>1</sup> Courses may be used if student receives both Vet and Bio Science degrees.

#### Minor in Biological Sciences (28 hours)

CH 1213 Fundamentals Chemistry  
CH 1223 Fundamentals Chemistry  
CH 1211 Invest Chemistry  
CH 1221 Invest Chemistry  
17 hours Biology Core (less BIO 3013)  
4 hours One course from Area above

**MICROBIOLOGY (MIC)**

Major Advisors: Professors Frank Champlin  
Office: 127 Harned Hall  
Professor Karen Coats  
Office: 113 Harned Hall

**B.S. Degree in Microbiology****University and College Core**

English Composition (6 hours)  
EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)  
CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
4 semesters one Foreign Language (see advisor)

Humanities (6 hours)  
3 hours Literature - see A&S listing  
3 hours History - see A&S listing

Mathematics (6 hours)  
MA 1313 College Algebra  
MA 1323 Trigonometry

Fine Arts (3 hours)  
See A&S Listing

Natural Sciences (9-12 hours)  
See Major Core - Consult Advisor for specifics

Social Sciences (6 hours)  
Must be from 2 different areas

**Major Core**  
BIO 3304 General Microbiology  
BIO 3404 Bacterial Cultivation  
BIO 4405 Pathogenic Microbiology  
BIO 4413 Immunology  
BIO 4433 Virology  
BIO 4443 Bacterial Genetics  
BIO 4463 Bacterial Physiology  
6 hours Applied Microbiology Electives

Jr./Sr. Writing Requirement  
BIO 3013 Writing for Biologist

Computer Literacy Requirement  
3 hours See advisor

**Departmental Core**

BIO 1203 Plant Biology  
BIO 1504 Prin Zoology  
BIO 2103 Cell Biology

Additional department requirements  
CH 1213 Fundamentals Chemistry  
CH 1223 Fundamentals Chemistry  
CH 1211 Invest Chemistry  
CH 1221 Invest Chemistry  
CH 4513 Organic Chemistry  
CH 4523 Organic Chemistry  
CH 4511 Laboratory  
CH 4521 Laboratory  
PH 1113 General Physics  
PH 1123 General Physics **or**  
PH 1133 General Physics  
BCH 3613 Elementary Biochemistry **or**  
BCH 4603 General Biochemistry **or**  
BCH 4613 General Biochemistry

**Total hours needed for major: 136****General Electives**

Applied microbiology courses are strongly recommended, regardless of the department in which they are offered (for example, Food Micro, Environmental Micro, or Soil Micro). Upper division courses in MDT or BCH are also acceptable. BIO 2004 (Human Anatomy), and BIO 2014 (Human Physiology), BIO 3504 (Comparative Anatomy) and BIO 4502 (Toxicology) are also acceptable. Hours in excess of 6 will reduce the general electives requirement by an equal number. Students planning to attend professional schools should check with the faculty advisor for that program to identify additional courses that may be needed. Such courses can be taken for general elective credit.

For career track, BCH 3613 and 20 hours of general electives are required. For the pre-professional/graduate track, BCH 4603/4613 and 17 hours of general electives are required.

Students desiring a minor must take General Micro, Bacterial Cultivation, Pathogenic Micro, and elective microbiology courses to total no less than 19 total hours of microbiology course work.

\* These are representative subject-area requirements/recommendations for which other courses may qualify. See your advisor for details.

**MEDICAL TECHNOLOGY (MEDT)**

Major Advisor: Associate Professor Carol Williams  
Office: 102 Harned Biology Building

Medical technologists are prepared for positions in hospital laboratories, clinics, research laboratories, the Public Health Service industry, and in various local, state and federal health organizations.

The medical technology curriculum leading to the Bachelor of Science degree from Mississippi State University includes three years of study at Mississippi State University and one year of study in a hospital School of Medical Technology accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Admission to the hospital school is competitive. A student who has satisfactorily completed the three years on the campus and has gained admission to a hospital school will register for the hospital phase and will be considered to be enrolled at Mississippi State during the final year of study. Graduates are prepared for certification by several national agencies.

**B. S. in Medical Technology****University and College Core**

English Composition (6 hours)  
EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)  
CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
4 semesters one Foreign Language (see advisor)

Humanities (6 hours)  
3 hours Literature - see A&S listing  
3 hours History - see A&S listing

Mathematics (6 hours)  
MA 1313 College Algebra  
MA 1323 Trigonometry

Fine Arts (3 hours)  
See A&S Listing

Natural Sciences (9-12 hours)  
See Major Core - Consult Advisor for specifics

Social Sciences (6 hours)  
Must be from 2 different areas - See University CORE

**Major Core**

BIO 1504 Principles of Zoology  
BIO 1301 Perspectives in Med Tech  
BIO 3304 General Microbiology  
BIO 3303 Parasitology  
BIO 4304 Quantitative Methods I  
BIO 4405 Pathogenic Microbiology  
BIO 3013 Writing for Biologists\*  
BIO 4303 Bioinstrumentation

BIO 4314	Quantitative Methods II
BIO 4413	Immunology
BIO 4618	Clinical Chemistry
BIO 4614	Serology/Immunology
BIO 4608	Hematology
BIO 4602	Urinalysis
BIO 4612	Special Topics
BIO 4616	Immunohematology
BIO 4606	Clinical Microbiology
BCH 3613	Biochemistry
CH 1213	Fundamentals of Chemistry

CH 1211	Chemistry Lab
CH 1223	Fundamentals of Chemistry
CH 1221	Chemistry Lab
CH 4513	Organic Chemistry
CH 4523	Organic Chemistry
13 hours	General and Science Electives

**Total hours need for major: 136**

\* Fulfills Jr./Sr. Writing Requirement.

(In affiliated hospital schools of Medical Technology, admission is on a competitive basis.)

### Program Consultants in Cooperating Hospitals

Mississippi State University maintains close contact with the teaching personnel in medical technology at a number of hospitals in the area. The following act as program consultants.

Gary Benson, MD, Director, Mississippi Baptist Medical Center, Jackson, MS 39202  
 Ishak Enggano, MD, Director, North Mississippi Medical Center, Tupelo, MS 38801  
 Lee Montgomery, MT(ASCP), Program Director, North Mississippi Medical Center, Tupelo, MS 38801  
 David Head, MD, Director, Vanderbilt University, Nashville, TN 37235  
 Maralie G. Exton, MT(ASCP), PhD, Program Coordinator, Vanderbilt University, Nashville, TN 37235  
 James Williams, MD, Director, University of Southern Miss., Hattiesburg, MS  
 Jane Hudson, MT (ASCP), Ph.D., Program Director, University of Southern Miss., Hattiesburg, MS.

### BROADCASTING

See Department of COMMUNICATION

### Department of CHEMISTRY (CH)

Major Advisors: Professors Bill McMahan and Svein Saebo  
 Associate Professor: David Wipf  
 118 Hand Chemical Laboratory

Chemistry is concerned with the properties and compositions of substances and the transformations which they undergo. Because chemistry is a basic science to many careers, three undergraduate degree programs are offered to provide the needed flexibility for majors. These degrees are the B.S. (ACS), B.S., and the B.A. degrees. A minimum of 136 hours is required for the B.S. degree and 128 hours for the B.A. degree. The department also offers the M.S. and the Ph.D. graduate degrees. Students in other majors may earn a minor in Chemistry by achieving at least a 2.00 average in a total of 22 hours of chemistry with 14 of the hours in upper-division courses and a minimum of 11 of the total hours completed at MSU.

The American Chemical Society (ACS) has continually approved the department and its curriculum since 1941, and awards a certificate to students who complete the B.S. (ACS) program. The B.S. (ACS) program is primarily intended as preparatory for graduate study in chemistry leading to a career in basic research. Graduates could also go directly into research and development positions in industry.

The B.S. (non ACS) program has more flexibility than the B.S. (ACS) program and the choices of electives are based upon the career choice. Chemistry advisors can help students choose the proper electives for different careers.

The B.A. degree program has a stronger liberal arts emphasis and could serve as a preparation for a secondary teaching career, chemical sales, or further study in a professional school.

### B.S. in Chemistry (A.C.S. Certification)

#### University and College Core

English Composition (6 hours)

EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I

EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II

Public Speaking (3 hours)

CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language (see advisor)

Humanities (6 hours)

3 hours	Literature - see A&S listing
3 hours	History - see A&S listing

Mathematics (6 hours)

MA 1713	Calculus I
MA 1723	Calculus II

Fine Arts (3 hours)

See A&S Listing

Natural Sciences (9-12 hours)

See Major Core - Consult Advisor for specifics

Social Sciences (6 hours)

Must be from 2 different areas and must be selected from University CORE

#### Major Core

Student should check for prerequisites for all courses. See advisor.

CH 1213	Fundamentals of Chemistry
CH 1211	Lab
CH 1223	Fundamentals of Chemistry
CH 1221	Lab

CH 2314	Quant Inorganic Analysis
CH 3213	Inorganic Chemistry
CH 4000	Directed Ind Study (3 hours)
CH 4212	Advanced Inorganic Lab
CH 4213	Advanced Inorganic Chemistry
CH 4351	Inst Analysis Lab
CH 4353	Instrumental Analysis
CH 4413	Physical Chemistry I
CH 4411	Lab
CH 4423	Physical Chemistry II
CH 4421	Lab
CH 4513	Organic Chemistry
CH 4511	Lab
CH 4523	Organic Chemistry
CH 4521	Lab
PH 2213	Physics I
PH 2223	Physics II
PH 2233	Physics III
PH 3613	Modern Physics
MA 2733	Calculus III
MA 2743	Calculus IV
MA 3253	Differential Equations
6 hours	Chemistry Electives*

Writing Requirement (3 hours)  
 CH 4103 Chemistry Lit

Computer Literacy (3 hours)  
 Consult Advisor

Technical Electives (6 hours)  
 Advisor approved courses

General Electives

Number of credit hours needed to bring the total number of Credit hours to 136. Consult advisor.

**Total hours needed for major: 136**

\* Advisor approved chemistry courses 3000-level and above.

**B.S. in Chemistry (without A.C.S. Certification)****University and College Core**

English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
 4 semesters one Foreign Language (see advisor)

Humanities (6 hours)  
 3 hours Literature - see A&S listing  
 3 hours History - see A&S listing

Mathematics (6 hours)  
 MA 1713 Calculus I  
 MA 1723 Calculus II

Fine Arts (3 hours)  
 See A&S Listing

Natural Sciences (9-12 hours)  
 See Major Core - Consult Advisor for specifics

Social Sciences (6 hours)  
 Must be from 2 different areas and must be selected from University CORE

**Major Core**

Student should check for prerequisites for all courses. See advisor.

CH 1213 Fundamentals of Chemistry  
 CH 1211 Lab  
 CH 1223 Fundamentals of Chemistry  
 CH 1221 Lab  
 CH 2314 Quant Inorganic Analysis  
 CH 4351 Inst Analysis Lab  
 CH 4353 Instrumental Analysis  
 CH 4404 Biophysical Chemistry **or**  
 CH 4413 Physical Chemistry I  
 CH 4411 Lab  
 CH 4513 Organic Chemistry  
 CH 4511 Lab  
 CH 4523 Organic Chemistry  
 CH 4521 Lab  
 11 hours Chemistry Electives\*  
 PH 2213 Physics I  
 PH 2223 Physics II  
 PH 2233 Physics III

Writing Requirement (3 hours)  
 CH 4103 Chemistry Lit

Computer Literacy (3 hours)  
 Consult Advisor

Technical Electives (21 hours)  
 Advisor approved courses

General Electives  
 Number of credit hours needed to bring the total number of Credit hours to 136. Consult advisor.

**Total hours needed for major: 136**

\* Advisor approved chemistry courses 3000-level and above.

**B.S. in Chemistry  
Pre-Medical****University and College Core**

English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
 4 semesters one Foreign Language (see advisor)

Humanities (6 hours)  
 3 hours English Literature - see A&S listing  
 3 hours History - see A&S listing

Mathematics (6 hours)  
 MA 1713 Calculus I  
 MA 1723 Calculus II

Fine Arts (3 hours)  
 See A&S Listing

Natural Sciences (9-12 hours)  
 See Major Core - Consult Advisor for specifics

Social Sciences (6 hours)  
 PSY 1013 General Psychology  
 3 hours chosen from A&S listing

**Major Core**

Student should check for prerequisites for all courses. See advisor.

CH 1213 Fundamentals of Chemistry  
 CH 1211 Lab

CH 1223 Fundamentals of Chemistry  
 CH 1221 Lab  
 CH 2314 Quant Inorganic Analysis  
 CH 4353 Instrumental Analysis  
 CH 4404 Biochemical Chemistry  
 CH 4513 Organic Chemistry  
 CH 4511 Lab  
 CH 4523 Organic Chemistry  
 CH 4521 Lab  
 5 hours Chemistry Electives\*  
 BCH 4603 General Biochemistry I  
 BCH 4613 General Biochemistry II  
 PH 2213 Physics I  
 PH 2223 Physics II  
 PH 2233 Physics III  
 BIO 1504 Principles of Zoology  
 BIO 3103 Genetics I  
 BIO 3304 General Microbiology  
 BIO 3504 Comparative Anatomy  
 BIO 4504 Comparative Vertebrate Embryology

Writing Requirement (3 hours)  
 CH 4103 Chemistry Lit

Computer Literacy (3 hours)  
 Consult Advisor

Technical Elective (3 hours)  
 Advisor approved course

General Electives  
 Number of credit hours needed to bring the total number of Credit hours to 136. Consult advisor. (BIO 4514 & BIO 4413 are recommended)

**Total hours needed for major: 136**

\* Advisor approved chemistry courses 3000-level and above.

**B.A. in Chemistry****University and College Core**

English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
 4 semesters one Foreign Language (see advisor)

Humanities (15 hours)  
 3 hours Literature - see University CORE  
 3 hours History - see University CORE  
 9 hours Electives (Must be from 2 different areas) See A&S Core Listing



- Students must complete the departmental core with a minimum grade of C before enrolling in any CO course numbered 3000 or higher. The core consists of: CO 1003, CO 1223, CO 1403, and CO 1503.
- Incoming freshmen must earn a score of 20 or higher on the ACT Enhanced English sub-scale before entering the major. Students who believe that ACT does not accurately assess their language ability **and** who can present evidence of above average language skills (excellent English grades, extensive writing samples, etc.) will be given the opportunity to satisfactorily complete a screening test and gain admission to the major.
- No transfer student will be accepted who has not earned a minimum 2.0 GPA on all college work attempted prior to entering the major.

Prospective students are reminded that Communication is a language intensive discipline. Students with only minimal oral and written language competency should expect to be at a competitive disadvantage in classes as well as in careers after graduation. Transfer students with less than a C in English composition courses may have difficulty with the advanced writing courses required in this major.

### COMMUNICATION (CO)

#### University and College Core

English Composition (6 hours)	
EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Foreign Language (12-14 hours)	
4 semesters	one Foreign Language (see advisor)
Humanities (15 hours)	
3 hours	English Literature - see University CORE
3 hours	History - see University CORE
9 hours	Humanities Elective*
Philosophy Elective (3 hours)	
3 hours	Elective - See A&S listing
Math (6 hours)	
MA 1313	College Algebra
MA 1323	Trigonometry <b>or</b>
ST 2113	Statistics
Computer Literacy	
3 hours	See advisor
Fine Arts (3 hours)	

CO 1503	Intro to Theatre
Natural Sciences (9-12 hours)	
3-4 hours	Physical Science w/Lab**
3-4 hours	Biological Science w/Lab***
3-4 hours	Natural Science Elective****
Social Sciences (6 hours)	
PSY 1013	General Psychology
SO 1003	Intro to Sociology
Social Sciences Electives (12 hours)* +	
GR 1123	World Geography
6 hours	Electives* + +

#### Major Core

Student should check for prerequisites for all courses. Consult advisor or course descriptions in catalog.

CO 1223	Intro Communication Theory
CO 1403	Intro Mass Media

#### Concentration - See concentration areas

- \* Must be selected from 2 different areas. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 32 hours A&S UD requirement.
- \*\* CH, GG, or PH; see University CORE.
- \*\*\* BIO, EPP, or PO; see University CORE.
- \*\*\*\* Not required to be selected from core listing.
- \*+ Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 32 hours A&S UD requirement. Only one Economics allowed.
- \*+ + CO 1223 or CO 1403 will count as 3 additional Social Science hours to reach 12 hour elective total.

#### Broadcasting Concentration

CO 1423	History	CO 4313	Mass Media Law
CO 2413	Newsriting	CO 4323	Mass Media and Society
CO 2333	TV Production	6 hours	Upper Division CO electives - see advisor
CO 2313	Electronic Media <b>or</b>	9-14 hours	General electives*
CO 2343	Radio, TV, or Film Writing		
CO 3833	Interviewing		
CO 3333	Advanced TV Production		
CO 4373	TV Practicum		

#### Total hours needed for major: 128

- \* May need to be taken at Upper Division level to meet A&S UD requirement.

#### Communication Concentration

CO 2253	Interpersonal Communication	CO 4213	Political Comm
CO 2213	Small Group Communication	12 hours	Upper Division CO Electives - see advisor
CO 4203	Nonverbal Communication	12 hours	General Electives*
CO 4223	Advanced Comm Theory		
CO 4253	Persuasion		
CO 4243	Rhetorical Theory		
CO 4323	Mass Media & Society <b>or</b>		

#### Total hours needed for major: 128

- \* May need to be taken at Upper Division level to meet A&S UD requirement.

#### Journalism Concentration

CO1423	History of the Mass Media	CO 4403	Journalism Ethics
CO 2413	Newsriting	9 hours	Upper Division CO Electives - see advisor
CO 2423	News Editing	9-14 hours	General Electives*
CO 3403	Photography		
CO 3423	Feature Writing		
CO 4313	Mass Media Law		
CO 3443	Advanced Newsriting		

#### Total hours needed for major: 128

- \* May need to be taken at Upper Division level to meet A&S UD requirement.

#### Public Relations Concentration

CO 3803	Prin of Public Relations	CO 3823	Public Relations Copy & Layout
CO 2413	Newsriting	CO 4813	Public Relations in Organizations
CO 2213	Small Group Communication	CO 4253	Persuasion
CO 2333	TV Production <b>or</b>	CO 4313	Mass Media Law <b>or</b>
CO 3403	Photography	CO 4323	Mass Media & Society
CO 2343	Writing for Radio, TV & Film <b>or</b>	9-14 hours	General Electives*
CO 3423	Feature Writing <b>or</b>		
CO 2313	Newsriting for Electronic Media		
CO 3833	Interviewing		
CO 3813	Public Relations Case Problems		

#### Total hours needed for major: 128

- \* May need to be taken at Upper Division level to meet A&S UD requirement.



**Theatre Concentration**

CO 2013	Voice & Articulation
CO 2613	Oral Interpretation
CO 2503	Acting
CO 2524	Stagecraft & Lighting
CO 4504	History of Theatre
CO 2544	Makeup & Costume
CO 4524	Directing
CO 4573	Theatre Management

CO 4533	Advanced Acting
CO 4583	Playwriting
CO 1523	Practicum
5-10 hours	General Electives*

**Total hours needed for major: 128**

\* May need to be taken at Upper Division level to meet A&amp;S UD requirement.

**CRIMINAL JUSTICE and CORRECTIONS (COR)**

See Department of SOCIOLOGY, ANTHROPOLOGY, and SOCIAL WORK

**ECONOMICS (EC)**

Major Advisor: Charles Campbell  
Office: 326 McCool Hall  
Minor Advisor: Meghan Millea  
Office: 321 McCool Hall

Economics is the scientific study of how people and institutions make choices concerning the use of society's scarce resources. It is a broad social science that shares common interests with both the behavioral sciences (e.g. sociology and psychology) and the decision sciences (e.g. finance and management). The importance of economic analysis is recognized by being the only social science in which a Nobel Prize is awarded. Economics students receive training in the methods and uses of economic analysis as applied to households, businesses, and governments.

The study of economics offers students many career options. Economics majors are found pursuing careers in industry, trade, finance, law, government, and education. An economics major or minor also helps prepare the student for graduate professional training in business, public administration, and law. The flexibility of the economics major is reflected in relatively high starting salaries and lifetime earnings of economists. Undergraduates at Mississippi State may pursue an economics major through either the College of Arts and Sciences (B.A. degree) as described below or through the College of Business and Industry (B.B.A. degree). The business program in economics is described later in this Bulletin.

**Economics Major**

Students seeking the B.A. with a major in economics are required to complete all College of Arts and Sciences and University common and core requirements. Majors take the following mathematics sequence: MA 1313 College Algebra, MA 1613 Calculus for Business and Life Sciences I (MA 1713 Calculus I may be substituted), and ST 2113 Statistics for the Behavioral Sciences. Economics majors are required to take the Principles of Economics course sequence (EC 2113 and EC 2123), the Intermediate Economics course sequence (EC 3113 and EC 3123) and 15 hours of advanced electives. Elective courses should be chosen with the advisor's approval and used to enhance the student's overall program. Although not required, economics majors may elect to pursue a minor in another discipline with the advisor's approval.

**Economics Minor**

A minor in economics is attained by selecting, in consultation with the economics minor advisor, at least fifteen hours of economics course work. Three hours of courses from finance (FIN) or agricultural economics (AEC) may be applied to the economics minor with approval from the advisor. All economics minors must register with the economics minor advisor in the Department of Finance and Economics, 326 McCool Hall. Students with majors in business, engineering, agriculture, the social sciences, mathematics, and pre-law are especially encouraged to consider the economics minor.

**Advising and Honors Organization**

Academic advising and career counseling are available from the economics faculty for both majors and minors. Students interested in the study of economics should contact the Department of Finance and Economics, 326 McCool Hall. Any student who completes 12 credit hours of economics with at least a 3.0 GPA and has an overall GPA of 3.0 or higher is eligible for membership in Omicron Delta Epsilon, the international honor society in economics.

**ECONOMICS (EC)****University and College Core**

English Composition (6 hours)

EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I

EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II

Public Speaking (3 hours)

CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language (see advisor)

Humanities (15 hours)

3 hours	Literature - see University CORE
3 hours	History - see University CORE
9 hours	Humanities Elective*

Philosophy Elective (3 hours)

3 hours Elective

Math (6 hours)

MA 1613	Cal for Bus Life Sci I
ST 2113	Stats for Beh Sci

Fine Arts (3 hours)

3 hours See A&amp;S Core Listing

Natural Sciences (9-12 hours)

3-4 hours	Physical Science w/Lab**
3-4 hours	Biological Science w/Lab***
3-4 hours	Natural Science Elective****

Social Sciences (6 hours)

PS 1113	American Government
3 hours	Met in major requirement

Social Science Electives (12 hours)#

AN 1103	Intro to Anthropology
PSY 1013	General Psychology
PS 1513	Comparative Government
SO 1003	Intro to Sociology

**Major Core**

EC 2113	Prin of Macroeconomics
EC 2123	Prin of Microeconomics
EC 3113	Intermed Macroecon
EC 3123	Intermed Microecon
15 hours	EC Upper Division Electives

Writing Requirement (3 hours)

Met in major requirement

Computer Literacy

3 hours See advisor

General Electives (21 hours) See advisor

**Total hours needed for major: 128**

(32 hours must be 3000/4000 from A&amp;S)

\* Must be selected from 2 different areas. Not required to be selected from core listing; may have to be taken at Upper Division level to meet 32 hours A&amp;S UD requirement.

\*\* CH, GG, or PH; see University CORE.

\*\*\* BIO, EPP, or PO; see University CORE.

\*\*\*\* Consult advisor.

# Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

## Department of ENGLISH (EN)

Major Advisor: Linda Brasher

The study of English not only gives students knowledge of language and literature but also helps to develop their ability to read perceptively, think critically, analyze problems, and write correctly and persuasively. For this reason, a major in English has traditionally been viewed as good training for careers in law, government, business, and publishing, as well as for careers in teaching and writing.

The department offers an undergraduate major (B.A.), a minor in English, and an M.A.

The Department of English awards several scholarships annually: the Howell H. Gwin Scholarships to an outstanding junior majoring in English and to two entering graduate students in English; the George B. Nutt Scholarship to a freshman declaring an English major or to a sophomore or junior English major; the William H. Magruder Scholarship to an upper-division or graduate English major; and the Eugene Butler Creative Writing Scholarship to an undergraduate or graduate student. The Department of English sponsors Xi Kappa Chapter of Sigma Tau Delta National English Honor Society; memberships are offered by invitation to scholastically qualified junior and senior undergraduate students and to second-year graduate students who are English majors. The Department of English also sponsors a writing contest and a book-collecting contest and publishes annually *Winning Essays*, a collection of prize-winning freshman themes, and *The Jabberwock Review*, a student-edited collection of literature and art.

In addition to two semesters of freshman composition, which the department recommends be taken at the 1163/73 level or above, English majors take EN 2213, 2223, 3363 (or 2243 and 2253), 3413, and at least 21 additional hours of English electives, of which 15 hours must be at the 4000 level. English electives include courses satisfying the following group requirements:

Group I (one course): EN 4503, 4513, 4523, 4533, 4703, 4713

Group II (one course): EN 4643, 4653, 4723, 4733, 4863, 4883

Group III (two courses): EN 4333, 4343, 4903, 4913, 4923, 4933

Group IV (one additional course): to be taken from either Group I or Group II

No more than one experimental course may be counted toward fulfillment of the English elective requirements. For students who have taken EN 1163 or EN 1183, EN 2203 does not count toward fulfillment of the English elective requirements.

English majors should take HI 3743, History of England, in fulfilling the Arts and Sciences B.A. common curriculum requirements.

1. English majors must maintain at least a 2.5 QPA in all upper-division English courses. Students who fall below a 2.5 QPA must bring it up to 2.5 the next semester or drop the English major.
2. English majors must attain a C or better in all English courses at the 2000 level or above in order for those courses to count toward the requirements of the major.
3. English majors must take 15 hours at the 4000 level in residence at MSU.

Students seeking secondary-school teaching certification should consult with an English advisor.

English **minors** take at least 18 hours of English electives beyond completion of the freshman composition requirement of their major. Of these hours, at least six must be at the 4000 level, and taken in residence. Students should consult the English major advisor to plan a minor program which will complement their major studies and career interests.

### ENGLISH (EN)

#### University and College Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language (see advisor)

Humanities (6 hours)

3 hours Literature - see Major Core  
HI 3743 History of England  
HI 1063 Early U.S. History **or**  
HI 1163 World History Before 1500 **or**  
HI 1213 Early Western World

Philosophy Elective (3 hours)

3 hours see advisor

Humanities Electives (9 hours)

3 hours Literature - see Major Core  
HI 1073 Modern U.S. History **or**  
HI 1173 World History Since 1500 **or**  
HI 1223 Modern Western World

Math (6 hours)

MA 1313 College Algebra  
3 hours above College Algebra

Fine Arts (3 hours)

3 hours See A&S listing

Natural Sciences (9-12 hours)

3-4 hours Physical Science w/Lab\*  
3-4 hours Biological Science w/Lab\*\*  
3-4 hours Natural Science Elective\*\*\*

Social Sciences (18 hours)

6 hours see A&S Listing  
12 hours Social Sciences Electives\*\*\*\*

#### Major Core

EN 2213 English Literature I  
EN 2223 English Literature II  
EN 3363 American Literary History **or**  
EN 2243 American Literature I and  
EN 2253 American Literature II  
EN 4xxx Pre-1660 English Lit Elective  
EN 4xxx Post-1660 English Lit Elective  
EN 4xxx American Lit Elective  
EN 4xxx American or contemporary Lit Elective  
EN 4xxx English Lit Elective  
6 hours EN Electives

Jr.-Level Writing Requirement (3 hours)

EN 3413 Advanced Composition

Computer Literacy (3 hours)

Consult advisor

General Electives (21 hours)

Consult advisor

#### Total hours needed for major: 128

(Must maintain a 2.5 GPA in upper-division English courses. Must make a grade of C or higher in all upper-division English courses. Must complete 32 upper division A&S hours. Must take 15 hours at the 4000 level in residence.)

\* CH, GG, or PH; see University CORE.

\*\* BIO, EPP or PO; see University CORE.

\*\*\* Consult advisor.

\*\*\*\* Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

## Department of FOREIGN LANGUAGES (FL)

Major Advisor: Professor Edmond Emplaincourt (Head)

Associate Professor Robbins-Herring

Office: 300 Lee Hall 1

Foreign language majors prepare for careers in government (State Department, foreign service, diplomatic corps, FBI, CIA, USIA, the military, immigration, etc), international business, the human services fields, teaching at all levels (secondary school, junior college, university), and other language-related jobs.

Programs of study leading to the Bachelor of Arts (B.A.), the joint Bachelor of Arts and Bachelor of Business Administration, and the Master of Arts (M.A.) in Foreign Languages are offered. A minor in one foreign language may be obtained upon satisfactory completion of 10 semester hours beyond

the intermediate (III and IV) level courses. Education students desiring teacher certification must earn at least 27 semester hours in the language they plan to teach.

The Department sponsors three honor societies: Pi Delta Phi (French), Delta Phi Alpha (German), and Sigma Delta Pi (Spanish). Information about membership requirements may be obtained from the Head of the Department. The Department also sponsors language clubs which provide social and cultural activities for faculty and students.

The Bachelor of Arts in Foreign Languages is awarded upon the successful completion of a minimum of 128 semester hours, including the following areas: (The hours needed for graduation will depend upon the entry level of study into the major language; a minimum of six courses in the primary language at the 3000-level, or higher, is required.)

1. University CORE Requirements
2. Bachelor of Arts Common Requirements
3. FL 3203, FL 3313, FL 4013, or approved substitute(s).
4. 30 semester hours in the primary language (French, German, Latin, Russian, Spanish). The normal sequence is FLF/G/S I, II, III, IV, Advanced FLF/G/S I, Advanced FLF/G/S II, Survey FLF/G/S I, Survey FLF/G/S II, and 6 hours of upper-division electives in the primary language. A civilization course related to the primary language is strongly recommended.
5. Completion of the fourth semester course of a second foreign language (12-14 semester credit hours) is recommended.

Foreign Language majors interested in following this recommended course of study should notify the Department Head as soon as possible, so that a plan of study can be developed in which courses are taken in proper sequence.

### B.A. in Foreign Languages

#### University and College Core

English Composition (6 hours)

- EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

- EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

- 4 semesters one Foreign Language (see advisor)

Humanities (6 hours)

- 3 hours Literature - see University CORE  
 3 hours History - see University CORE

Philosophy Elective (3 hours)

- 3 hours see advisor

Humanities Electives (9 hours)\*

Math (6 hours)

- MA 1313 College Algebra  
 MA 1323 Trigonometry **or**  
 ST 2113 Stats for Beh Sci **or higher math**

Fine Arts (3 hours)

- See A&S Core listing.

Natural Sciences (9-12)

- 3-4 hours Physical Science w/Lab\*\*  
 3-4 hours Biological Science w/Lab\*\*\*  
 3-4 hours Natural Science Elective\*\*\*\*

Social Sciences (6 hours)

See A&S Listing

Social Sciences Electives (12 hours)\*+

#### Major Core

- FL 1114 Foreign Language I  
 FL 1124 Foreign Language II  
 FL 2133 Foreign Language III  
 FL 2143 Foreign Language IV  
 FLF/FLG 3114 **or** FLS 3111 & FLS 3113  
 FLF/FLG 3124 **or** FLS 3121 & FLS 3233  
 FL 3203 Intro to Hist and Appl Linguistics\*++  
 FL 4013 Major Themes of Movements\*++  
 FLF/FLG/FLS 3513  
 FLF/FLG/FLS 3523  
 Second Language 2133 - recommended  
 Second Language 2143 - recommended

Writing Requirement

- FL 3313 Composition

Computer Literacy (3 hours)

Consult advisor

General Elective (3 hours)

Consult advisor

#### Total hours needed for major: 128

\* Must be from 2 different area. See A&S Core listing.

\*\* CH, GG, or PH; see University CORE.

\*\*\* BIO, EPP, or PO; see University CORE.

\*\*\*\* Consult advisor.

\*+ Must be from 2 different areas and must cross 4 disciplines over the 18 hours.  
 Only one Economics allowed. See advisor.

\*++ Consult advisor for substitute.

### International Business Program

#### A Five-Year Double Degree Program:

#### B.A. in Foreign Languages &

#### B.B.A. in General Business Administration

John O. Lox, Director

International Business Academic Program Office  
 355-356 McCool Hall

Major Advisors, Business Administration:

Professor Capella; Associate Professor Addy

Assistant Professors Peyrefitte, Phelps, and Rezck

Major Advisors, Foreign Languages:

Professor Emplaincourt;

Associate Professors Jordan and Robbins-Herring;

Assistant Professor Lestrade

300 Lee Hall

The International Business Program provides students an academic background and work experience to help ensure success in the marketplace. Students receive a double degree at graduation reflecting the dual concentration in Arts & Sciences: B.A. (language and cultural proficiency); and in Business: BBA (with an international focus + a specific discipline like Marketing or Finance). This is in addition to the first two years of study developing abilities in writing, math, sciences, and computer literacy.

The hallmark of this program is a work internship, an outside the country work experience of a full summer or one semester duration (generally taken the last of the 4th year or beginning of the 5th year). This work is ideally reflective of the student's specific business discipline and language proficiency area. The student who selects to separate the work and abroad experience must petition the IB committee for approval. Minimum acceptable levels are 1). WORK: 10 continuous weeks of international tasks and responsibilities, 2) ABROAD: 6 continuous weeks in one location for cultural immersion. An International Business Co-Op Work program offers 3 semesters paid international work experience in concert with pursuing the academic degrees.

The total number of semester credit hours (SCH) will be 154 for most students. The program has five main components:

1. a core of basic skills, including courses in writing, mathematics, sciences, and communication (30 SCH, or 10 courses);
2. a core of humanities and social science courses selected to fit the special needs of international business majors, emphasizing both the history and culture of other societies and the ways these societies relate to our own (27 SCH, or 9 courses);
3. intensive training to develop proficiency in one foreign language and its associated cultures and literatures (37 SCH or 11 courses);

4. a thorough grounding in business techniques and practices, including 33 SCH of general business courses, 12 SCH of International Business courses, and 12 SCH in one of six functional/discipline emphases in business (accounting, banking and finance, management information systems, economics, management, marketing\*, or risk management, insurance and financial planning\*) (57 SCH, or 19 courses);
5. a one-semester internship program with an international business (3 SCH).

Students interested in following this recommended course of study should notify the Department Head of Foreign Languages and the Director of International Business Academic Program as soon as possible so that a plan of study can be developed in which courses are taken in the proper sequence.

\* Information Systems, Insurance & Marketing functional emphasis areas will need an additional 3 credits in their program

### International Business

#### University and College Core

English Composition (6 hours)

- EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

- EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics (6 hours)

- MA 1313 College Algebra  
 MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

- Life Science and Lab (BIO prefix)  
 Physical Science and Lab (CH, GG, OR PH prefix)

Math/Science Elective (3 hours)

- ST 2113 Statistics for the Beh Sciences **or**  
 ST 3113 Intro to Statistical Inferences

Humanities (6 hours)

- EN 2273 World Literature I **or**  
 EN 2283 World Literature II

- HI 1173 World History Since 1500 **or**  
 HI 1223 Modern Western World

Fine Arts (3 hours)

Choose from the following:

- ARC 1013 Architectural Appreciation  
 ARC 2313 History of Architecture I  
 ART 1013 Art History I  
 ART 1023 Art History II  
 ART 1113 Art Appreciation  
 ART 3143 Italian Renaissance Art History  
 MU 1113 History and Appreciation of Music  
 CO 1053 Introduction to Theatre  
 PE 1123 History and Appreciation of Dance

Social/Behavioral Sciences (6 hours)

- GR 1123 Introduction to World Geography  
 AN 1143 Introduction to Cultural Anthropology

#### College of Arts and Sciences Core

- PHI 3013 Business Ethics  
 PS 1313 Intro to International Relations **or**  
 PS 1513 Comparative Government  
 HI 3000+ Upper-level History Elective (see advisor)  
 SO 3000+ Upper-level Social Science Elective (see advisor)  
 FLF/G/S 1114 French/German/Spanish I  
 FLF/G/S 1124 French/German/Spanish II

- FLF/G/S 2133 French/German/Spanish III  
 FLF/G/S 2143 French/German/Spanish IV  
 FLF/G/S 3114 **or** FLS 3113 & 3111 Advanced Foreign Lang I  
 FLF/G/S 3124 **or** FLS 3233 & 3121 Advanced Foreign Lang II  
 FLF/G/S 3143 Civilization  
 FLF/G/S 3313 Business French/German/Spanish I  
 FLF/G/S 3323 Business French/German/Spanish II  
 FLF/G/S 3523 Sur of French/German/Spanish Lit  
 Foreign Language Elective - (see FL advisor for options)

#### College of Business and Industry Core

- ACC 2013 Principles of Financial Accounting  
 ACC 2023 Principles of Managerial Accounting  
 EC 2113 Principles of Macroeconomics  
 EC 2123 Principles of Microeconomics  
 BL 2413 Legal Environment of Business  
 BIS 3233 Intro to Management Info Systems  
 FIN 3123 Financial Management  
 MKT 3013 Principles of Marketing  
 MGT 3114 Principles of Management and Production  
 GB 4853 Business Policy

Computer Literacy Requirement

- BIS 1013 Intro to Business Computer Systems **or**  
 CS 1013 Basic Computer Concepts and Apps

Jr./Sr. Writing Requirement

- MGT 3213 Organizational Communications

#### Major Core

- International Business Electives- 9-12 hours  
 ACC 4053 International Accounting  
 BL 4273 International Business Law  
 EC 3513 Economic Systems of the World  
 EC 4323 International Economic Relations  
 FIN 4923 International Financial Management  
 IB 3913 Principles of International Business  
 IB 3933 International Marketing  
 MGT 4613 Cross Cultural Management  
 3 hours Transportation Course - See advisor  
 (BIS & INS majors must select 12 hours from the above list; all others must select 9 hours.)

#### Business Functional Emphasis

- 15 hours Major Electives (Choose from ACC, BIS, EC, FIN, MGT, MKT, or INS) See Business Advisor for Options.  
 IB 3900 Internship Work  
 IB 4903 Internship Work/ Academic Report  
 2 hours Free Electives

**Total hours needed for major: 154**

(Must have 32 upper division A&S hours)

\* To be selected with the advice and approval of advisor

### GENERAL LIBERAL ARTS (GLA)

Advisor: Mark Goodman  
 Office: 106 McComas

Students who prefer to specialize in more than one field of study may earn a B.A. degree in General Liberal Arts. Requirements for this degree include all of the following: satisfactory completion of the University and College Core curriculum; satisfactory completion of the College of Arts and Sciences B.A. requirements; approval of the proposed G.L.A. program; satisfactory completion of twelve hours of upper-division courses (courses numbered 3000 and above) in each of three fields of study. The three fields may all be within the College of Arts and Sciences, or one of the three may be within another school/college of the University if that field is related to the student's educational or career goals. To insure an orderly progression of work toward the degree, interested students should meet with the program's advisor as early as possible. Furthermore, admittance into the program requires a g.p.a. of at least 2.5 and the approval of the GLA Committee and the Associate Dean of the College of Arts and Sciences. General Liberal Arts is not suitable for students who are uncertain about their choice of a major; these students should see the Undecided listing in this section.

#### University and College Core

English Composition (6 hours)

- EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

- EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

- 4 semesters one Foreign Language (see advisor)

Humanities (6 hours)

- 3 hours Literature - see Major Core  
 3 hours History - see A&S listing

Philosophy Elective (3 hours)  
3 hours see advisor

Humanities Electives (9 hours)  
Consult advisor

Math (6 hours)  
MA 1313 College Algebra  
3 hours above College Algebra

Fine Arts (3 hours)  
3 hours See A&S listing

Natural Sciences (9-12 hours)  
3-4 hours Physical Science w/Lab\*  
3-4 hours Biological Science w/Lab\*\*  
3-4 hours Natural Science Elective\*\*\*

Social Sciences (18 hours)  
6 hours see A&S Listing  
12 hours Social Sciences Electives\*\*\*\*

**Major Core**

Students must choose 3 areas with 12 upper division hours in each area. Consult advisor.

**Total hours needed for major: 128**

\* CH, GG, or PH; see University CORE.  
\*\* BIO, EPP, or PO; see University CORE.  
\*\*\* Consult advisor.  
\*\*\*\* Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

**GENERAL SCIENCE (GSC)**

Major Advisor: Professor Christopher P. Dewey  
Office: 210 Hilbun Hall

For various reasons, a student may not require the intensive preparation that is typical of a professional curriculum. The general science curriculum is tailored for his/her needs. Flexibility is the key characteristic of the curriculum. The general science program is designed to give students a broad general education and at the same time teach them the fundamentals of science. By judiciously choosing his/her course of study, a student may use the general science curriculum in many ways. For example, by concentrating on biological science or chemistry the student may prepare for medical or dental school, and with appropriate choice of electives preparation for clinical and other laboratory positions in such fields as public health and marine biology is possible.

If the student is interested in interdisciplinary studies related to environmental science, the general science curriculum is suitable. Any one of the physical or biological sciences may be emphasized. The curriculum, however, involves courses from several sciences, and from other fields concerned with the environment. Persons trained in this option should be in demand in federal, state, and local governmental agencies, and in industries involved with earth resources.

Successful completion of the University and curriculum requirements will result in the awarding of a B.S. degree in General Science.

The following specific requirements apply to all general science students:

1. The B.S. Common Curriculum must be satisfied.
2. A minimum of 60 credit hours in science, of which at least 30 must be in one science, is required.
3. Normally, science courses must include: BIO 1504, BIO 3103, CH 1213 & 2211. CH 1223 & 2221, CH 4513 & 4511, CH 4523 & 4521, PH 1113, & PH 1123, GG 1113 & GG 1111.
4. Electives must be approved by the faculty advisor.
5. A total of 136 credit hours is required.

**University and College Core**

English Composition (6 hours)  
EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)  
CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
4 semesters one Foreign Language (see advisor)

Humanities (6 hours)  
3 hours Literature - see University CORE  
3 hours History - see University CORE

Mathematics (6 hours)  
MA 1313 College Algebra  
3 hours MA course above College Algebra

Fine Arts (3 hours)  
See A&S listing

Natural Sciences (9-12 hours)  
See major courses - consult advisor for specifics

Social Sciences (6 hours)\*  
See A&S listing

**Major Core**

Student should check for prerequisites for all courses. Consult advisor.  
Minimum of 60 hours in science, of which at least 30 must be in one science.

GG 1113 Earth Science I  
GG 1111 Earth Science I Lab  
CH 1211 Chemistry Lab  
CH 1213 Fund of Chemistry  
CH 1221 Chemistry Lab  
CH 1223 Fund of Chemistry  
CH 4511 Organic Chemistry Lab  
CH 4513 Organic Chemistry  
CH 4521 Organic Chemistry Lab  
CH 4523 Organic Chemistry  
PH 1113 General Physics I  
PH 1123 General Physics II  
BIO 1504 Prin of Zoology  
BIO 3103 Genetics

Writing Requirement (3 hours)  
Consult advisor

Computer Literacy (3 hours)  
Consult advisor

General Electives (17 hours) Consult Advisor

**Total hours needed for major: 136**

(32 hours must be A&S upper division)

\* Must be from 2 different areas and must be selected from University CORE list.

**Department of GEOSCIENCES**

Professors: Binkley, Mylroie, Schmitz, and Wax;  
Associate Professors: Dewey and Panuska;  
Assistant Professors: Brown, Lynch, Mack, and Rodgers  
Instructors: Gillham, Gustin, Haby, Meloche, Miller, Joan Mylorie,  
Ruffin, Verno, and Zellers  
Office: 109 Hilbun

B.S. and M.S. degrees in Geoscience are offered with emphasis in sub-disciplines described below. Minors are offered at both B.S. and M.S. levels in Geoscience.

The Department of Geosciences strives for an integrated, interdisciplinary study of the whole Earth at both the bachelor and master of science levels. Course offerings are grouped into four areas of emphasis: 1) Geology - physical, biological, and chemical aspects of the Earth; 2) Geography - distribution of physical features and human interaction with the Earth; 3) Environmental Geoscience - conservation and management of Earth resources and remediation of natural and human hazards; and 4) Broadcast Meteorology/Climatology - atmospheric characteristics, climatic variability, and radio/television weathercasting. A general program of study is built upon a foundation of natural and social sciences, humanities, and computer applications. The Geoscience curriculum provides fundamental training for future employment in the petroleum and environmental industries; education;

state and federal government agencies; environmental consulting; meteorological/climatological consulting; weathercasting on radio and television; and advanced studies in graduate school.

Within the four areas of emphasis outlined above, a student may further focus interests in a variety of areas including: water resources, hydrogeology and environmental clean-up and monitoring, petroleum exploration and services, construction and urbanization involving geological applications, geophysics and geochemistry, sedimentary geology and paleontology, Quaternary geology and karst processes, paleomagnetism, Geographic Information Systems or analysis and prediction of weather and climate. A minimum of 40 credit hours in geoscience courses is required for the geoscience degree. Students in the professional geology concentration are required to take the Association of State Board of Geologists (Fundamentals of Geology) exam.

A minor in geoscience consists of a minimum of 14 credit hours in courses numbered 2000 and above, in addition to the first year courses. The following are examples of variations within a geoscience minor. A minor with a Geology emphasis should include physical (GG 1113/1011) and historical geology (GG 1123/21) plus 14 hours 2000 and above for a total of 22 hours; for an Environmental Geoscience emphasis, physical and historical geology with laboratory plus introduction to environmental geology (GG 3133) and other course work 2000 and above for a total of 22 hours; for emphasis in Geography and Broadcast Meteorology/climatology, physical geography (GR 1114) and either introduction to environmental geology (GR 3133) or conservation of natural resources (GG 3113) and other course work 2000 and above for a total of 21 hours. Minors in Geoscience are also available at the M.S. level.

Three scholarships are available to students majoring in Geoscience, namely the F.F. Mellen, the Gordon W. Gulmon, and the Dunn Memorial Scholarships. The Mellen Scholarship provides financial assistance to those enrolled in field geology camp during the summer. The Gulmon and the Dunn Memorial Scholarships are awarded to students for academic excellence. All are restricted to students at junior or senior rank.

The Department of Geosciences encourages involvement in Sigma Gamma Epsilon, a nationally recognized honorary Earth Science society. Requirements for acceptance include a grade-point average of at least 3.00 in 12 or more hours of geoscience and a cumulative average of 2.67.

The Department of Geosciences participates with the National Weather Association (NWA) and the American Meteorological Society (AMS) in training individuals for the respective "Weathercaster Seals of Approval". The Office of the State Climatologist and the MSU Climatology Laboratory are housed in the Department and are strongly involved in programs for all students with interests in broadcast meteorology and climatology.

### DISTANCE LEARNING PROGRAMS

The Department of Geosciences offers three distance learning programs listed below. Each program utilizes DVD's, and the internet for course instruction.

**Broadcast Meteorology Program.** A three-year, 17 course, 52 credit hour program of study that can lead to a B.S. degree in Geosciences. Primarily for individuals in television weather.

**Operational Meteorology Program.** A three-year, 17 course, 52 credit hour program of study that can lead to a B.S. degree in Geosciences. Enrollment is restricted to members of the United States Armed Forces.

**Teachers In Geoscience Program.** A two-year, 12 course, 36 credit hour program of study that leads to a M.S. degree in Geosciences. Primarily for K-12 teachers. An additional two-year, 10 course, 30 credit hour program of advance course work is available.

## GEOSCIENCES

### University and College Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language (see advisor)

Humanities (6 hours)

3 hours Literature - see University CORE  
3 hours History - see University CORE

Mathematics (6 hours)

MA 1313 College Algebra  
3 hours MA course above College Algebra

Fine Arts (3 hours)

See A&S listing (for Broadcast Meteorology)  
CO 1503 Intro to Theatre (for all others)

Natural Sciences (9-12 hours)

Specified under emphasis areas

Social Sciences (6 hours)

GR 1123 World Geography  
3 hours additional course\*  
For Broadcast Meteorology  
GR 1123 World Geography  
CO 1403 Mass Media

### Major Core

Basic Courses

GG 1113 Earth Science *and*  
GG 1111 Earth Science Lab **or**  
GR 1114 Physical Geography w/Lab

### CONCENTRATION AREAS

#### Professional Geology Concentration

GG 1121 Earth Sciences II Lab  
GG 1123 Survey of Earth Sciences II\*\*  
GG 3133 Intro to Environmental Geology  
GG 4114 Mineralogy  
GG 4123 Petrology  
GG 4203 Principles of Paleobiology **or**  
GG 4113 Micropaleontology **or**  
GG 4133 Principles of Paleocology  
GG 4304 Principles of Sed. Dep I  
GG 4413 Structural Geology  
GG 4333 Geowriting\*\*\*  
GG 4443 Prin of Sed Dep II  
GG 4503 Geomorphology  
6 hours Summer Field Camp\*  
GR 2313 Maps and Remote Sensing  
GR 3113 Conservation of Natural Resources  
MA 1463 Finite Math & Intro Calculus  
ST 3113 Intro to Statistical Inference  
PH 1113 General Physics  
PH 1123 General Physics  
PH 1133 General Physics **or**  
GG 4233 Applied Geophysics  
CH 1211 Investigations in Chemistry  
CH 1213 Fundamentals of Chemistry  
CH 1221 Investigations in Chemistry  
CH 1223 Fundamentals of Chemistry  
7 hours General Electives

Choose two of the following:

GG 1133 Planetary Geology  
GG 3603 Intro to Oceanography  
GG 3613 Water Resources\*\*  
GG 4523 Coastal Environments

Choose three of the following:

GG 4153 Engineering Geology  
GG 4433 Subsurface Methods  
GG 4613 Physical Hydrogeology  
GG 4623 Chemical Hydrogeology

**Total hours needed for major: 136**

\* From approved university. See advisor.

\*\* Fulfills Computer Literacy Requirement.

\*\*\* Fulfills Jr./Sr. Writing Requirement.

**Environmental Geoscience Concentration**

GG 3603	Intro to Oceanography
GG 3613	Water Resources**
GG 4333	Geowriting***
GR 1603	Intro to Meteorology
GR 2313	Maps and Remote Sensing
18 hours	4000 level departmental courses
ST 3113	Intro to Statistical Inference <b>or</b>
GR 4633	Statistical Climatology
9 hours	Natural Sciences*
38 hours	General Electives - Consult advisor

Choose one of the following:

GG 1133	Planetary Geology
GG 3133	Intro to Environmental Geology
GG 4523	Coastal Environments
GR 3113	Conservation of Natural Resources
GR 4813	Natural Hazards

**Total hours needed for major: 136**

\* CH and BIO recommended; see University CORE.

\*\* Fulfills Computer Literacy Requirement.

\*\*\* Fulfills Jr./Sr. Writing Requirement.

**Geography Concentration**

GG 4443	Geowriting**
GR 2013	Cultural Geography
GR 2313	Maps and Remote Sensing
GR 4103	Geography of Tourism
GR 4xxx	Geo of North America
GR xxxx	Intro to GIS
6 hours	4000 level departmental courses
41 hours	General Electives - Consult Advisor

Choose four of the following:

GG 1133	Planetary Geology
GG 3133	Intro to Environmental Geology
GG 3603	Intro to Oceanography
GG 3613	Water Resources*
GG 4523	Coastal Environments
GR 1603	Intro to Meteorology
GR 3113	Conservation of Natural Resources
GR 4823	Natural Hazards

Choose one of the following:

GR 4213	Geography of Latin America
GR 4223	Geography of Europe
GR 4233	Geography of Asia
GR 4243	Geography of Russia
GR 4253	Geography of Africa
GR 4263	Geography of the South
GR 4273	Geography of Mississippi

**Total hours needed for major: 136**

\* Fulfills Computer Literacy Requirement.

\*\* Fulfills Jr./Sr. Writing Requirement.

**Broadcast Meteorology Concentration**

GG 3613	Water Resources*
GR 1603	Intro to Meteorology
GR 3113	Conservation of Natural Resources
GR 4203	Geography of North America
GR 4401	Weather Analysis I
GR 4411	Weather Analysis II
GR 4421	Weather Forecasting I
GR 4431	Weather Forecasting II
GR 4503	Pract in Broadcast Meteorology I
GR 4513	Pract in Broadcast Meteorology II
GR 4523	Pract in Broadcast Meteorology III
GT 4533	Pract in Broadcast Meteorology IV
GR 4653	Satellite and Radar Meteorology
GR 4703	Severe Weather
GR 4713	Synoptic Meteorology I
GR 4743	Synoptic Meteorology II
GR 4803	Statistical Meteorology
GR 4823	Natural Hazards
GR 4613	Applied Climatology
GR 4913	Thermodynamic Meteorology
CO 2013	Voice and Articulation
CO 2313	News Writing for Electronic Media
CO 2333	TV Production
CO 2503	Broadcast Performance
CO 3333	Advanced Television Production
10 hours	General Electives - Consult Advisor

**Total hours needed for major: 136**

\* Fulfills Computer Literacy Requirement.

**Operational Meteorology Concentration**

GG 4333	Geowriting**
GR 1603	Intro to Meteorology
GR 3113	Conservation of Natural Resources
GR 4203	Geography of North America*
GR 4401	Weather Analysis I
GR 4411	Weather Analysis II
GR 4421	Weather Forecasting I
GR 4431	Weather Forecasting II
GR 4653	Satellite and Radar Meteorology
GR 4703	Severe Weather
GR 4713	Synoptic Meteorology I
GR 4743	Synoptic Meteorology II
GR 4803	Statistical Climatology
GR 4613	Applied Climatology
GR 4913	Thermodynamic Meteorology
3 hours	General Electives

Choose three of the following:

GG 1133	Planetary Geology
GG 3133	Intro to Environmental Geology
GG 3603	Intro to Oceanography
GG 3613	Water Resources*
GG 4523	Coastal Environments
GR 4823	Natural Hazards

Suggested Electives

GR 2313	Maps and Remote Sensing
GR 4000	Senior Research I (1 hour)
GR 4000	Senior Research II (1 hour)
GR xxxx	Intro to G.I.S.
CS 1233	Computer Programming C
FO 4312/4311	Forest Photogrammetry
FO 4552/4451	Remote Sensing
FO 4472/4471	G.I.S.

**Total hours needed for major: 136**

\* Fulfills Computer Literacy Requirement.

\*\* Fulfills Jr./Sr. Writing Requirement.

**HEALTH INFORMATION MANAGEMENT CURRICULUM (BIOH)**

Major Advisor: Professor Don Downer  
Office: 226 Harned Hall

The health records administration curriculum is designed to prepare students for careers as administrators in charge of hospital medical records. Completion of the two-year curriculum qualifies a student for admission to the University of Mississippi Medical Center at Jackson or some other medical center offering a medical records administration program. The clinical work must be taken at a school having a program approved by the Council on Medical Education for Hospitals of the American Medical Association and the American Medical Record Association. Students who satisfactorily complete the pre-professional and professional training will be awarded the B.S. degree by the professional school and will be eligible to take the examination administered by the American Medical Record Association for certification as a registered medical records administrator.

## Department of HISTORY (HI)

Major Advisor: Professor Johnpeter H. Grill  
Office: 214 Allen Hall

Among the humanities disciplines, history is unique in the emphasis it places on interpreting the human experience within the context of time. Past, present, and future are a continuum in which human beings and societies evolve along more or less predictable lines; the present is a product of the past just as the future is the product of present. History is a humane study that emphasizes the importance of people, their individual choices, and the values they hold. It also provides the indispensable background, the social and political context, for other academic disciplines and branches of knowledge.

Specialization in history on the undergraduate level has direct professional application in the field of secondary education and provides excellent preparation for careers in law, the ministry, communication, journalism, government service, the military, and business. The department maintains a close working relationship with other departments on campus, making it possible for students who desire to do so to pursue double majors, joining history with geography, English, political science, business, computer science, or other fields.

To earn a Bachelor of Arts degree with a major in history, a student must pass a minimum of 39 semester hours in history with a 2.50 average in those courses. All undergraduates majoring in history must complete two of the following basic sequences: HI 1063/1073; HI 1163/1173; HI 1213/1223; HI 1313/1323. Upon completion of these basic surveys majors are required to take a minimum of two upper division courses in United States history, two upper division courses in European history, two upper division courses in African, Ancient, Asian or Latin American history plus two upper division electives in any area of history. At the beginning of their junior year majors must enroll in and pass with a grade of "C" or better, a course in Historiography and Historical Method (HI 3903). Fifteen hours of the upper division work (3000 and 4000 level courses) must be taken at Mississippi State. For a minor in history, a student must take a minimum of eighteen semester hours of history including HI 1163 or 1213 and HI 1173 or 1223 plus twelve additional credit hours in history courses numbered 2000 and above including at least one at the 4000 level. Students interested in a major or minor in history should consult one of the advisors listed.

The Department of History offers work leading to both the M.A. and Ph.D. degrees. The prerequisite for admission to a graduate program in history is a minimum of 18 hours of undergraduate history courses. Students desiring to pursue graduate studies should consult the Graduate Coordinator.

Mississippi State has a chapter of Phi Alpha Theta, the international history honorary society. Those interested in the eligibility requirements should consult with Professor Connie Lester in the history department

### University and College Core

#### English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

#### Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

#### Foreign Language (12-14 hours)

4 semesters one Foreign Language - see advisor

#### Humanities (6 hours)

3 hours Literature - see University CORE  
3 hours History - see major

#### Philosophy Elective (3 hours)

See A&S listing

#### Humanities Elective (9 hours)

Must be from 2 different areas - can be upper division hours - see A&S Core  
Six hours can come from history  
Other 3 hours - not history

#### Math

MA 1313 College Algebra  
MA 1323 Trigonometry **or**  
ST 2113 Stats for Beh Sci or higher math

#### Fine Arts (3 hours)

See A&S Core

#### Natural Sciences (9-12 hours)

3-4 hours Physical Science w/Lab\*  
3-4 hours Biological Science w/Lab\*\*  
3-4 hours Natural Science Elective\*\*\*

#### Social Sciences (6 hours) - See A&S Listing

#### Social Sciences Electives (12 hours)\*\*\*\*

### Major Core

Must choose two of the following sequences:

World History: HI 1163, HI 1173  
Western World: HI 1213, HI 1223  
U.S. History: HI 1063, HI 1073 **or**  
East Asian Civ: HI 1313, HI 1323

6 hours U.S. History U/D Electives  
6 hours African, Ancient, Asian, or Latin America U/D Elective  
6 hours European History U/D Elective  
6 hours U/D History Elective

#### Writing Requirement (3 hours)

HI 3903 Historiography and Historical Method

#### Computer Literacy (3 hours) - Consult Advisor

#### General Electives

16 hours General Electives - Consult advisor

### Total hours needed for major: 128

(32 hours must be A&S 3000 or above)

\* CH, GG, or PH; see University CORE.

\*\* BIO, EPP, or PO; see University CORE.

\*\*\* Consult advisor.

\*\*\*\* Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. Can be upper division hours. See advisor.

## JOURNALISM

See Department of COMMUNICATION

## Department of MATHEMATICS (MA) and STATISTICS (ST)

Major Advisors: Professor Bruce Ebanks  
Associate Professors Seth Oppenheimer and Michael Pearson  
Office: 410 Allen Hall

Training is offered in the field of mathematics leading to the degree of (1) Bachelor of Arts (128 hours) or (2) Bachelor of Science (136 hours). The Bachelor of Arts program is for those students who want a general liberal arts degree with a major in mathematics. Those interested in graduate study in applied mathematics or in industrial employment are advised to elect the Bachelor of Science degree. Students wishing to obtain a mathematics secondary teaching certificate within the College of Arts and Sciences may do so under either program. The department also offers minors in mathematics and statistics.

Candidates for the Bachelor of Arts degree are required to complete a minimum of 36 semester hours (carrying at least two quality points for each credit hour) of mathematics. A course whose content is below the level of MA 1713 does not satisfy any part of this requirement. Mathematics majors take MA 1713, 1723, 2733, 2743, 3113, 3253, 3163, 3213, 4633-4643, and at least two elective courses numbered 3000 or above. It is recommended that MA 3053 be selected as an elective and taken prior to MA 3163. The required courses should be scheduled in the order listed: the elective courses may be scheduled at any appropriate time during the junior or senior year. Majors must satisfy the common curriculum of the College of Arts and Sciences. In addition, 3 hours of computer science is required. The foreign language requirement may be satisfied by the completion of the College of Arts & Sciences foreign language requirements. Additions to the preceding requirements are necessary for teacher certification.

Candidates for the Bachelor of Science degree shall elect a minor from the fields of statistics, physics, chemistry, computer science, a branch of engineering, or some other discipline in which mathematics has extensive application. The minor field shall be approved by the Department of Mathematics and Statistics and the courses forming the minor shall be approved by both the minor department and the Department of Mathematics and Statistics. The minor shall consist of at least twelve semester hours of courses numbered 2000 or above. The required 42 semester hours of mathematics must be



completed with a minimum of 84 quality points. Under the B.S. program, a student may also complete a double major in mathematics and computer science or mathematics and physics, provided the student selects either option during his sophomore year. Other double majors are also possible. By a careful selection of courses, a student may also complete a minor in computer science and fulfill the requirements for a secondary teaching certificate.

Graduate study is offered in the Department of Mathematics and Statistics leading to the degree of Master of Science in Mathematics, Master of Science in Statistics, and a Doctor of Philosophy in Mathematical Sciences. A non-thesis option is available under the Master of Science in Mathematics and the Master of Science in Statistics. Also, the department participates in interdisciplinary programs leading to the degrees of Master of Science in Education, Educational Specialist, and Doctor of Education. Major areas of study include algebra, differential equations, analysis and functional analysis, numerical analysis, topology and applied statistics.

A minor in mathematics consists of MA 1713, 1723, 2733, 2743, 3113, 3253, and at least an additional six semester hours of mathematics courses numbered 3000 or above (carrying at least two quality points for each credit hour). A minor in statistics consists of ST 3113, ST 4213, one of ST 4523 or ST 4543, ST 4111 and two reading courses of ST 4003 to be approved by the department.

### B. A. in Mathematics

#### University and College Core

English Composition (6 hours)	
EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Foreign Language (12-14 hours)	
4 semesters	one Foreign Language - see advisor
Humanities (9 hours)	
6 hours	Literature - see University CORE
3 hours	History - see University CORE
Philosophy Elective (3 hours)	
	See A&S listing
Humanities Elective (6 hours)	
	No more than one Literature - see A&S Core listing
	Can be upper division
Math (6 hours)	
	See major Core
Fine Arts (3 hours)	
	See A&S Core Listing
Natural Sciences (9-11 hours)	
BIO 1203	Plant Biology <b>or</b>
BIO 1504	Principles of Zoology

#### University and College Core

English Composition (6 hours)	
EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Foreign Language	
4 semesters	one Foreign Language - see advisor
Humanities (6 hours)	
3 hours	Literature - see University CORE
3 hours	History - see University CORE
Math (6 hours)	
	See major Core
Fine Arts (3 hours)	
	See A&S Core Listing
Natural Sciences (15-16 hours)	
	Choose one of three options.
Option 1	
PH 2213	Physics I
PH 2223	Physics II
PH 2233	Physics III
CH 1213	Fundamentals of Chemistry I
CH 1223	Fundamentals of Chemistry II
Option 2	
PH 2213	Physics I
PH 2223	Physics II
PH 2233	Physics III
	<i>PLUS choose two of the following:</i>
BIO 1203	Plant Biology

CH 1213	Fundamentals of Chemistry I
CH 1223	Fundamentals of Chemistry II
CH 1211	Investigations in Chemistry
	<b>or</b>
PH 2213	Physics I
PH 2223	Physics II
3 hours	Natural Science (Consult advisor)
Social Sciences Electives (18 hours)	
See A&S Core Listing	
Major Courses	
MA 1713	Calculus I
MA 1723	Calculus II
MA 2733	Calculus III
MA 2743	Calculus IV
MA 3113	Intr Lin Alg
MA 3163	Intro to Mod Alg I
MA 3253	Diff Equations I
MA 4633	Advanced Cal I
MA 4643	Advanced Cal II
6 hours	Math Elective - 3000+
Writing Requirement (3 hours)	
MA 3213	Math Writing
Computer Literacy (3 hours) - Consult advisor	
General Electives	
16 hours	General Electives - consult advisor
<b>Total hours needed for major: 128</b>	
(32 hours must be 3000/4000 from A&S)	

### B.S. in Mathematics

BIO 1504	Principles of Zoology
BIO 3103	Genetics I
Option 3	
BIO 1203	Plant Biology
BIO 1504	Principles of Zoology
BIO 3103	Genetics I
CH 1213	Fundamentals of Chemistry I
CH 1223	Fundamentals of Chemistry II
Social Sciences (6 hours)	
See A&S Core Listing	
<b>Major Core</b>	
Students should check for prerequisites for all courses. Consult advisor. It is recommended that students take MA 3053 prior to MA 3163.	
MA 1713	Calculus I
MA 1723	Calculus II
MA 2733	Calculus III
MA 2743	Calculus IV
MA 3113	Intr Lin Alg
MA 3163	Intro to Mod Alg I
MA 3253	Diff Equations I
MA 4313	Numerical Analysis I
MA 4633	Advanced Cal I
MA 4643	Advanced Cal II
6 hours	Math Elective (4000)
3 hours	Math Elective (3000+)
Writing Requirement	
MA 3213	Math Writing
Computer Literacy (3 hours)	
CS 1314	Computer Science I
General Electives (36 hours) - Consult advisor	
<b>Total hours needed for major: 136</b>	
(32 hours must be 3000/4000 from A&S)	

**STATISTICS (ST)**

Associate Professor: Patrick Gerard  
Office: 410 Allen Hall

Courses in statistics are designed to satisfy two objectives. The first objective is to provide graduate training for those students wishing to pursue a career as professional statisticians. Both graduate and undergraduate courses are available for this purpose. The second is to provide minors for students from other disciplines. The undergraduate minor in statistics consists of ST 3113, ST 4213, one of ST 4523 or ST 4543, ST 4111 and two reading courses or ST 4003 to be approved by the department.

Graduate study is offered in the Department of Mathematics and Statistics leading to the degree of Master of Science in Mathematics, Master of Science in Applied Mathematics, Master of Science in Statistics and a Doctor of Philosophy in Mathematical Sciences. A non-thesis option is available under the Master of Science degree program. Many applied statistics courses are offered which are suitable for a minor in statistics at the master's or doctoral level. Specific course requirements for the graduate minor in statistics may be obtained from the Graduate Coordinator of the Department of Mathematics and Statistics.

Admission to the master's program in statistics is open to graduates in all disciplines. The program of study is a blend of both statistical theory and statistical methods, and it provides graduate students with the opportunity to participate as statistical consultants on real projects through the Center for Statistical and Mathematical Services. In addition, there is ample flexibility in the non-thesis option to allow a graduate student with special interests in an area of statistical application to minor in that particular applied field. The department awards a limited number of teaching assistantships. For further details, consult the Coordinator of Graduate Studies, P.O. Box MA, Mississippi State, MS 39762.

**MATHEMATICS and COMPUTER SCIENCE:  
A DOUBLE MAJOR PROGRAM (CSMA)**

Major Advisors: Professor Bruce Ebanks (410 Allen)  
Associate Professors Seth Oppenheimer and Michael Pearson (410 Allen)

The Department of Computer Science and the Bachelor of Science degree program in computer science have been administratively relocated to the College of Engineering. In part as a result of this relocation, the program in Mathematics and Computer Science is undergoing significant revision. Students who are not currently CSMA majors but have an interest in the program should consult with the Undergraduate Coordinator for the Department of Mathematics and Statistics in Allen 410; students already enrolled in the CSMA program should continue to meet with their regular faculty advisors.

**Department of PHILOSOPHY and RELIGION****PHILOSOPHY MAJOR (PR)**

Associate Professors Michael Clifford, Lynn Holt (Head) and Jay Keehley  
Assistant Professors Yolanda Estes and Glenn Kuehn  
Office: 29-30 President Circle

Philosophy is the study of the basic concepts—such as reality, truth, and goodness—which underlie the more specialized pursuits of science, art, education, religion, *etc.* Although students often study philosophy for its own sake, the general perspective it provides, and the rational skills it develops, are of immense practical value in any profession.

The baccalaureate degree in philosophy is the accepted major for those planning to enter graduate school in philosophy. It is, however, an excellent pre-law and pre-seminary degree and, because of its general nature, philosophy is highly appropriate as a double major with any other concentrated field of study.

The standard program leading to the Bachelor of Arts degree in philosophy has a major requirement of 30 hours, including Introduction to Philosophy, Introduction to Logic, Introduction to Ethics, History of Philosophy, Parts I and II, and Seminar in Philosophy. The final 12 hours, including 6 that must be PHI courses, are to be selected in consultation with, and with approval by, the major advisor.

The department also offers a minor in philosophy, with the requirements being 18 hours of PHI courses.

Students considering either a major or minor in philosophy should meet with one of the department's advisors as early in their careers as possible.

**University and College Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language - see advisor

Humanities (6 hours)

3 hours Literature - see University CORE  
3 hours History - see University CORE

Philosophy Elective (3 hours)

See Major

Humanities Elective (9 hours)

Must be from 2 different areas- see A&S Core listing  
See Major

Math (6 hours)

MA 1313 College Algebra  
MA 1323 Trigonometry **or**  
ST 2113 Stats for Beh Sci **or** higher math

Fine Arts (3 hours)

See A&S Core Listing

Natural Sciences (9-12 hours)

3-4 hours Physical Sciences w/lab (CH, GG, PH)\*  
3-4 hours Biological Sciences w/lab (BIO, EPP, PO)\*  
3-4 hours Natural Science Elective\*\*

Social Sciences (6 hours)

See A&S listing

Social Sciences Electives (12 hours)\*\*\*

**Major Core**

PHI 1103 Intro to Philosophy  
PHI 1113 Intro to Logic  
PHI 1123 Intro to Ethics  
PHI 3023 History Western Phil I  
PHI 3033 History Western Phil II  
12 hours PHI Electives

Writing Requirement (3 hours)

PHI 3133 Seminar in PHI

Computer Literacy (3 hours)

See University CORE

General Electives (24 hours)

Consult advisor

**Total hours needed for major: 128**

(32 hours must be 3000/4000 from A&S)

\* See University CORE.

\*\* Consult advisor.

\*\*\* Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

**Religion Concentration**

Major Advisors: Professors Paul Jacobs and Joe Seger  
Assistant Professors: Eve Mullen and Jimmy Hardin  
Office: 29-30 President Circle

### Religion Concentration

Religion refers to the basic human impulse to seek coherence in life, to find that unity which guides and orders human existence. As an academic discipline the study of religion involves consideration of those writings, customs, and rituals that have historically served to form and distinguish religious groups. It includes examination of primitive religions and sectarian developments as well as study of the major world religions of both the east and west.

Some Religion faculty are housed in the Cobb Institute of Archaeology and are cross-appointed to the Institute staff. In addition, there are other archaeologists in the Institute, including specialists in the Middle East and Southeastern U.S.

The Department of Philosophy and Religion offers a concentration in religion leading to the Bachelor of Arts degree in philosophy. The baccalaureate degree in religion is an accepted major for those planning to enter graduate school or to prepare for careers in a professional ministry or in teaching. However, because it offers a broad historical and cultural orientation, the religion major offers excellent preparation for any career. It is highly appropriate as a double major, or as a minor in association with any other concentrated field of study.

The major with the concentration in religion has a requirement of 30 hours. Of these 9 hours are required in philosophy. These may be satisfied by taking either a) Introduction to Philosophy, Introduction to Logic, and Seminar in Philosophy, or b) History of Western Philosophy I and II, and Seminar in Philosophy. The remaining 21 hours must include Introduction to Religion and either World Religions I and II, or Introduction to the Old Testament and Introduction to the New Testament. The additional 12 hours, including 6 that must be REL courses, are to be selected in consultation with, and with approval by, the major advisor.

The department also offers a minor in religion, with the requirements being 18 hours in REL courses.

#### University and College Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language - see advisor

Humanities (6 hours)

3 hours Literature - see University CORE  
3 hours History - see University CORE

Philosophy Elective (3 hours)

See Major

Humanities Elective (9 hours)

Must be from 2 different areas- see A&S Core listing  
See Major

Math (6 hours)

MA 1313 College Algebra  
MA 1323 Trigonometry **or**  
ST 2113 Stats for Beh Sci **or** higher math

Fine Arts (3 hours)

See A&S Core Listing

Natural Sciences (9-12 hours)

3-4 hours Physical Sciences w/lab (CH, GG, PH)\*  
3-4 hours Biological Sciences w/lab (BIO, EPP, PO)\*  
3-4 hours Natural Science Elective\*\*

Social Sciences (6 hours)

See A&S listing

Social Sciences Electives (12 hours)\*\*\*

#### Major Core

REL 1103 Intro to Religion  
Choose one of the following combinations:  
REL 1213 Intro Old Testament  
REL 1223 Intro New Testament

**or**  
REL 3213 World Religion I  
REL 3223 World Religion II

Choose one of the following combinations:

PHI 1103 Intro to Philosophy  
PHI 1113 Intro to Logic

**or**  
PHI 3023 History of W. Philosophy I  
PHI 3033 History of W. Philosophy II

Electives

12 hours REL/PHI Electives

Writing Requirement (3 hours)

PHI 3133 Seminar in Phi

Computer Literacy (3 hours)

See University CORE

General Electives (30 hours)

Consult advisor

**Total hours needed for major: 128**  
(32 hours of course work must be A&S 3000/4000 level)

\* See University CORE.

\*\* Consult advisor.

\*\*\* Must be from 2 different areas and must cross 4 disciplines over the 18 hours.  
Only one Economics allowed. See advisor.

### OCCUPATIONAL THERAPY CURRICULUM (BIOT)

Major Advisor: Professor Don Downer  
226 Harned Hall

The supply of occupational therapy graduates falls far short of the demand so that numerous opportunities exist in the field. Mississippi State University does not provide training in physical therapy but does offer the background work necessary to transfer to a professional school. In their admission requirements professional schools differ, some requiring two years of pre-professional study, some three and others four. The two-year curriculum listed below satisfies the requirements of the Mississippi Medical Center in Jackson, where most Mississippi State University students pursue their professional training for three additional years. Sixteen hours of observation are also required. Upon successful completion of the pre-professional and professional work, students are awarded the M.S. degree by the professional school. Students wishing to apply to the University of Mississippi Medical Center should do so by January preceding the September they wish to enter. The University of Mississippi Medical Center only accepts Mississippi residents. Consult with your advisor for an appropriate schedule.

### PHYSICAL THERAPY CURRICULUM (BIOP)

Major Advisor: Professor Don Downer  
Office: 226 Harned Hall

Mississippi State University does not provide training in physical therapy but does offer the background work necessary to transfer to a professional school. In their admission requirements professional schools differ, some requiring two years of pre-professional study, some three, and others four. The courses listed below satisfy the requirements of the Mississippi Medical Center in Jackson, where most Mississippi State University students pursue their professional training. Forty hours of observation are also required. Upon successful completion of the pre-professional and professional work, students are awarded the M.S. degree by the professional school. Students wishing to apply to the University of Mississippi Medical Center should do so by January preceding the September they wish to enter. The University of Mississippi Medical Center only accepts Mississippi residents.

#### Admission Requirements

1. provide evidence of observation in a minimum of two physical therapy clinical departments or practices for a total of 40 hours (additional hours and sites are recommended)
2. have a baccalaureate degree
3. submit an official report of GRE scores. The report must include verbal, quantitative and analytical scores
4. return all application materials to the Office of Student Services and Registrar by the admissions deadline, and
5. complete the following prerequisite course requirements: \*  
Human Anatomy or Comparative Anatomy I \*\*  
Human Physiology - 1  
Social Sciences - 2 (including sociology)  
Statistics - 1 (mathematics, psychology)

Advanced Science - 2  
 Psychology - 2 (General and abnormal)  
 English Composition - 2  
 Fine Arts - 1  
 Chemistry - 2  
 Physics - 2  
 College Algebra - 1 (or higher level course)

Zoology or Biology - 2  
 Speech - 1  
 Humanities - 2

- \* Science survey courses designed for non-science majors are not acceptable for transfer credit. Physical and biological science courses must include laboratory experiences.  
 \*\* Required number of courses.

### Department of PHYSICS and ASTRONOMY (PH)

Major Advisors: Joseph L. Ferguson and Jeffry A. Winger  
 Office: Hilbun Hall

Physics plays a basic role in all science and engineering disciplines. Physics is concerned with the study of the structure of matter, the nature of radiation, and the interaction of radiation and matter. Among the major branches are optical, laser, atomic, nuclear, molecular particle, condensed matter, bio-, astro-, plasma and computational physics. The B.S. program in physics provides an excellent, broadly based course of study with enough electives that the student can pursue his/her special interests in other subjects (for example, mathematics, computer science, chemistry, biology, etc). The B.S. degree provides the necessary training for either employment in industry or government, or continued study at the graduate level.

The department also has a Physics/Pre-Medical curriculum for those students who wish to compete for admission to medical and dental schools. An applied physics curriculum is available for those who wish to work in research and development or pursue graduate work in applied physics, engineering physics or some branch of engineering. In addition, the department offers the Master of Science in physics and the Ph.D in engineering physics. Information may be obtained by writing the Department of Physics and Astronomy, P.O. Box 5167, Mississippi State, MS 39762. [www.msstate.edu/Dept/Physics/](http://www.msstate.edu/Dept/Physics/)

A minor in physics requires 12 hours of physics at the 3000 level or above. These courses should be selected in consultation with a physics advisor.

The following is a recommended physics B.S. curriculum. Requirements for graduation are 136 hours with a GPA of at least 2.0. In addition, the student is required to maintain at least a C average in his/her physics courses.

#### University and College Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language - see advisor

Humanities (6 hours)

3 hours Literature - see University CORE  
 3 hours History - see University CORE

Math (6 hours)

See Major Core

Fine Arts (3 hours)

See A&S Core Listing

Natural Sciences (9-12 hours)

See Major Courses

Social Sciences (6 hours)

See A&S listing

#### Major Core

Some substitutions for required courses are possible for double majors. Student should check for prerequisites for all courses. Consult advisor.

PH 1001 Intro to Physics  
 PH 1063 Desc Astronomy  
 PH 2213 Physics I  
 PH 2223 Physics II  
 PH 2233 Physics III  
 PH 3613 Modern Physics  
 PH 4113 Elec Circuits

PH 4143 Inter Lab

PH 4213 Inter Mech I

PH 4323 Elec Fields I

PH 4413 Thermal Physics

PH 4513 Inter Opts

PH 4152 Mod Physics Lab

PH 4713 Intro Quant Mech

Physics Electives - 6 hours must be chosen from the following:

PH 4223 Mech II

PH 4333 Elec Fields II

PH 4723 Applications of Quant Mech

CH 1213 Fund of Chemistry

CH 1211 Lab

CH 1223 Fund of Chemistry

CH 1221 Lab

MA 1713 Calculus I

MA 1723 Calculus II

MA 2733 Calculus III

MA 2743 Calculus IV

MA 3113 Intro Lin Alg

MA 3253 Diff Equations I

MA 3353 Diff Equations II

Writing Requirement (3 hours)

Approved Jr/Sr writing course - see advisor

Computer Literacy (3 hours)

CS 1233 Comp Prog with C recommended

Science and Math Electives (9 hours)

9 hours Consult advisor

General Electives (10 hours)

Consult advisor

**Total hours needed for major: 136**

32 hours course work must be A&S 3000/4000

#### Physics/Pre-Medical Curriculum

For this curriculum the required courses for the physics major are reduced by 9 hours (two physics electives and PH 4413).

MA 3353 Diff Equations II\*

BCH 4603 General Biochemistry I and

BCH 4613 General Biochemistry II

BIO 1504 Prin Zoology

BIO 3304 General Microbiology

BIO 3504 Comp Anatomy

BIO 4504 Comp Vert Embryology

Additional recommended courses. Check with Pre-Medical Advisor.

CH 4513 Organic Chemistry I  
 CH 4511 Organic Chemistry Lab  
 CH 4523 Organic Chemistry II  
 CH 4521 Organic Chemistry Lab  
 BCH 3613 Elem Biochem **or**

\* MA 4523 may be substituted for MA 3353

#### Applied Physics Curriculum

For this curriculum the required physics courses for the physics major are reduced by 6 hours of physics electives.

PH 4333 Elec Fields II **or**  
 ECE 3324 Electromagnetics II is recommended

MA 3313 Num Meth **or**

MA 4313 Num Analysis I is recommended

15 hours Engineering electives recommended; see advisor

**DEPARTMENT of POLITICAL SCIENCE (PS)**

Undergraduate Coordinator: Dr. Diane Wall  
Office: 121 Bowen Hall

The Department of Political Science offers a Bachelor of Arts degree (BA) for individuals who have an interest in politics and who seek careers in the law, in federal, state, or local government (either administrative or elective), in the diplomatic service, with international organizations, in the business world, or in teaching. The Department also offers a Master of Arts degree in Political Science (MA), a graduate professional degree in Public Administration (MPPA) and a Ph.D. in Public Policy and Administration which prepare men and women for careers in the public service. Interested students should consult the undergraduate or graduate coordinator.

Students pursuing the B.A. degree in Political Science are required to complete PS 1113, PS 4464, EC 1033 or EC 2113, and three of the following introductory Political Science courses: PS 1313, PS 1513, PS 2403 and PS 2703. They must also complete a minimum of seven upper-division elective courses in Political Science (totaling at least 21 credits); of these seven courses, at least one must be completed in each of three of the four subfields of the discipline as displayed in the "Part III: Description of Courses" portion of this *Bulletin* (American Politics, International Politics, Political Theory, and Comparative Politics).

Political Science majors who wish to teach social studies in Mississippi may become certified by combining the Political Science major with appropriate courses in the College of Education; in Mississippi, it is not necessary to major in secondary education in order to become certified to teach. At the same time, majors in secondary education who plan to become social science teachers should consider a second major, or a minor in Political Science.

Students not majoring in Political Science may wish to select a minor. A minor consists of a minimum of 18 hours of course work in Political science at least 9 of which must be at the 3000 level or above. Interested nonmajors should speak with the undergraduate coordinator to formulate a suitable program of study.

The John C. Stennis Scholarship in Political Science is awarded each spring to at least two graduating high-school seniors and/or community-college graduates who are Mississippi residents, and who plan to major in Political Science at Mississippi State University. These scholarships carry a stipend of \$2,000 per year for four years or until graduation, whichever comes sooner.\* The Stennis Scholarships are awarded to academically outstanding students who demonstrate the desire and potential to become actively involved as leaders in the political and governmental affairs of the community, state, or nation. For further information, consult the Head of the Department of Political Science, P.O. Box PC, Mississippi State, MS 39762 or telephone 325-2711; high-school counselors should also be able to provide application forms.

The Morris W. H. "Bill" Collins Scholarship may be awarded to one African American high school senior who is a resident of Mississippi, who plans to major in Political Science at Mississippi State University, and who demonstrates potential for making contributions in some area of public service. This scholarship carries a stipend of \$1,500 per year for four years or until graduation, whichever comes first. For further information, consult the Head of the Department of Political Science, P.O. Box PC, Mississippi State, MS 39762 or telephone 325-2711.

The Haley Barbour Scholarship is awarded each spring to one Political Science major, with two years of college remaining, who evidences a determination to become involved in the political life of the nation. The Barbour Scholarship carries a stipend of \$1,500 per year for a maximum of two years, typically the recipient's junior and senior years. Political Science majors may be nominated by faculty for the Barbour Scholarship or make application on their own. For further information and application forms, consult the Head of the Department of Political Science, P.O. Box PC, Mississippi State, MS 39762 or telephone 325-2711.

The following is a typical course of study for Political Science majors, but students should consult with their advisors in order to develop a program which is best for them. For more information contact: Dr. Diane Wall at 662-325-7864 or dew1@ps.msstate.edu.

\* Transfer students receive the stipend for two years or until graduation, whichever comes sooner.

**University and College Core**

## English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

## Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

## Foreign Language (12-14 hours)

4 semesters one Foreign Language - see advisor

## Humanities (6 hours)

3 hours Literature - see University CORE  
3 hours History - see University CORE

## Philosophy Elective (3 hours)

Consult advisor

## Humanities Elective (9 hours)

(Must be from 2 different areas - see A&S Core)

## Mathematics (6 hours)

MA 1313 College Algebra  
3 hours above college algebra

## Fine Arts (3 hours)

See A&S Core List

## Natural Sciences (9-12 hours)

3-4 hours Physical Sciences w/lab (CH, GG, PH)\*  
3-4 hours Biological Sciences w/lab (BIO, EPP, PO)\*  
3-4 hours Natural Science Elective\*\*

## Social Sciences (6 hours)

See University CORE

## Social Sciences Electives (12 hours)\*\*\*

**Major Core**

PS 1113 American Government\*\*\*\*

## Introductory PS Courses (9 hours)

Choose 3 of the following:  
PS 1313 Introduction to International Relations  
PS 1513 Comparative Government  
PS 2403 Introduction to Political Theory  
PS 2703 Introduction to Public Policy

PS U/D Electives (21 hours)  
(See advisors for selection)\*+

## Writing Requirement (4 hours)

PS 4464 Political Analysis

## Computer Literacy (3 hours)\*++

## General Electives (16 hours)

**Total hours needed for major: 128**  
**(Must have minimum of 32 hours A&S upper division courses.)**

\* See University CORE.

\*\* Consult advisor.

\*\*\* Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor.

\*\*\*\* Also counts as Social Science Requirement.

\*+ Must have at least one course from 3 of 4 areas as listed under the Political Science Department in the bulletin's Description of Courses: American Politics, International Politics, Political Theory, Comparative Politics. Only one directed individual study course and only one honors thesis course may be included.

++ Consult advisor to select one of the following: ART 2803, BIS 1013, CS 1213, CS 1253, CS 1293, CS 1123, CS 4053, PSY 4123, TKT 1273.

**PRE-LAW CURRICULUM (LAW)**

Faculty Advisors  
Associate Professor Diane E. Wall, Chair  
Office: 121 Bowen Hall  
Associate Professor Jay Keehley  
Office: 29-30 President's Circle  
Associate Professor Matthew W. Little  
Office: 316 Lee Hall

Most directors of law school admissions indicate that a wide variety of majors from various colleges are appropriate for admission to their law school. Since there is no formal pre-law curriculum, a course of study is designed to prepare students for law school in conjunction with the student's formal major. Essentially, it will provide students contemplating a career in law with a broad-based program of study that focuses on improvement of the student's skills in oral communication, writing, and analytical reasoning.

Students interested in careers in law are encouraged to speak with a Pre-Law advisor and to participate in various law-related programs such as law school visitations, the Pre-Law Society, and Distinguished Jurist Day. Your pre-law advisor will provide guidance on the law school admissions test (LSAT), law school application process, and on selecting the best law school for you. LSAT and law school applications are available in room 110-B Bowen Hall. For additional information contact: Dr. Diane Wall at 662-325-7864 or dew1@ps.msstate.edu.

There is no set curriculum but the following are suggested basic courses for a person interested in law school. See your pre-law advisor for additional course suggestions based on your career interest and major.

BL 2413	Legal Environment of Business	PS 3063/3073	Constitutional Powers/Civil Liberties
EN 4223	Principles of Legal Writing	PS 4183	Judicial Process
LSK 2013	Speed Reading	PSY 3213	Psychology of Abnormal Behavior
PHI 1113	Introduction to Logic	SO 3603	Criminology

### PRE-MEDICAL and PRE-DENTAL CURRICULA (MED) (DENT)

Pre-Medical and Pre-Dental Advisory Committee:

Professor Don Downer

Office: 226 Harned Biology Building

Professor John A. Boyle

Office: 402 Dorman

Associate Professor Tom P. Cathcart

Office: 123 Agricultural Engineering

Assistant Professor James A. Price (Pre-Dental)

Office: 223 Harned Biology Building

Preference is given to persons who have completed four years of study, majored in a specific discipline, and earned a bachelor's degree. The curriculum for admission to professional school includes one academic year each of English, biological science, inorganic chemistry, organic chemistry, mathematics, physics and advanced science. The Pre-Medical advisors can provide detailed information about requirements of various schools.

### PRE-NURSING CURRICULUM (BION)

Major Advisor: Professor Michael J. Sullivan

Office: 130 Harned Hall

UMC and MUW have slightly different admission requirements, so course selection will vary during the sophomore year depending upon which professional school the student plans to attend. Students should consult the advisor for details. A minimum grade of C and a minimum composite score of 21 on the ACT is required for admission. Application for professional school is normally made during the fall preceding the year admission is desired. **Consult your advisor for developing an appropriate schedule of classes.**

### PRE-OPTOMETRY CURRICULUM (BIOO)

Major Advisor: Professor Don Downer

Office: 226 Harned Hall

Requirements for admission to the various optometry schools differ. Students should check the specific requirements of the professional schools to which they plan to apply. Pre-Optometry students should plan to take the Optometry College Admission Test (OCAT) during the sophomore or junior year. **Consult your advisor for developing an appropriate schedule of classes.**

### PRE-PHARMACY CURRICULUM (CHPH)

Major Advisor: Professor Svein Saebo

Office: 118 Hand Lab

#### Pre-Pharmacy Curriculum (CHPH)

The pre-pharmacy program is intended for students who wish to attend the School of Pharmacy at the University of Mississippi. No degree will be granted from Mississippi State University, and there are thus no university or college requirements. The courses listed below will satisfy the requirements for the School of Pharmacy at the University of Mississippi. Most pharmacy schools have similar requirements. However, students who wish to attend other pharmacy schools should check the specific requirements for that school.

#### Required Courses (45 hours)

CH 1213	Fundamentals of Chemistry I
CH 1211	Lab
CH 1223	Fundamentals of Chemistry II
CH 1221	Lab
CH 4513	Organic Chemistry
CH 4511	Lab
CH 4523	Organic Chemistry
CH 4521	Lab

Note: CH 1213, 1223, 4513, and 4523 must be taken in that order; the labs CH 1211, 1221, 4511, and 4521 should be taken in that order. A lab may be taken after the corresponding class has been completed.

EN 1103	English Composition I
EN 1113	English Composition II
CO 1003	Fundamentals of Public Speaking
EC 2123	Microeconomics
MA 1713	Calculus I

PH 1113	General Physics I
PH 1123	General Physics II
BIO 1504	Principles of Zoology
BIO 2014	Human Physiology

#### Electives (21 hours)

##### Social and Behavioral Electives (6 hours)

At MSU EC 2113 Macroeconomics is a prerequisite for the required course EC 2123 (see above), and EC 2113 will count as one social science elective. In addition to EC 2113, one course from either Psychology, Sociology, Political Science, or Anthropology is required.

##### Humanities and Fine Arts Electives (9 hours)

At least 3 credit hours required in each of the two main areas. Humanities should be chosen from the following areas: English Literature, Foreign Language, History, Religion, or Philosophy

##### General Electives (6 hours)

Any course with college credit other than algebra or trigonometry

**IMPORTANT NOTE:** This adds up to a total of 66 credit hours, but the minimum requirement for admission to School of Pharmacy is 68 credit hours. The reason for this discrepancy is that the physics requirement at the University of Mississippi is 8 credit hours (2 times 4). MSU only offers 3 credit hours physics courses, and the School of Pharmacy has decided to accept MSU students with only 6 credit hours in physics. However, a total of 68 credit hours is still required. The 2 additional credit hours can be made up either by taking General Physics III, which is recommended by the School of Pharmacy, or a general elective (any course with college credit). If a student completes general Physics III and therefore has received credit for nine hours of physics, the additional credit hour will count toward satisfying the general elective requirement.

**Department of PSYCHOLOGY (PSY)**

Major Advisor: Professor Stephen Klein  
Office: 110 Magruder

The department offers majors leading to the B.A. or B.S. degree, and the M.S. degree. Undergraduate students wishing to major in psychology must have a minimum 2.0 GPA on all college work attempted prior to entering the major. Transfer students also must have a minimum 2.0 GPA to be admitted to the psychology major.

The Bachelor of Arts degree program in psychology is designed to provide training for advanced study in psychology or related fields. Advanced study is recommended for students wanting a career in psychology, and most psychology majors are enrolled in the B.A. program, which requires a total of 128 semester hours.

In addition to the B.A. common curriculum of the College of Arts and Sciences, candidates for the BA. degree in psychology must take PSY 1013, PSY 3103, PSY 3213, PSY 3313, PSY 3343, PSY 3623, PSY 3713, PSY 4203, PSY 4323, PSY 4403, plus 15 hours of psychology electives from the following courses: PSY 3003, PSY 3023, PSY 3073, PSY 3203, PSY 3353, PSY 3363, PSY 3413, PSY 3503, PSY 3803, PSY 4103, PSY 4113, PSY 4123, PSY 4223, PSY 4333, PSY 4343, PSY 4423, PSY 4523, PSY 4633, PSY 4653, PSY 4713, PSY 4723, PSY 4983, and one 3000/4000 level Educational Psychology course. Psychology majors must earn a C or better in all required psychology courses.

For the 18 hour minor in Psychology, at least half of the classes (9 hours) must come from the list of required Psychology courses while the remainder may come from the list of Psychology electives. Students should consult a Psychology major advisor to plan a minor program which will complement their major studies and career interests.

For a Psychology concentration in the BSIS program of study, at least half of the classes (6 hours for the 12 hour concentration or 9 hours for the 18 hour concentration) must come from the list of required Psychology courses while the remainder may come from the list of Psychology electives. All of these must be upper-division courses. Students should consult the Undergraduate Coordinator in the Psychology Department to plan a concentration which will complement their career interests.

**Bachelor of Arts in Psychology****University and College Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language - see advisor

Humanities (6 hours)

3 hours Literature - see University CORE  
3 hours History - see University CORE

Philosophy Elective (3 hours)

Consult advisor

Humanities Elective (9 hours)

(Must be from 2 different areas - see A&S Core)

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1323 Trigonometry **or**  
ST 2113 Stats for Beh Sci (or higher math)

Fine Arts (3 hours)

See A&S Core List

Natural Sciences (9-12 hours)

3-4 hours Physical Sciences w/lab (CH, GG, PH)\*  
3-4 hours Biological Sciences w/lab (BIO, EPP, PO)\*

3-4 hours Natural Science Elective\*\*

Social Sciences Core (6 hours)

See A&S Core listing

Social Sciences Electives (12 hours)\*\*\*

**Major Core**

PSY 1013 General Psychology  
1 hour Career Seminar - See advisor  
PSY 3103 Intro Psych Stats  
PSY 3213 Psy of Abnormal Behavior  
PSY 3343 Psych Learning  
PSY 3623 Social Psychology  
PSY 3713 Cognitive Psychology  
PSY 4203 Theories Personality  
PSY 4323 History of Psychology  
PSY 4403 Physiological Psychology  
15 hours PSY Electives

Writing Requirement (3 hours)

PSY 3313 Experimental Psychology

Computer Literacy (3 hours)

Consult advisor

General Electives (9 hours)

Consult advisor

**Total hours needed for major: 128**

32 hours of course work must be A&S 3000/4000

\* See University CORE.

\*\* Consult advisor.

\*\*\* Must be from 2 different areas and must cross 4 disciplines over the 18 hours (6 hours from the Social Science core and 12 hours of SS electives). Only one Economics allowed. See advisor.

**Bachelor of Science in Psychology**

The faculty in psychology feels that a B.S. program should reflect the liberal arts mission of the department. To accomplish this goal, students in the B.S. program complete a six-course theme. The theme approach allows students to create a plan of study to complement their interests, and to encourage them to see the connection between courses. Students may elect to use a pre-existing minor or concentration as a theme, as long as they adequately describe how the courses in the minor or concentration fit together into a theme that relates to psychology. Psychology major requirements cannot be used to satisfy theme course requirements.

Students may elect to deviate from existing minors or concentrations and create their own themes with the consent of their advisors. "Creating one's own theme" will not be easy, and will require planning in advance.

A student's theme must be approved by his or her advisor prior to admission into the B.S. Program. A student interested in pursuing the B.S. degree also must fulfill the same departmental course requirements as for the B.A. degree. In addition to the theme requirement, the differences between the B.S. and B.A. degree programs in psychology are as follows: the humanities requirement is six rather than 18 credit hours, the social science requirement is six instead of 18 credit hours, and 136 rather than 128 credit hours are required for a degree.

**University and College Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language - see advisor

Humanities (6 hours)

3 hours Literature - see University CORE  
3 hours History - see University CORE

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1323 Trigonometry **or**  
ST 2113 Stats for Beh Sci (or higher math)

Fine Arts (3 hours)

See A&S Core List

Natural Sciences (9-12 hours)  
 3-4 hours Physical Sciences w/lab (CH, GG, PH)\*  
 3-4 hours Biological Sciences w/lab (BIO, EPP, PO)\*  
 3-4 hours Natural Science Elective\*\*

Social Sciences Electives (6 hours)\*\*\*  
 3 hours see major  
 3 hours consult advisor

**Major Core**

PSY 1013 General Psychology  
 1 hour Career Seminar - See advisor  
 PSY 3103 Intro Psych Stats  
 PSY 3213 Psy of Abnormal Behavior  
 PSY 3343 Psych Learning  
 PSY 3623 Social Psychology  
 PSY 3713 Cognitive Psychology  
 PSY 4203 Theories Personality  
 PSY 4323 History of Psychology

PSY 4403 Physiological Psychology  
 15 hours PSY Electives

Theme Electives (15 hours)  
 Consult advisor

Writing Requirement (3 hours)  
 PSY 3313 Experimental Psychology

Computer Literacy (3 hours)  
 Consult Advisor

General Electives (21 hours)  
 Consult advisor

**Total hours needed for major: 136**

32 hours of course work must be A&S 3000/4000

\* See University CORE.  
 \*\* Consult advisor.  
 \*\*\* Must be from 2 different areas.

**Department of SOCIOLOGY, ANTHROPOLOGY, and SOCIAL WORK (SO) (AN) (SW)****ANTHROPOLOGY (AN)**

Program Director: Dr. S. Homes Hogue  
 Office: 108 Cobb Institute of Archaeology

**Degrees: Bachelor of Arts, Master of Arts**

Anthropology is the study of humans as biological and cultural beings. Its subfields include archaeology, biological anthropology, cultural anthropology, and linguistics. Students majoring in anthropology may undertake course work in all four subfields, with concentrations offered in archaeology and cultural and biological anthropology.

Anthropology is a particularly broad major, designed for students who are preparing for employment with research organizations, or museums, for administrative and research positions with state or federal governments (such as state highway departments and the National Park Service), and with human service agencies or organizations that involve work in foreign countries. The undergraduate major in anthropology also prepares students for graduate training in professional fields such as planning, law, and public administration, as well as for further graduate training in anthropology leading to college and university teaching and research positions.

A student wishing to pursue a program leading to a Bachelor of Arts with a major in anthropology is required to elect a minimum of thirty six (36) credit hours of anthropology including: AN 1343, AN 1143, AN 1543, and AN 4123/6123. They must also complete a minimum of seven upper-division elective courses in Anthropology (totaling at least 21 credits): of these seven courses at least one must be completed in each of the three subfields from the following list: archaeology (AN 4523, AN 3523, AN 4503); biological anthropology (AN 4303, AN 4313, AN 3333); and cultural anthropology (AN 3113, AN 3123, AN 3133, AN 3153, AN 4133, AN 4163). No more than six credit hours from cross-listed courses taught in other programs and no more than twelve hours of fieldwork courses will count towards the required 36 hours. Statistics (ST 2113) is also required. Students are encouraged to take elective courses in related fields which will strengthen their academic training and job skills. These may include courses in human anatomy, soils, geology, and land surveying.

Students are eligible for membership in the Alpha chapter of Lambda Alpha, the national anthropology honorary. In order to be considered, a student must have at least a 2.50 overall GPA, with a 3.00 GPA in anthropology courses, and have earned a minimum of 12 semester hours credit in anthropology or sociology, with at least 6 of these in anthropology. Part-time jobs are available for anthropology majors through the Department of Sociology, Anthropology, and Social Work and through the Cobb Institute of Archaeology.

The Anthropology faculty and staff are housed in the Cobb Institute of Archaeology. There are other archaeologists in the Institute, including specialists in the Middle East and Southeastern U.S. Facilities include archaeology laboratories, darkroom, drafting room, and museum. The museum houses artifacts from Mississippi and the Middle East, including replicas of large-scale relief sculptures and statues from Assyria and Egypt.

Anthropology may be used as a minor field of study at both the undergraduate and graduate levels. Twelve (12) hours, (9 hours must be 3000 level or above) in addition to AN 1103, constitute an undergraduate minor. Requirements for an anthropology minor at the graduate level will be established in consultation with the anthropology major advisors. Courses taken for an undergraduate or graduate minor must be taught by anthropology faculty.

**University and College Core**

English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
 4 semesters one Foreign Language - see advisor

Humanities (6 hours)  
 3 hours Literature - see University CORE  
 3 hours History - see University CORE

Philosophy (3 hours)  
 See A&S listing

Humanities Elective (9 hours)\*  
 Must be from 2 different areas - see A&S Core

Mathematics (6 hours)  
 MA 1313 College Algebra  
 ST 2113 Stats for Behavioral Sciences

Fine Arts (3 hours)  
 See A&S Core List

BIO 1004 Anatomy and Physiology  
 3-4 hours Natural Science Elective\*\*\*

Social Sciences (6 hours)  
 See University CORE

Social Sciences Electives (12 hours)\* +

**Major Core**

AN 1143 Intro to Cultural Anthropology  
 AN 1343 Intro to Biological Anthropology  
 AN 1543 Intro to Archaeology  
 21 hours Anthropology Upper Div Electives (See advisor)  
 3 hours Anthropology lower or upper division Elective

Writing Requirement (3 hours)  
 AN 4123 Anthropological Theory

Computer Literacy (3 Hours)  
 AN 4143 Ethnographic Methods **or**  
 AN 4503 Introduction to Method and Theory in Arch **or**  
 Course approved by advisor

General Electives (12-15 hours) Consult advisor

**Total hours needed for major: 128**

32 hours of course work must be A&S 3000/4000

\* Consult Advisor.  
 \*\* See University CORE.  
 \*\*\* Consult advisor.  
 \*\*\*\* Course has prerequisite. Please check course description in back of this catalog or consult advisor.  
 \*+ Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. Consult advisor.

Natural Sciences (9-12 hours)  
 3-4 hours Physical Sciences w/lab (CH, GG, PH)\*\*



**SOCIAL WORK (SW)**

Program Director: Adele Crudden, Ph. D.  
Office: 218B Bowen Hall

The Social Work Program at Mississippi State University (Starkville campus only) is accredited by the Council on Social Work Education. Social work is both a challenging and rewarding profession with the primary goal of helping people help themselves. The Bachelor of Social Work (BSW) degree is recognized by the profession of social work as the first practice degree. The BSW graduate is prepared to work as a generalist social work practitioner in a variety of practice settings. These include, but are not limited to the following: child welfare service agencies, family services, medical hospitals, mental health clinics, public health clinics, home health agencies, nursing homes, industries, juvenile and family court, shelters for battered women and children, neighborhood and community services.

The social work program incorporates a liberal arts perspective into the social work curriculum. This liberal arts perspective enhances the person-environment focus of generalist social work practice. Although students may declare social work as a major upon admission to the University, there is a formal admission process into the social work program. The criteria for admission into the program includes:

1. Cumulative GPA of 2.0
2. Completion of the following social work courses with a minimum grade of "C":  
SW 2303 Social Welfare Policy I  
SW 3013 Human Behavior in the Social Environment I
3. Completion of SW 2213 Intro to Social Work (including 20 hrs of volunteer experience) with a minimum grade of "B";
4. Completion of "Application for Admission";
5. Students must complete an application with three reference letters and complete personal interview with Social Work Admissions Committee prior to enrolling in further social work courses.

Additional courses, as noted in the application for admission form, must be completed prior to petition for admission to the major.

Before enrolling in any social work classes, it is the responsibility of the student to consult with their social work advisor regarding any prerequisites for social work classes.

The criteria for remaining in the program includes:

1. Maintain an overall GPA of 2.0, with a 2.5 GPA for all social work courses.
2. Must earn a minimum of a "C" in each social work course.
3. Continue to demonstrate an aptitude for a social work career.
4. Adhere to all academic expectations of the university and the social work program.
5. Adhere to the National Association of Social Workers Code of Ethics.

**University and College Core**

English Composition (6 hours)

- EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

- EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)

4 semesters one Foreign Language - see advisor

Humanities (6 hours)

- 3 hours Literature - see University CORE  
3 hours History - see University CORE

Philosophy (3 hours)

- PHI 1103 Introduction to Philosophy **or**  
PHI 1113 Introduction to Logic **or**  
PHI 1183 Honors Intro to Philosophy **or**  
PHI 1193 Honors Intro to Logic

Humanities Elective (9 hours)\*

- 3 hours Literature Elective  
3 hours History Elective  
3 hours Humanities Elective

Mathematics (6 hours)

- MA 1313 College Algebra **or**  
MA 1303 Quantitative Algebra  
ST 2113 Stats for Behavioral Sciences

Fine Arts (3 hours)

See A&S Core List

Natural Sciences (9-12 hours)

- BIO 1004 Anatomy and Physiology  
3-4 hours Physical Sciences w/lab (CH, GG, PH)\*\*  
3-4 hours Natural Science Elective\*\*\*

Social Sciences (6 hours)

- SO 1003 Intro to Sociology  
PS 1113 American Government

Social Sciences Electives (12 hours)

Required:

- SW 3003 Populations at Risk\*  
PSY 1013 General Psychology  
EC 2113 Prin of Macroeconomics  
AN 1103 Intro to Anthropology **or**  
AN 1143 Intro to Cultural Anthropology

**Major Core**

(See advisor for course sequencing)

- SW 2303 Social Welfare Policy I  
SW 2313 Intro SW/Soc Welfare  
SW 2323 Soc Welfare Policy II\*\*\*\*  
SW 3013 Hum Behav SE\*\*\*\*  
SW 3023 Hum Beh SE II\*\*\*\*  
SW 4613 Child Welfare Service  
SW 3213 Intro Social Research Methods\*\*\*\*  
SW 4623 SW with the Aged **or**  
SW 4633 SW in Health Care **or**  
SW 4643 SW Services in Schools

Students must successfully complete a formal admissions process prior to taking the following courses:

- SW 3513 SW Practice I\*\*\*\*  
SW 3523 SW Practice II\*\*\*\*  
SW 3533 SW Practice III\*\*\*\*

Field Work includes full-time placement for one semester in a supervised agency setting.

- SW 4916 Field Work Prac\*\*\*\*  
SW 4926 SW Field Work Prac\*\*\*\* II

Writing Requirement (3 hours)

- SW 4713 SW Senior Seminar\*\*\*\*

Computer Literacy (3 Hours)

Consult Advisor

General Electives (3 hours)

Consult advisor

**Total hours needed for major: 132**

32 hours of course work must be A&S 3000/4000

\* Consult Advisor.

\*\* See University CORE.

\*\*\* Consult advisor.

\*\*\*\* Course has prerequisite. Please check course description in back of this catalog or consult advisor.

**SOCIOLOGY (SO)**

Major Advisor: Professor James Jones  
Office: 210 Bowen Hall

The following degree programs are offered: Bachelor of Arts, Master of Science and Doctor of Philosophy.

Sociology is the scientific study of social life in all of its manifold interrelationships. With an interest in understanding human behavior, sociologists study such special areas as deviant behavior, social organization, stratification, population, community, social institutions, race and ethnic relations, social problems, theory and methods of research.

Sociology majors are well prepared to enter many rewarding positions in the work force right out of college or further graduate training in law, business, community planning, architecture, medicine, politics or academics. Opportunities for employment include, but are not restricted to entry-level positions in administration, advertising, banking, counseling (family planning, career, substance abuse, etc.) health services, journalism, group and recreation work, marketing and market research, sales, teaching, criminal justice, social services and social research. In addition, sociology provides training that other liberal arts majors do not, such as in the basics of human interaction and relationships, and basic training for research analyst positions (in statistics and research methods, which include computer applications, for example).

Students are eligible for membership in the Mississippi Alpha chapter of Alpha Kappa Delta, the International Sociology Honor Society. To be considered for membership, a student must be an officially declared sociology major or demonstrate a serious interest in sociology, must be at least a junior, have at least a 3.00 overall GPA, and must have maintained a 3.00 GPA in sociology courses.

To earn a Bachelor of Arts degree with a major in sociology, a student is required to take thirty-six (36) hours of sociology.

**Sociology Major with a Specialization Course Requirements**

The sociology major consists of a sequence of five levels of courses ranging from introductory to the more advanced and capstone courses. Students are expected to complete courses in the lower levels before taking courses in the next higher levels. For example, students should complete Level I courses before completing Level II courses, etc. The lower courses are prerequisites for the more advanced level courses.

**Selecting a specialization.** There are two types of courses to complete at Level IV, specialization and elective courses. With the assistance of their advisor, students will select the specialization that best fits with their post-graduate plans. Each specialization is described below.

**Population and Environment Specialization.** Students planning to pursue a career in some aspect of business or in some government agencies may want to consider selection this specialization since these courses will focus on information and skills needed in the economic sector of society.

**Family and Gender Studies Specialization.** Students planning to work in private or government agencies that provide personal or social services to various populations in society will want to consider this specialization. The topics covered and the skills developed in these courses will provide much needed background information and understanding for working with persons and groups.

**Socio-Economic Development Specialization.** This specialization was developed for students that anticipate working in the area of socio-economic development at the community, state or national levels. The knowledge and background necessary to work effectively in various private and public organizations/agencies that focus on social and/or economic development is provided. Courses in this area focus on knowledge of the social forces and processes operating in specific environments that may facilitate or inhibit development and foster the ability to analyze relevant information and data.

**General Sociology Specialization.** Often students wish to obtain a more traditional liberal arts major by selecting courses that interest them personally. This specialization is the logical choice for these students.

**Level I Courses:** Introduction to the Discipline (regarded as part of the University Core)

SO 1003 Introduction to Sociology and  
Any social science core course (AN, CO, EC, GR, PS, PSY, SO)

**Level II Courses: Core Substantive Courses (6 hours)**

**Required: SO 2203 Cultural and Racial Minorities**

Complete any one of the following courses:

SO 3013 Society and the Individual  
SO 3003 Social Inequality  
SO 3053 Organizations in Modern Society

**Level III Courses: Tools and Skills Courses (6 hours)**

SO 3103 Social Theory  
SO 3213 Introduction to Social Research

**Level IV Courses : Specialization and Elective Courses (21 hours)**

Specialization: Take any three courses in one of the Specializations A-D below. (9 hours)

<i>A. Population &amp; Environment</i>	<i>B. Family and Gender Studies</i>	<i>C. Socio-Economic Development</i>	<i>D. General Sociology</i>
SO 4113 Soc Org & Change	SO 3323 Contemporary Woman	SO 3303 Rural Sociology	Select any three 3000 or 4000 level
SO 4123 Poverty Analysis	SO 4203 Family in the U.S.	SO 4123 Poverty Analysis	sociology courses, including any of
SO 4173 Environment & Society	SO 4223 Comparative Family	SO 4173 Environment & Society	those not listed above. A minimum
SO 4303 Urban Sociology	SO 4403 Sex Roles & Gender	SO 4303 Urban Sociology	of two of these courses must be
SO 4703 Pop Probs & Processes	SO 4703 Pop Probs & Processes	SO 4703 Pop Probs & Processes	4000 level.
		SO 4733 Community: Org & Rels	

Electives: Select four 3000 or 4000 level sociology courses. (12 hours) Students are encouraged to take additional courses in their specializations, if offered before the student graduates.

**Level V Course: Capstone (3 hours) Research paper in area of specialization expected.**

SO 4803 Social Research Practice  
Total Sociology Courses: 12 (36 hours)

**Other Requirements:**

It is strongly recommended that all majors take PS 1113 American Government (or 1193), EC 2113 Macro Econ (or 2183), and EC 2123 Micro Econ (or 2193).

**Sociology Minor**

To earn a minor in sociology, a student must take eighteen (18) hours of undergraduate sociology courses. SO 1003, 2203, and 3213 are required. The other three SO courses must be the 2000 level or above and include at least one 4000 level SO course.

Students who wish to major or minor in the department should plan their programs with the departmental major advisor as soon as possible after entering the University and should consult with their advisor before each registration period. Programs are arranged individually to combine the most varied advantages consistent with the student's interest and purposes. Persons interested in secondary school teaching may elect sufficient courses in the College of Education to satisfy certification requirements for teaching social studies.

Suggested Course of Study for a general major in Sociology:

**Sociology Major****University and College Core**

English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
 4 semesters one Foreign Language - see advisor

Humanities (6 hours)  
 3 hours Literature - see University CORE  
 3 hours History - see University CORE

Philosophy (3 hours)  
 3 hours Elective - see advisor

Humanities Elective (9 hours)  
 Must be from 2 different areas - see A&S Core

Mathematics (6 hours)  
 MA 1313 College Algebra  
 ST 3113 Statistics

Fine Arts (3 hours)  
 See A&S Core List

Natural Sciences (9-12 hours)  
 3-4 hours Physical Sciences w/lab (CH, GG, PH)\*  
 3-4 hours Biological Sciences w/lab (BIO, EPP, PO)\*  
 3-4 hours Natural Science Elective\*\*

Social Sciences (6 hours)  
 SO 1003 Intro to Sociology  
 3 hours See University CORE

Social Sciences Electives (12 hours)\*\*\*  
 Consult advisor

**Major Core**

Courses in the major are sequenced by level.  
 Level I: Intro to the discipline - see social sciences requirement above  
 Level II: Sociology Substantive Core (6 hours)  
 SO 2203 Cultural/Racial Minorities  
 SO 3003 Social Inequality **or**  
 SO 3013 Society and the Individual **or**  
 SO 3053 Organizations in Modern Society

Level III: Tools and Skills (6 hours)  
 SO 3103 Social Theory  
 SO 3213 Intro Social Research

Level IV: Specialization and Electives  
**Specialization** (9 hours) - any three courses in one of the Specializations A-D mentioned above.  
**Electives** (12 hours) - Four 3000 or 4000 level SO courses\*\*\*\*

Level V: Capstone (3 hours)  
 (Research paper in area of specialization required.)  
 SO 4803 Social Research Practice

Writing Requirement (3 hours)  
 SO 3103 Social Theory (see Level III above)

Computer Literacy (3 hours)  
 SO 3213 Intro to Social Research (see Level III above)

General Electives (18 hours)  
 Consult advisor

**Total hours needed for major: 128**  
 (32 hours must be 3000/4000 from A&S)

\* See University CORE.

\*\* Consult advisor.

\*\*\* Must be from 2 different areas and must cross 4 disciplines over the 18 hours. Only one Economics allowed. See advisor. Recommended: PS 1113 or 1193, EC 2113 or 2183, EC 2123 or 2193.

\*\*\*\* Students are encouraged to take additional courses in their specialization if offered before the student graduates.

**Criminal Justice and Corrections Certificate**

Program Director: Dr. Peter B. Wood  
 Office: 217 Bowen Hall

The Criminal Justice and Corrections Certificate Program is administered through the Department of Sociology, Anthropology, and Social Work. Participation in this program is available to all Departmental majors, as well as those majoring in any other fields (e.g., psychology, political science, computer science, or business).

Criminal Justice and Corrections is an ever expanding field of study. It involves the study of crime, crime control, and the administration of justice. This includes the study of the structure, functions, and decision processes of all administering components within the system. Components of the system include such things as: Law Enforcement; Criminal Courts; Juvenile Court; Jails; Prisons; Probation; Community-Based Corrections; Parole System. Criminal Justice and Corrections is also inherently linked to the broader study of crime, delinquency, deviant behavior, and social pathology.

The mission of the Criminal Justice and Corrections Certificate Program is to prepare students for challenging careers in the criminal justice/corrections professions. Underlying our mission is a strong commitment to providing students with a solid theoretical foundation of relevant issues, as well as equally important practical information and experiences germane to their professional development. Key in achieving this is our two stage curriculum format where students receive both traditional classroom instruction and experiential training through an internship program. Thus, the Criminal Justice and Corrections Program is designed to provide a broad-based education for students interested in the field of crime and justice studies and to prepare students to assume leadership roles with crime and justice.

**Sociology Degree/Criminal Justice and Corrections Certificate****University and College Core**

English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Foreign Language (12-14 hours)  
 4 semesters one Foreign Language - see advisor

Humanities (6 hours)  
 3 hours Literature - see University CORE  
 3 hours History - see University CORE

Philosophy (3 hours)  
 PHI 1103 Introduction to Philosophy **or**  
 PHI 1113 Introduction to Logic **or**  
 PHI 1123 Introduction to Ethics

Humanities Elective (9 hours)  
 Must be from 2 different areas - see A&S Core

Mathematics (6 hours)  
 MA 1313 College Algebra  
 ST 2113 Stats for Behavioral Sciences

Fine Arts (3 hours)  
 See A&S Core List

Natural Sciences (9-12 hours)  
 3-4 hours Physical Sciences w/lab (CH, GG, PH)\*  
 3-4 hours Biological Sciences w/lab (BIO, EPP, PO)\*  
 3-4 hours Natural Science Elective\*\*

Social Sciences (6 hours)  
 See University CORE

Social Sciences Electives (12 hours)\*\*\*  
 PSY 1013 General Psychology  
 AN 1143 Cultural Anthropology  
 6 hours SS electives - see University CORE

**Major Core**

SO 1003 Intro to Sociology\*\*\*\*  
 SO 2203 Cultural/Racial Minorities  
 SO 3213 Intro Social Research

SO 3103	Social Theory*+
SO 4803	Social Research Practice
COR 3103	Criminal Justice System
SO 3603	Criminology
SO 4233	Juvenile Delinquency
SO 4513	Correctional Systems
COR 3310	Field Work I (6 hours)
COR 3320	Field Work II (6 hours)
6 hours	COR Electives

Choose two of the following:

SO 3313	Deviant Behavior
SO 3503	Violence in the U.S.
SO 3343	Gender, Crime, and Justice
PS 4183	Judicial Processes*++
PSY 4213	Psychology of Abnormal Behavior*++
PSY 4223	Drug Use and Abuse*++
SW 4623	Child Welfare Services

Computer Literacy (3 hours)

If SO 3213 and SO 3223 are taken, this requirement is fulfilled.

Free Electives

3-9 hours Consult advisor

**Total hours needed for major: 128**

\* See University CORE.

\*\* Consult advisor.

\*\*\* Must not be Sociology or Cj/COR courses. With Social Science Core, must cross 4 disciplines over the 12 hours. Only one Economics allowed. See advisor.

\*\*\*\* Satisfies Core Social Science requirement.

\*+ Satisfies Core Writing Requirement.

\*++ Satisfies Social Science Electives.

### **Criminal Justice and Corrections Certificate with a major other than Sociology (33 hours)**

The Criminal Justice and Corrections Certificate can also be earned in combination with any other degree program from any College. Specific Criminal Justice and Corrections Certificate requirements are as follows:

Required Courses (27 hours)

SO 2203	Racial and Ethnic Minorities
COR 3103	Criminal Justice System
SO 3603	Criminology
SO 4233	Juvenile Delinquency
SO 4513	Correctional Systems
COR 3310	Field Work I (6 hours)
COR 3320	Field Work II (6 hours)

6 hours	Electives - from the following list:
AN 3313	Human Identification
SO 3313	Deviant Behavior
SO 3343	Gender, Crime and Justice
SO 3503	Violence in the US
PS 4183	Judicial Processes
PSY4213	Psychology of Abnormal Behavior
PSY 4223	Drug Use and Abuse
SW 4623	Child Welfare Services

### **STATISTICS (ST)**

See Department of MATHEMATICS and STATISTICS

### **THEATER**

See Department of COMMUNICATION

### **WOMEN'S STUDIES CONCENTRATION**

Contact: Dean of Arts and Sciences  
 Director: Dr. Meg McGavran Murray  
 Offices: 312 E Lee Hall  
 Ellen Bryant Center for Women's Studies  
 Rice Residence Hall

Women's Studies is an academic discipline concerned with the contributions and struggles of women. Mississippi State University uses an interdisciplinary approach to enhance students' knowledge of the effect of women in all fields of study. MSU offers through its College of Arts and Sciences a Women's Studies Concentration of fifteen semester hours of course work to be selected from a specified group of appropriate courses. This concentration is intended to enhance students' sensitivities to issues relating to gender in contemporary societies, with a special focus on American society. Women's Studies' classes, lectures, and special events are open to both women and men. This concentration is an optional grouping in addition to major and core requirements. Completion of approved courses will be recognized by awarding a certificate signed by the chair of the Women's Studies Advisory Committee and the Dean of the College of Arts & Sciences.

To earn a certificate a student must have at least 15 credit hours distributed as follows:

1. Students must complete the introductory course SO/AN 3323 Contemporary Woman.
2. Students must complete at least two (2) of the Core courses.
3. Students must complete an additional two (2) courses. These courses may be from the core or electives; however, only one may be from the additional electives course offerings.
4. Finally, students cannot have more than nine hours from any one department count toward the certificate.

#### **Approved Courses**

##### **Core Courses**

SO/AN 3323 Contemporary Woman

SO/AN 2203	Cultural and Racial Minorities
SW 2303	Social Welfare Policy I
SW 2313	Intro to Social work and Social Welfare

##### **(Choose at least two Courses)**

COE 4743	Gender Issues in Counseling
EN 3513	Women and Literature
HI 4273	Women in American History
PHI 4313	Feminist Interpret of West Social & Polit Phil
PS 3033	Gender and Politics
PSY 3203	Psychology of Gender Differences
SO 4403	Sex Roles and Gender

##### **Electives (see above)**

HS 3303	Consumer Economics in Counseling
HS 4313	Family Resource Management
HI 4283	History of Southern Women
PSY 4983	Psychology of Aging
SO 1203	Marriage and Family

##### **Additional Electives**

(Choose no more than one. These courses must be approved by the Women's Studies Advisor)

EDF 3333	Social Foundations of Education
HS 3573	Historic Costume
HS 4403	Introduction to Gerontology
HS 4513	Social-Psychological Aspects of Clothing
SO 4203	The Family in the United States
3 hours	Directed Ind Study (from appropriate dept)

Other Additional Elective courses may be appropriate depending on course content and instructor, please contact the Women's Studies Advisor with questions concerning other options.

## COLLEGE of BUSINESS and INDUSTRY

SARA M. FREEDMAN, Dean

LOUIS M. CAPELLA, Associate Dean for Internal Affairs

Offices: Suite 104 McCool Hall

Telephone: (662) 325-2580

Business Research and Business Services

Office: Suite 218 McCool Hall

Telephone: (662) 325-3817

Mailing Address: Box 5288, Mississippi State, MS 39762

E-mail Address: [cobi@cobilan.msstate.edu](mailto:cobi@cobilan.msstate.edu)

### HISTORICAL INFORMATION

The College of Business and Industry, organized in 1915, is the oldest college of business in the state and one of the oldest in the South. In 1979, the Department of Accounting was designated as the School of Accountancy in answer to a need for attention to the unique requirements of the growing profession of accountancy.

This college permits students to major in any of the following programs: Accounting, Banking and Finance, Information Systems, Economics, General Business Administration, GBA-Furniture Management Track, GBA-International Business/Foreign Languages (double degree), Management, Management of Construction and Land Development, Marketing, Marketing-Transportation, Real Estate and Mortgage Appraisal Financing, Risk Management, Insurance and Financial Planning, and Marketing—Professional Golf Management. The College offers degree programs that lead to baccalaureate, master's and doctoral degrees. Dis-

tance learning through interactive classrooms and internet courses is another avenue available to pursue course work for College of Business and Industry students. Minors are available in most program areas.

### MISSION

The mission of the College of Business and Industry is to develop knowledge and critical skills in students, and to foster economic and professional development through teaching, research, and service.

### ACCREDITATION

The undergraduate, masters, and doctoral business programs are accredited by the AACSB (The International Association of Management Education). The School of Accountancy is separately accredited at the undergraduate and masters levels by AACSB.

### ORGANIZATION

The administrative units of the College of Business and Industry consist of the School of Accountancy and the Departments of Finance and Economics; Management and Information Systems; and Marketing, Quantitative Analysis, and Business Law. In addition to these units, the college includes the Office of Graduate Studies in Business, the Division of Business Research, the Division of Business Services and the College of Business and Industry Academic Advising Center. The administrators of these units are as follows:

Unit	Name	Office	Phone(662)
School of Accountancy 384 McCool Hall	Danny Hollingsworth, Director 325-3710	Division of Business Research 240 McCool Hall	325-3817
Finance and Economics 326 McCool Hall	Paul Grimes, Head 325-2341	Division of Business Services 238 McCool Hall	325-3817
Mgt & Info Systems Department 3103 McCool Hall	Garry D. Smith, Head 325-3928	COBI Academic Advising Center 221 McCool Hall	Vergie Bash, Coordinator 325-1890
Mkt, Quan Analysis & BL Dept 301 McCool Hall	Brian Engelland, Head 325-3163	COBI Academic Advising Center 221 McCool Hall	Courtney Altizer, Acad. Coord. 325-1890
Graduate Studies 247 McCool Hall	Barbara Spencer, Director 325-1891		

Directors and managers of other academic and professional support units in the College of Business and Industry are:

Unit	Name	Office	Phone(662)
Small Business Development Ctr Research & Technology Park	Sonny Fisher, Director 325-8684	Robert W. Warren Chair of Real Est 326 McCool Hall	Bill Hardin, Prog Coordinator 325-7478
International Bus Strategy Progr 3103 McCool Hall	J.P. Shim, Director 325-3928	Furniture Management 221 McCool Hall	Teresa Hooper, Prog Coord 325-1890
Computing Services 206 McCool Hall	Steve Canfield, Manager 325-1545	International Business Program 355 McCool Hall	John Lox, Director 325-1996
Banking Excellence Program 326 McCool Hall	Larry White, Director 325-2341	Professional Golf Management 350 McCool Hall	Scott Maynard, Director 325-3161
Peter Koch Lutken Chair of Ins 326 McCool Hall	Eddie Duett, Interim Chair 325-2341		

### SUPPORT SERVICES

#### COBI Academic Advising Center

Coordinator: Vergie Bash  
Admissions Coordinator: Teresa Hooper  
221 McCool Hall: 325-1890

The College of Business and Industry (COBI) Academic Advising Center provides centralized advising resources to students (current, prospective, and alumni), parents, faculty, and support staff. The Academic Advising Center maintains the official records of COBI students (Accounting majors should see the Director of Accountancy). The Center represents the Dean on all academic paperwork such as transfer evaluations, off-campus requests, withdrawals, overload requests, degree audits, change of majors, and correspondence course approvals.

All General Business Administration majors and freshmen are advised through the COBI Academic Advising Center.

### Employment Service

The College of Business and Industry endeavors, in cooperation with the Career Center (located at 316 Colvard Union), to arrange employment interviews for graduating seniors. Former graduates seeking employment or change of position are urged to keep the Career Center informed as to availability.

### Computing Facilities

The College of Business and Industry is committed to providing experience and training on a variety of computer platforms that are commonly used in the modern business community. The main computing needs of the College are served by a large-scale local area network composed of more than three hundred IBM compatible computers. These systems are linked through a Novell network to College-wide servers that provide access to educational software, administrative databases and research facilities.

The College uses electronic mail as one of its primary communication methods; many professors use e-mail to enhance the classroom experience. Anyone enrolled in a COBI class is eligible to receive their own personal electronic mail account.

COBI is directly connected to the Internet, a world-wide network linking many educational, government, and commercial groups. In addition, a number of research databases are provided to aid in statistical analysis and other class projects. Lexis/Nexis, Compustat and CRSP are a few of the available databases.

The Ron J. and Carol M. Ponder Lab is a state of the art facility used by students for the completion of computer-related assignments. The Leo Seal Electronic Classroom is reserved by professors to illustrate computer-related concepts in the classroom. In addition, other more specialized computer labs exist, and presentation systems help to augment classroom demonstrations. The College of Business and Industry also offers a computerized multimedia lab, used in classes to help prepare students for the communication and decision making skills required of professionals in business and industry today.

## RULES FOR SCHEDULING COURSES

The normal load for an undergraduate student in a regular semester is 15-18 credit hours. Mississippi State University has established undergraduate student course limits based on cumulative and MSU grade point averages. (See Item III, Student Load, Degree Requirements, Advisement, The Academic Process.)

### Admission

**Admission into the College of Business and Industry for Transfer Students-** Students wishing to transfer into the College of Business and Industry from another institution or from another major at MSU must meet certain grade point average requirements. Juniors and seniors must have a minimum 2.50 overall and MSU grade point average; sophomores must have a minimum 2.25 overall and MSU grade point average; and freshmen must have a minimum 2.0 overall grade point average to be admitted into the College of Business and Industry.

### Junior/Senior Screen

A student in the College of Business and Industry must achieve a 2.5 overall GPA and a 2.5 MSU GPA within a 54 to 70 hour window to continue as a business student. Students who do not meet the junior-senior screen (COBI or transfer) will not be permitted to register for 4000 level business classes.

## SCHOOL of ACCOUNTANCY

### DEGREE PROGRAMS

Major Advisor: Professor Danny Hollingsworth, Director  
Office: 381 McCool Hall

The School of Accountancy is a professional school whose mission is to prepare students for successful careers in accountancy. Such career preparation includes a wide range of professional accounting activities, general education, and broad training in business administration. This program of study gives students the basic preparation for positions in all areas of accounting including, but not limited to, public, private, and governmental accounting. It also (1) requires students to take a planned and coordinated non-business program designed to increase their cultural appreciation and give them a broad knowledge of world affairs and (2) permits the election of additional non-business courses according to the interests of the individual student.

The accountancy program is accredited by the AACSB (The International Association for Management Education) as part of the overall accreditation of the College of Business and Industry as well as the separate and additional accreditation of accounting programs.

### Certification

The Bachelor of Accountancy Degree (BACC) from the School of Accountancy, Mississippi State University, is recognized by those states requiring the baccalaureate degree as a minimum, as fulfilling all the educational requirements for eligibility to sit for the Certified Public Accountant (CPA) examination. It is also recognized as meeting educational requirements to sit for the Certificate in Management Accountant (CMA) and the Certified Internal Auditor (CIA) examinations. The Master of Professional Accountancy and Master of Taxation degrees fulfill all the educational requirements for eligibility to sit for the CPA examination in Mississippi and in other states that have adopted the 150 hour requirement. Graduates are encouraged to seek professional certification in one or more areas by passing these examinations.

The American Institute of Certified Public Accountants (AICPA) which prepares and grades the CPA examination, has urged the requirement of five years of academic preparation and has reflected this in the CPA examination. Students who aspire to become certified public accountants should consider the Master of Professional Accountancy or Master of Taxation programs herein described, in addition to the BACC.

### Admission

**Pre-Accountancy (PACC)** - All students desiring to major in accounting will be admitted into Pre-Accountancy in the School of Accountancy at Mississippi State University. Admission to the University is equivalent to admission to Pre-Accountancy. International students need a 575 TOEFL score to be admitted to Pre-Accountancy.

**Bachelor of Accountancy (BACC) Candidate** - Requirements for admission as a candidate for the BACC degree are listed below. Students will not be allowed to take 4000 level accounting courses and may only take two 3000 level courses if they have not been admitted to the School of Accountancy.

1. A student must complete sixty hours or more of college credit earned toward the BACC degree.
2. A student must complete the pre-accountancy core with a 2.6 GPA on all college work attempted and a 2.6 GPA on the 18 hours of pre-accountancy core.
3. A student must complete Principles of Financial Accounting and Principles of Managerial Accounting with at least a "B" in each of the two courses.

### Graduation

**Bachelor of Accountancy (BACC)** - Requirements for a BACC Degree from the School of Accountancy are listed below. It is the student's responsibility to complete the requirements of the BACC curriculum before applying for a degree.

1. A student must be a BACC candidate and complete the required curriculum and a minimum of 128 semester hours.
2. A student must achieve at least a 2.5/4.00 GPA in upper-division business, economics, and statistics courses.

- A student must achieve at least a 2.5/4.00 GPA in upper-division accounting subjects with at least a "C" in each accounting course. A student who makes less than a C in an upper-division accounting course must repeat that course the next regular semester that the student is enrolled and the course is offered. Students will be permitted to repeat an upper-division accounting course only once in an effort to make a "C" in the course. If they make less than a "C" in two attempts in a specific course, they will no longer be able to continue in the accounting program.
- A student must achieve an overall and MSU GPA of at least 2.5/4.00.

### BACC Program of Study

#### University Core

English Composition (6 hours)

EN 1103 English Composition I **or**  
EN 1163 Accelerated Composition I **or**  
EN 1183 Honors Composition I

EN 1113 English Composition II **or**  
EN 1173 Accelerated Composition II **or**  
EN 1193 Honors Composition II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics & Statistics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences

Natural Science (6 hours)

2 courses with labs from University CORE

Math or Science (3 hours) select for following:

MA 1323 Trigonometry  
MA 1463 Finite Mathematics & Introduction to Calculus  
MA 1623 Calculus for Business & Life Sciences II  
MA 1713 Calculus I or MA 1763 Honors Calculus I  
MA 1723 Calculus II or MA 1773 Honors Calculus II

Humanities (6 hours)

Refer to University CORE

Fine Arts (3 hours)

Refer to University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government  
3 hours from University CORE (excluding: AEC, AS, EC, MS)

#### Accounting Major Requirements

Pre-Accounting Core (18 hours)

ACC 2013 Principles of Financial Accounting **or**  
ACC 2083 Honors: Accounting Principles I  
ACC 2023 Principles of Managerial Accounting **or**  
ACC 2093 Honors: Accounting Principles II  
EC 2113 Principles of Macroeconomics **or**  
EC 2183 Honors: Principles of Macroeconomics  
EC 2123 Principles of Microeconomics **or**  
EC 2193 Honors: Principles of Microeconomics

BL 2413 The Legal Environment of Business  
BQA 2113 Business Statistical Methods I

International Elective (3 hours)

(see School of Accountancy for list)

Computer Literacy (3 hours)

BIS 1013 Introduction to Business Computer Systems **or**  
CS 1013 Basic Computer Concepts and Applications

Upper-level Business Courses (25 hours)

MGT 3114 Principles of Management & Production  
MGT 3213 Organizational Communications I\*  
BQA 3123 Business Statistical Methods II  
BL 3223 The Law of Commercial Transactions  
MKT 3013 Principles of Marketing  
BIS 3233 Introduction to Management Information Systems  
FIN 3123 Financial Management  
GB 4853 Business Policy

Business Ethics (3 hours)

PHI 3013 Business Ethics

Writing/Communication Course (3 hours) Select from the following:

EN 3303 Creative Writing  
EN 4223 Legal Writing  
CO 2213 Small Group Communication  
CO 2253 Fundamentals of Interpersonal Communication

Upper-level Accounting Courses (24 hours)

ACC 3003 Accounting Information Systems I  
ACC 3013 Cost Accounting  
ACC 3023 Intermediate Accounting I  
ACC 3033 Intermediate Accounting II  
ACC 3053 Accounting Information Systems II  
ACC 4013 Income Tax I  
ACC 4033 Auditing  
Accounting Elective (ACC 4023 Advanced Accounting **or**  
ACC 4043 Municipal & Governmental Accounting **or**  
ACC 4053 International Accounting **or**  
ACC 4063 Income Tax II)

Non-business Electives (7 hours) Consult Advisor

Free Electives (3 hours) Consult Advisor

**Total hours for degree: 128**

\* Fulfills Jr./Sr. Writing Requirement.

### Accounting Minor

Students may obtain a minor in accounting by completing 15 hours of upper-level accounting courses with a C or better as follows:

ACC 3023 Intermediate Accounting I.....	3	ACC Electives* .....	9
ACC 3033 Intermediate Accounting II .....	3		

### Double Degree in Accounting and Another Field

Combined curricula leading to a BACC degree and a degree in another field are available in the School of Accountancy and the other colleges of Mississippi State University. Such curricula may be designed with a major in accounting combined with a major in any non-accounting field. This program requires that a student satisfy the normal graduation requirements in the other major as well as meet the GPA and course requirements of the BACC Degree.

### The BACC as a Second Baccalaureate Degree

The curriculum is available to students who hold a baccalaureate degree in any recognized field of study from a regionally accredited institution. The candidate's combined undergraduate program must include the same course and GPA requirements as required of anyone who receives the BACC degree. A minimum of 32 semester hours of upper division work must be earned in residence at Mississippi State University after the first degree has been conferred. Consult the Director, School of Accountancy, P.O. Drawer EF, Mississippi State, MS 39762 or email: sac@cobilan.msstate.edu for specific details.

### MASTERS PROGRAMS IN ACCOUNTING

Edd Milam, MTX Advisor  
Clyde Herring, MPA Advisor  
Departmental Office : McCool 381  
(662) 325-3710

The School of Accountancy offers two graduate programs in Accounting - Master of Professional Accountancy (MPA) and Master of Taxation (MTX). Additional information can be found in the Graduate Bulletin.

### Admission

**Master of Professional Accountancy (MPA) and Master of Taxation (MTX)** - Requirements for admission as a candidate for the MPA or MTX degree are listed below.

I. A student must receive a baccalaureate degree from an accredited four-year institution.

\* Students must meet required prerequisites for elective courses.

2. A student must achieve a GPA of 3.00/4.00 in the last 60 hours of baccalaureate work.
3. A student must take the Graduate Management Admission Test and achieve an acceptable score.
4. A student must achieve a GPA of 2.75/4.00 and no grade below "C" on all undergraduate upper-division accounting work.
5. A student must take all the prerequisites listed in the graduate bulletin.

**Graduation**

**Master of Professional Accountancy (MPA) and Master of Taxation (MTX)** - Requirements for an MPA OR MTX degree from the School of Accountancy are listed below.

1. A student must complete the required curriculum and a minimum of 30 graduate semester hours.
2. A student must achieve an overall GPA of at least 3.00/4.00 on graduate work attempted with no more than six hours of "C" grades.
3. A student must achieve a 3.00/4.00 GPA on graduate accounting work attempted.
4. A student must pass an end-of-program final examination.

**MPA Program of Study**

**Master of Professional Accountancy Program (MPA)** - Candidates must complete 30 hours of course work at the graduate level. At least 24 of the 30 hours must be taken from courses offered exclusively for graduate credit (8000 level).

**Required courses (15 hours):**

ACC 6023 Adv Accounting (If not taken as an undergraduate).....	3
ACC 6063 Income Tax II (If not taken as an undergraduate) .....	3
ACC 8013 Seminar in Fin Acc Theory.....	3
ACC 8023 Advanced Managerial Accounting .....	3
ACC 8033 Business Assurance Services .....	3

ACC 8093 Federal Taxation of Partnership, S Corporations, Trusts and Estates .....	3
ACC 8103 Income Taxation of Natural Resources .....	3

**Concentration in Systems**

In lieu of the above electives, a student may elect a concentration in systems by taking the following three courses:

ACC 8043 Information Technology Auditing .....	3
BIS 8213 Advanced Systems Development and Administration .....	3
BIS 8313 Advanced Database Design Administration .....	3

**Accounting Electives (6 hours):**

ACC 6043 Municipal and Government & Accounting .....	3
ACC 6053 International Accounting .....	3
ACC 8043 Information Technology Auditing .....	3
ACC 8053 Professional Accounting Policy and Research .....	3
ACC 8063 Research in Tax Practice and Procedures .....	3
ACC 8073 Taxation of Corporations and Shareholders .....	3
ACC 8083 Federal Estate and Gift Taxation .....	3

**Non-accounting Electives (9hours)**

Elect nine hours of Graduate non-accounting, business, and economic courses.

**MTX Program of Study**

**Master of Taxation (MTX) Program** - Candidates for the MTX degree must complete 30 hours of coursework at the graduate level including a core of 15 hours of taxation, as described below. At least 24 of the 30 hours must be taken from courses offered exclusively for graduate credit (8000 level).

**Required Tax Courses (15 hours):**

ACC 8063 Research in Tax Practice .....	3
ACC 8073 Taxation of Corporations & Shareholders .....	3
ACC 8083 Federal Estate and Gift Taxation .....	3
ACC 8093 Federal Taxation of Partnership, S Corporations, Trusts, and Estates .....	3
Elective - any 8000 level tax course .....	3

**Other Required Courses (6 hours)**

ACC 8013 Seminar in Financial Accounting Theory .....	3
ACC 8033 Business Assurance Services .....	3

**Electives (9 hours)**

Graduate level Business or Accounting courses .....	9
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Consult the Director, School of Accountancy, P.O. Box EF, Mississippi State, Mississippi 39762 for further information or E-mail: SAC@COBILAN.MSSTATE.EDU

**BACHELOR of BUSINESS ADMINISTRATION DEGREE PROGRAMS**

**Graduation Requirements**

The admission/readmission requirements for the Bachelor of Business Administration degree are described in Part I, Section II of this catalog. In addition to the University's minimum requirements, the following requirements must be met for students applying for graduation:

- Pass 128-154 applicable hours
    - Take a minimum of 64 semester hours from a senior college
    - Take a minimum of 32 upper level business hours at MSU
    - Complete the last 32 hours in residence at MSU
  - Have at least a:
    - 2.25 GPA on all upper level business courses attempted,
    - 2.00 GPA on all MSU course work attempted, and
    - 2.00 GPA on all course work attempted.
  - Have no more than two D's in upper level business courses. In excess of 2 D's will have to be repeated with a grade of C or better.
- It is the student's responsibility to be sure that he/she has fulfilled the requirements of the particular curriculum before applying for a degree. Students must complete a graduation audit in the COBI Academic Advising Center prior to graduation.

Beginning with the 2004 fall semester, the following additional graduation requirements become effective:

- 2.50 overall GPA
- 2.50 MSU GPA
- 2.50 GPA on all upper-level business courses attempted
- 2.50 GPA on all major courses attempted

**COLLEGE-WIDE DEGREE COURSE REQUIREMENTS**

The College of Business and Industry requires each student to take a planned and coordinated Arts & Sciences foundation designed to increase cultural appreciation and to give a broad knowledge of world affairs. Each program also permits the election of additional courses, according to the interests of the individual student. The total number of credits earned in the Arts & Sciences foundation program and other non-business courses shall not be less than 52 semester hours.



## INTERNATIONAL BUSINESS PROGRAM

### A Five-Year Double Degree Program: B.B.A. in General Business Administration & B.A. in Foreign Languages

John O. Lox, Director  
International Business Academic Program Office  
355-356 McCool Hall  
Major Advisors, Business Administration:  
Professor Capella; Associate Professor Addy  
Assistant Professors Rice; Assistant Professor Rezek  
Major Advisors, Foreign Languages:  
Professors Emplainscourt and Wiltrout; Associate Professor Jordan;  
Assistant Professor Eddington  
300 Lee Hall

The International Business Program provides students with an academic background and work experience to help ensure success in the marketplace. Students receive a double degree at graduation reflecting the dual concentration in Business: BBA (with an international focus + a specific discipline like Marketing or Finance); and in the Arts: B.A. (language and cultural proficiency). This is additional to the first two years of study developing abilities in writing, math, sciences, and computer literacy.

The hallmark of this program is a work internship, an outside the country work experience of a full summer or one semester duration (generally taken the last of the 4th year or beginning of the 5th year). This work is ideally reflective of the student's specific business discipline and language proficiency area. The student who selects to separate the work and abroad experience must petition the IB committee for approval. Minimum acceptable levels are 1) WORK: 10 continuous weeks of international tasks and responsibilities, 2) ABROAD: 6 continuous weeks in one location for cultural immersion. An International Business Co-Op Work program offers 3 semesters paid international work experience in concert with pursuing the academic degrees.

The total number of semester credit hours (SCH) will be 154 for most students. The program has five main components:

- (1) a core of basic skills, including courses in writing, mathematics, sciences, and communication (30 SCH);
- (2) a core of humanities and social science courses selected to fit the special needs of international business major, emphasizing both the history and culture of other societies and the ways these societies relate to our own (27 SCH);
- (3) intensive training to develop proficiency in one foreign language and its associated cultures and literatures (37);
- (4) a thorough grounding in business techniques and practices, including 33 SCH of general business courses, 12 SCH of international business courses, and 12 SCH in one of six functional/discipline emphasis in business (accounting, banking and finance, information systems\*, economics, management, marketing\*, or risk management, insurance and financial planning\*);
- (5) a one-semester internship program with an international business (3 SCH).

Students interested in following this recommended course of study should notify the Department Head of Foreign Languages and the Director of International Business Academic Program as soon as possible so that a plan of study can be developed in which courses are taken in the proper sequence.

\* Information Systems, Insurance, & Marketing functional emphasis areas will need an additional 3 credits in their program; for those taking the CPA exam, other coursework will be required.

### International Business

#### University Core

English Composition (6 hours)  
EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I  
  
EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II  
Public Speaking (3 hours)  
CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication  
Mathematics (6 hours)  
MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I  
Science (6 hours)  
Life Science and Lab (BIO prefix)  
Physical Science and Lab (CH, GG, OR PH prefix)  
Math/Science Elective (3 hours)  
ST 2113 Statistics for the Beh Sciences **or**  
ST 3113 Intro to Statistical Inferences  
Humanities (6 hours)  
EN 2273 World Literature I **or**  
World Literature II  
  
HI 1173 World History Since 1500 **or**  
HI 1223 Modern Western World  
Fine Arts (3 hours)  
Choose from the following:  
ARC 1013 Architectural Appreciation  
ARC 2313 History of Architecture I  
ART 1013 Art History I  
ART 1023 Art History II  
ART 1113 Art Appreciation  
ART 3143 Italian Renaissance Art History  
MU 1113 History and Appreciation of Music  
CO 1053 Introduction to Theatre  
PE 1123 History and Appreciation of Dance  
Social/Behavioral Sciences (6 hours)  
GR 1123 Introduction to World Geography  
AN 1143 Introduction to Cultural Anthropology

#### College of Arts and Sciences Core

PHI 3013 Business Ethics  
PS 1313 Intro to International Relations **or**  
PS 1513 Comparative Government  
HI 3000+ Upper-level History Elective (see advisor)  
SO 3000+ Upper-level Social Science Elective (see advisor)  
FLF/G/S 1114 French/German/Spanish I  
FLF/G/S 1124 French/German/Spanish II  
FLF/G/S 2133 French/German/Spanish III  
FLF/G/S 2143 French/German/Spanish IV  
FLF/G/S 3114 **or** FLS 3113 & 3111 Advanced Foreign Lang I  
FLF/G/S 3124 **or** FLS 3233 & 3121 Advanced Foreign Lang II  
FLF/G/S 3143 Civilization  
FLF/G/S 3313 Business French/German/Spanish I  
FLF/G/S 3323 Business French/German/Spanish II  
FLF/G/S 3523 Sur of French/German/Spanish Lit  
Foreign Language Elective - see FL advisor for options)

#### College of Business and Industry Core

ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy  
Computer Literacy Requirement  
BIS 1013 Intro to Business Computer Systems **or**  
CS 1013 Basic Computer Concepts and Apps

#### Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

#### Major Core

International Business Electives- 9-12 hours  
ACC 4053 International Accounting  
BL 4273 International Business Law  
EC 3513 Economic Systems of the World  
EC 4323 International Economic Relations  
FIN 4923 International Financial Management  
IB 3913 Principles of International Business  
IB 3933 International Marketing  
MGT 4613 Cross Cultural Management

3 hours Transportation Elective  
(BIS & INS majors must select 12 hours from the above list; all others must select 9 hours.)

IB 3900  
IB 4903  
2 hours

Internship Work  
Internship Work/ Academic Report  
Free Electives

Business Functional Emphasis  
15 hours Major Electives (Choose from ACC, BIS, EC, FIN, MGT, MKT, or INS) See Business Advisor for Options.

**Total hours needed for major: 154**

## Department of FINANCE and ECONOMICS

Professors Grimes (Head), C. Campbell, Duett,  
Kohers, and Liano;  
Associate Professors Blair, Glimer, Hardin, Kelly, Rogers, and White;  
Assistant Professors R. Campbell, de Hass, Millea, Rezek, and Thomas;  
Instructors Barnes and B. Campbell

The Finance and Economics Department has five majors and two minors, each with specific course requirements. Students interested in these programs should contact the Department.

### ECONOMICS

**Economics (EC).** Economics is the scientific study of how people and institutions make choices concerning the use of society's scarce resources. Applied to business, economics is primarily concerned with the decision-making of households and firms within a market context. The importance of economic analysis is recognized by its being the only social science in which a Nobel Prize is awarded. The B.B.A. in economics provides the analytical skills and empirical background needed to understand the dynamic problems facing businesses in the ever-changing economic environment. Career opportunities available to an economics graduate include management, research, and instructional positions with corporations, banks, economic development agencies, trade organizations, governments, and educational institutions.

An economics major or minor also helps prepare the student for graduate professional training in business, public administration, and law. The flexibility of the economics major is reflected in relatively high starting salaries and lifetime earnings of economists. Undergraduates at Mississippi State University may pursue an economics major through either the College of Business and Industry (B.B.A degree) as described here or through the College of Arts and Sciences (B.A. degree) as described elsewhere in this bulletin.

Students seeking the B.B.A. with a major in economics are required to complete all College of Business and Industry and university common core requirements. Majors are required to take MA 1613 Calculus for Business and Life Sciences I and are encouraged to take MA 1623 Calculus for Business and Life Sciences II. Elective courses should be chosen with the advisor's approval and used to enhance the student's overall program.

The economics faculty offers a minor in economics through the College of Arts and Sciences. This minor is open to any student regardless of major or college of enrollment. A minor in economics is attained by selecting, in consultation with the economics minor advisor, at least fifteen hours of economics course work. Three hours of courses from finance (FIN) or agricultural economics (AEC) may be applied to the economics minor with approval from the advisor. All economics minors must register with the economics minor advisor in the Department of Finance and Economics, 326 McCool Hall. Students with majors in business, engineering, agriculture, the social sciences, mathematics, and pre-law are especially encouraged to consider the economics minor.

Academic advising and career counseling are available from the economics faculty for both majors and minors. Students interested in the study of economics should contact the Department of Finance and Economics, 326 McCool Hall. Any student who completes 12 credit hours of economics with at least a 3.0 GPA and has an overall GPA of 3.0 or higher is eligible for membership in Omicron Delta Epsilon, the international honor society in economics.

#### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core *excluding*:  
MA 1303 Quantitative Reasoning  
MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government *and*  
3 hours from University CORE *excluding*:  
AEC, AS, EC, and MS

#### College Core

BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics

BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

#### Major Core

International Elective - Elect one of the following:

EC 3513 Economic Systems of the World  
EC 4303 Theory of Economic Development  
EC 4323 International Economic Relations

Required Courses:

EC 3113 Intermediate Macroeconomics  
EC 3123 Intermediate Microeconomics

Elect 4 of the following:

EC 3213 Labor Economics  
EC 3223 Intro to Industrial Organization  
EC 3333 Managerial Economics  
EC 3423 Government and Business  
EC 3513 Economic Systems of the World  
EC 4183 U.S. Economic History  
EC 4213 Personnel Economics  
EC 4223 Labor Law and Employment Policy  
EC 4303 Theory of Economic Development  
EC 4313 Intro to Regional Economics  
EC 4323 International Economic Relations  
EC 4333 Applied Regional Economics  
EC 4423 Introduction to Public Finance  
EC 4433 Problems in State and Local Finance  
EC 4523 History of Economic Thought

Non-business electives - 12 hours (see advisor for options)  
Free electives - 10 hours

**Total hours needed for major: 128**

**BANKING and FINANCE**

**Banking and Finance (BKFN)** - The Banking and Finance major requires 128 credit hours and leads to a Bachelor of Business Administrations degree. For some specialization, students may choose from a list of electives. All Banking and Finance majors must complete an Internship which provides field experience prior to graduation. (A Special Problems course may be arranged for situation in which an internship is unavailable.) The degree plan also allows students to supplement their studies with a variety of business and non-business electives. By carefully selecting these elective courses, students may develop a program of study that fits their interests and career preparation needs. In order to maximize the benefits of their degree, students are strongly encouraged to work closely with a faculty advisor in securing an Internship and developing their personal program of study.

The career opportunities for Banking and Finance majors are varied and challenging. The program prepares graduates for decision-making positions in both the public and private sectors. Many graduates accept positions within the banking industry, including commercial banks and federal and state bank regulating agencies. Recent graduates have also found career opportunities as financial analysts and consultants with major corporations and private enterprises throughout the United States. Banking and Finance majors may pursue a wide variety of rewarding careers. MSU graduates can be found working as: Bank Examiners, Financial Managers, Bank Officers, Financial Planners, Management Consultants, Financial Analysts, Investment Managers, Credit Analysts, Loan Officers, and Pension Fund Managers. These career opportunities require an in-depth knowledge of finance and a solid foundation in analytical and communications skills. The opportunities for Banking and Finance majors are excellent; graduates, with the proper preparation, have only to choose which career path to follow.

Banking and Finance minors and double majors are available for both business and non-business majors. For specifics, see below.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core *excluding*:  
MA 1303 Quantitative Reasoning  
MA 1113 Structure of the Real Number System  
MA 1323 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government *and*  
3 hours from University CORE *excluding*:  
AEC, AS, EC, and MS

**College Core**

BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

**Major Core**

FIN 3723 Financial Markets  
FIN 4223 Intermediate Fin Mgt  
FIN 4423 Investments  
FIN 4923 International Fin Mgt  
1 hour Internship  
FIN 4243 Senior Seminar in Finance

Major Electives

9 hours Choose from list\*

\* These courses are to be selected in consultation with your finance advisor. They may be taken along with Junior-Senior Core Courses. FIN 4233, FIN 4433, FIN 4733, FIN 3513, FIN 4723.

**Total hours needed for major: 128**

**Double Major.** Students with a Business School Major\* who desire a Double Major in Banking and Finance must take the following 18 hours beyond the 128 hours required for the first major. For additional depth, they may choose from the listed optional courses.

Required Courses for Double Major

FIN 3723 Financial Markets  
FIN 4423 Investments  
FIN 4223 Intermediate Financial Mgt  
FIN 4923 International Financial Mgt  
FIN 4723 Bank Management  
FIN 4243 Senior Seminar in Finance

Optional Finance Courses

ACC 3203 Financial Statement Analysis  
FIN 4233 Working Capital Mgt  
FIN 4733 Advanced Bank Mgt  
FIN 4433 Security Analysis and Portfolio Mgt

\* Non-Business School Majors wishing to pursue a second degree in a Business Administration field, please consult the *MSU Bulletin* or the COBI Advisement Center.

**Minor Option for students with a Business School Major** who desire to Minor in Banking and Finance. The following 4 courses are required:

FIN 3723 Financial Markets  
FIN 4423 Investments  
FIN 4223 Intermediate Financial Management  
FIN 4923 International Financial Management

**Minor Option for students with a Non-business School Major** who desire to Minor in Banking and Finance. The following 6 courses are required:

FIN 3113 Financial Systems  
FIN 3123 Financial Management  
FIN 3723 Financial Markets  
FIN 4423 Investments  
FIN 4223 Intermediate Financial Management  
FIN 4923 International Financial Management

**REAL ESTATE and MORTGAGE APPRAISAL FINANCING**

**Real Estate and Mortgage Appraisal Financing (REM)** — This major prepares the student for employment opportunities in real estate brokerage appraisal, mortgage loans division of commercial and federal banks, and mortgage banking firms, as well as self-employment in the real estate industry.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core *excluding*:  
MA 1303 Quantitative Reasoning  
MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government and  
3 hours from University CORE *excluding*:  
AEC, AS, EC, and MS

**College Core**

BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II

ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

**Major Core**

International Elective - 3 hours (see advisor for options)  
REM 3333 Principles of Real Estate  
REM 3253 Real Property Evaluation  
REM 3353 Real Estate Finance  
REM 4253 Mortgage Financing  
BL 4253 Real Estate Law

Elect 2 of the following:

ACC 3203 Financial Statement Analysis  
FIN 3723 Financial Markets  
FIN 4223 Intermediate Financial Mgt  
FIN 4423 Investments  
MGT 3323 Entrepreneurship  
MKT 4113 Personal Selling  
INS 3203 Property and Casualty Insurance  
EC 4313 Regional Economics

15 hours Non-business electives -(see advisor for options)

4 hours Free electives

**Total hours needed for major: 128**

**MANAGEMENT of CONSTRUCTION and LAND DEVELOPMENT**

**Management of Construction and Land Development** - This major is designed to meet the needs of the student interested in managing a business that is associated with real property and the subsequent planning, financing, and development of the land and the eventual construction of buildings. The graduate may expect to seek employment from a broad range of employers including builders, developers, and financial organizations.

All non-COBI transfers to this major must be approved by the program coordinator.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core *excluding*:  
MA 1303 Quantitative Reasoning  
MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government and  
3 hours from University CORE *excluding*:  
AEC, AS, EC, and MS

**College Core**

BQA 2113 Business Statistical Methods I

BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

**Major Core**

International Elective - 3 hours (see advisor for options)  
EG 1143 Graphic Communication  
ABE 1073 Agricultural Mechanics  
ABE 4383 Building Construction  
BL 4253 Real Estate Law  
LA 3713 Landscape Contracting I  
LA 4724 Landscape Contracting II  
LA 4733 Landscape Contracting III  
LA 4744 Landscape Contracting IV  
REM 3333 Principles of Real Estate  
REM 3253 Real Property Evaluation  
REM 3353 Real Estate Finance

Major Elective - 3 hours (see advisor for options)

Non-business Electives - 2 hours (see advisor for options)

**Total hours needed for major: 128**

**RISK MANAGEMENT, INSURANCE and FINANCIAL PLANNING**

**Risk Management, Insurance and Financial Planning** — This program offers the student a broad study of subjects related to the career fields of Risk Management, Insurance and Financial Planning, with emphasis on the professional educational requirement of these career fields. The department also has an Insurance/Marketing option under the General Business major.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core *excluding*:

MA 1303 Quantitative Reasoning  
MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government *and*  
3 hours from University CORE *excluding*:  
AEC, AS, EC, and MS

**College Core**

BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics

EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

**Major Core**

International Elective - 3 hours (see advisor for options)  
INS 3103 Principles of Insurance  
INS 4503 Enterprise Risk Management

Elect 3 of the following:

INS 3203 Property and Casualty Insurance  
INS 3303 Life and Health Insurance  
INS 3403 Financial Planning  
INS 3413 Intro to Personal Financial Planning  
INS 3503 Employee Benefits  
BL 3223 Law of Commercial Transactions  
BL 4233 Legal Theories of Risk Distribution & Loss Allocation

Elect 2 of the following:

ACC 4013 Income Tax I  
FIN 3723 Financial Markets  
FIN 4423 Investments  
MKT 4113 Personal Selling  
REM 3333 Principles of Real Estate

Non-business electives - 15 hours (see advisor for options)  
Free electives - 4 hours

**Total hours needed for major: 128**

**GENERAL BUSINESS ADMINISTRATION (GBA)**

The curriculum in General Business Administration is designed for students who desire a general rather than a specialized, program in business. GBA advisors are located in the COBI Academic Advising Center. Students are encouraged to make appointments with advisors, as they are not always available on a walk-in basis.

General Business Administration majors must complete 12 hours from one major area and 6 hours from two additional major areas selected from the list below, for a total of 24 hours.

Accounting  
Economics  
Finance

Information Systems  
Insurance  
International Business

Legal Environ of Business  
Management  
Marketing

Real Estate  
Transportation

**GENERAL BUSINESS ADMINISTRATION****University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core *excluding*:

MA 1303 Quantitative Reasoning  
  
MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government *and*  
3 hours from University CORE *excluding*:  
AEC, AS, EC, and MS

**College Core**

BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

**Major Core**

International Elective - 3 hours (see advisor for options)

Select three areas of concentration from the following prefixes:  
ACC, BIS, BL, EC, FIN, IB, INS, MGT, MKT, REM, TR1st Major Area  
2nd Major Area12 hours  
6 hours

3rd Major Area

Non-business electives  
Free electives6 hours  
13 hours  
3 hours**Total hours needed for major: 128****Furniture Management Concentration (GBAF)**

Program Coordinator: Teressa Hooper, 221 McCool Hall

The General Business Administration Major-Furniture Management Concentration prepares students for professional careers in furniture and related industries. In this unique program, students take general business course-work along with specialized classes in furniture production and interior design. They also have the opportunity to enhance their education with hands-on experience through participation in cooperative education or internships at one of the many furniture companies throughout Mississippi and the nation.

Required courses are intended to provide students with managerial and technical skills needed for effective performance in the furniture industry. Elective courses can then be chosen to develop additional knowledge in areas of interest (for example, human resource management, production, marketing, or furniture design and construction). GBAF students take 9 hours of Furniture electives to complete their furniture option. Appropriate upper-level business courses are then taken to develop business knowledge in areas of interest. In addition electives from other colleges may be chosen to build particular skills. (For a list of eligible courses, consult the GBAF advisor). Finally, to help students prepare for their career, students may engage in an internship or a cooperative education experience with a furniture manufacturer.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp IEN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core *excluding*:MA 1303 Quantitative Reasoning  
MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government and  
3 hours from University CORE *excluding*:  
AEC, AS, EC, and MS**College Core**BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

**Major Core**International Elective - 3 hours (see advisor for options)  
FP 1103 Wood Technology and Products  
FP 4223 Furniture Production I  
FP 4233 Furniture Production II  
MGT 3333 Field Studies in EntrepreneurshipManagement Elective - 6 hours (see advisor for options)  
Supporting Area Electives - 6 hours (see advisor for options)  
Non-business electives - 10 hours (see advisor for options)

Free electives - 6 hours

**Total hours needed for major: 128****General Business Administration Minor**

A minor in General Business Administration will help non-business students prepare for entrance into the world of business. Students will become familiar with basic concepts and techniques necessary for analyzing business environments, making sound business decisions and planning one's career. Academic advising is available in the Academic Advising Center, 221 McCool Hall.

A minimum of 21 hours must be taken to obtain a GBA minor. A minimum of twelve hours must be taken at MSU to receive the GBA minor. Note that some choices require others as prerequisites.

Elect SEVEN from:

BL 2413 Legal Environment of Business  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
FIN 3123 Financial ManagementMKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
BIS 3123 Management Information Systems  
BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
MGT 3413 Production Management**Department of MANAGEMENT and INFORMATION SYSTEMS**Professors Smith (Head), Arnett, Chrisman, Freedman, Lehman,  
R. Pearson, Shim, Spencer, Taylor, and White;  
Associate Professors Barnett, Long, A. Pearson, and Warkentin  
Assistant Professors Davis, Maertz, and Vance  
Office: 3103 McCool Hall

Students in the Department of Management and Information Systems may elect to major in either Management or Information Systems. Both majors offer excellent job opportunities and can help graduates to achieve their potential in business firms or other organizations.

**MANAGEMENT**

**Management (MGT).** Regardless of one's chosen career, future responsibilities will very likely require a knowledge of management concepts. While an organization can acquire more capital, and technology becomes more common and cost-effective, the only true sustainable source of competitive

advantage for an organization is people, and how these resources are managed. Management adds value by encouraging employee involvement, creativity, motivation and loyalty. A student may choose to take electives emphasizing human resource management or general management/entrepreneurship.

A student chapter of the Society for Human Resource Management (SHRM), the leading voice of the human resource profession, is active. SHRM provides education and information services, conferences, and seminars, government and media representation, online services and publications to more than 165,000 professional and student members throughout the world. As a student member of SHRM, you will learn about the "real world" of human resource management through publications and educational opportunities. You will also participate in activities that will build your knowledge of the HR field while helping you to develop valuable leadership and organizational skills.

The following course of study is designed to prepare the student for careers in the field of Management.

### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core excluding:

MA 1303 Quantitative Reasoning  
MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government and  
3 hours from University CORE excluding:  
AEC, AS, EC, and MS

### College Core

BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business

BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

### Major Core

International Elective - 3 hours (see advisor for options)  
MGT 3513 Introduction to Human Resource Mgt  
MGT 3813 Organizational Behavior  
MGT 4153 Organizational Theory

Elect 1 of the following:

CO 3833 Interviewing  
CO 3293 Corporate Communication  
CO 3803 Principles of Public Relations  
SO 3913 Industrial Sociology  
PSY 4523 Industrial Psychology

Choose one Area of Emphasis:

#### Human Resources Emphasis

MGT 4533 Advanced Human Resource Mgt  
MGT 4543 Compensation Management  
MGT 4553 Collective Bargaining

#### General Management/Entrepreneurship Emphasis - Elect 3

of the following:  
MGT 3323 Entrepreneurship  
MGT 4533 Advanced Human Resource Mgt  
MGT 4543 Compensation Mgt  
MGT 4553 Collective Bargaining  
MGT 4613 Cross-Cultural Management

Non-business electives - 15 hours (see advisor for options)

Free electives - 4 hours

**Total hours needed for major: 128**

## INFORMATION SYSTEMS

**Information Systems (BIS).** Business, industrial, governmental, and military establishments are constantly seeking persons with the necessary aptitude, professional education, and experience for careers in the fast-growing field of computer information systems. Through the facilities of the academic departments and the computing center, students at Mississippi State University have a unique opportunity to acquire both professional education and experience in business data processing and management information systems.

The purpose of the Information Systems major is to prepare students to solve business problems where the solution normally involves the use of a computer. Thus, the student must have a strong foundation in computer concepts, systems analysis and design, programming and quantitative skills. Since the student will be expected to solve business related problems, he/she must have a broad background and understanding of the business environment including such topics as accounting, economics, law, management, production, marketing, finance, and communications.

A student chapter of Association for Information Technology Professionals is active and provides students with the opportunity to keep abreast of current developments in the field of management information systems through professional speakers, social activities, and field trips.

### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core excluding:

MA 1303 Quantitative Reasoning

MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government and  
3 hours from University CORE excluding:  
AEC, AS, EC, and MS

### College Core

BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting  
ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management

MKT 3013 Principles of Marketing  
 MGT 3114 Principles of Management and Production  
 GB 4853 Business Policy

Computer Literacy Requirement  
 BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement  
 MGT 3213 Organizational Communications

**Major Core**

International Elective - 3 hours (see advisor for options)  
 BIS 1733 Visual Basic Applications  
 BIS 1753 Intro to Business COBOL  
 BIS 3523 Advanced Languages I  
 BIS 3753 Business Database Systems

BIS 4753 Structured Systems Analysis & Design  
 BIS 4773 Electronic Commerce Seminar

Elect 2 of the following:  
 BIS 4513 Local Area Networks  
 BIS 4523 Advanced Languages II  
 BIS 4533 Management Support Systems

Computer Science elective - 9 hours (CS courses greater than CS 1013)  
 Computer Related electives - 3 hours (see advisor for options)  
 Non-business electives - 6 hours (see advisor for options)

**Total hours needed for major: 130**

## Department of MARKETING, QUANTITATIVE ANALYSIS and BUSINESS LAW

Professors Bryant, Capella, Eshee, LeMay,  
 Tahai, Taylor, and Webster;  
 Associate Professors Engelland (head), and Sullivan;  
 Assistant Professors Chakrabarty, Hoffman, P. Liddell, Lueg, M. Moore,  
 R. Moore, and Still  
 Instructors Goree, and Lam  
 Office: 301 McCool Hall

This department offers one major (Marketing) and two concentrations (Professional Golf Management Concentration and the Transportation Concentration). In addition, the department offers quantitative analysis and business law courses to support other programs in the college and across campus.

### MARKETING

**Marketing (MKT)** —Marketing consists of three significant interlocking activities: (1) understanding consumers along with their wants and unfilled needs; (2) developing improved products and services that meet the identified needs of consumers; and (3) communicating the benefits of the improved products and services through advertising, public relations, promotion and effective salesmanship. Courses offered within this unit prepare students to provide marketing leadership and assume a variety of career paths, including field sales, brand management, marketing communications, store management, procurement, logistics, and small business.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics (6hours)

MA 1313 College Algebra *and*  
 MA 1613 Calculus for Business and Life Sciences

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University CORE excluding:  
 MA 1303 Quantitative Reasoning  
 MA 1113 Structure of the Real Number System  
 MA 1323 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social Sciences

PS 1113 American Government  
 3 hours from University CORE excluding:  
 AEC, AS, EC, MS

**College Core**

BQA 2113 Business Statistical Methods I  
 BQA 3123 Business Statistical Methods II  
 ACC 2013 Principles of Financial Accounting  
 ACC 2023 Principles of Managerial Accounting  
 EC 2113 Principles of Macroeconomics

EC 2123 Principles of Microeconomics  
 BL 2413 Legal Environment of Business  
 BIS 3233 Intro to Management Info Systems  
 FIN 3113 Financial Systems  
 FIN 3123 Financial Management  
 MKT 3013 Principles of Marketing  
 MGT 3114 Principles of Management and Production  
 GB 4853 Business Policy

Computer Literacy Requirement

BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

**Major Core**

International Elective - 3 hours (see advisor for options)  
 MKT 4413 Consumer Analysis and Behavior  
 MKT 4533 Marketing Research  
 MKT 4813 Marketing Management

Elect 4 of the following:

MKT 3213 Retailing  
 MKT 4113 Personal Selling  
 MKT 4123 Advertising  
 MKT 4613 Services Marketing  
 MKT 4143 Sales Management  
 MKT 3933 International Marketing  
 TR 3313 Principles of Transportation  
 TR 4313 Physical Distribution Management

13 hours Non-business electives (see advisor for options)  
 6 hours Free electives (see advisor for options)

**Total hours needed for major: 128**

\*\* To be selected with the advice and approval of advisor

A Marketing minor is offered to both Business and Non-Business students. A minor in Marketing is attained by taking the following courses: MKT 3013, MKT 4413, MKT 4813, and three from MKT 3213, MKT 4113, MKT 4123, MKT 4613, MKT 3933, MKT 4143, MKT 4533, or TR 4313. Students interested in this minor should contact a Marketing advisor.



**Professional Golf Management Concentration**

Director: Scott N. Maynard  
Office: 350 McCool Hall  
Phone: (662) 325-3161

The Professional Golf Management Program (PGM) is one of only thirteen sanctioned by the Professional Golfer's Association of America (PGA). The Program prepares graduates for careers as Class A PGA Professionals at country clubs, resorts, and public golf facilities. The PGM Program is a demanding four and one half year curriculum. The PGA Professional must have a broad assortment of marketing, management and other business related abilities to be effective in the golf profession today.

The program leads to a bachelor's degree in business administration with a major in marketing. In addition to the requirements for a degree in marketing, students must complete courses in turf management, food management, landscape architecture, human resource management; and all PGA Golf Professional Training Progress (GPTP) requirements. Students must also complete a minimum of 16 months (five semesters) of co-op under the guidance of the MSU Cooperative Education Program. These work experiences are under the tutelage of Class A PGA Professionals throughout the country. Students are required to be continuously enrolled at MSU as a full-time student or enrolled in the MSU Cooperative Education Program according to their co-op schedule. Those who complete the program thus earn a prestigious degree and reach the threshold of PGA Class A membership.

**PGA Certification.** PGA class A certification (membership) requires: completion of all PGM academic and co-op requirements; passing the PGA playing ability test; completion of all GPTP requirements; and eight months on the job experience after graduation.

**PGM Graduation Requirements.** Complete the last semester in school (not on co-op). Pass PGA Playing Ability Test. Must complete GPTP Level I and II including passing Gateway Tests I and II.

**PGM Admission Procedures.** The PGM Program has a limited enrollment. The current enrollment limit is 250; however, this number is subject to decrease based on the placement outlook and PGM and Co-op budget constraints. The number of students admitted each year is determined by graduation and attrition of the previous year. Students are admitted once per year for entrance either in the Summer or Fall semesters. The deadline for completed applications is March 1 each year. Prospective students that have completed all PGM application requirements and meet all minimum PGM entrance requirements will be considered for admission for the following Summer or Fall during the first two weeks in March.

**Entrance Requirements**

Freshmen:

- Meet MSU regular admission requirements (not with Summer Developmental Programs)
- Have a USGA Handicap of 8 or less

Transfer Students:

- 2.75 GPA with maximum of 64 applied semester hours
- Have a USGA Handicap of 8 or less

Non-Citizen:

•The MSU PGM Program is sanctioned by PGA of America to educate and train graduates to become PGA Members. Admission to the MSU PGM Program is restricted to students who are U.S. Citizens or Resident Aliens.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
MA 1613 Calculus for Business and Life Sciences I

Science (6 hours)

2 Lab Sciences from University CORE

Math/Science Elective (3 hours)

University core *excluding*:  
MA 1303 Quantitative Reasoning  
MA 1113 Structure of the Real Number System  
MA 1123 Informal Geometry and Measurement

Humanities (6 hours)

See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PS 1113 American Government *and*  
3 hours from University CORE *excluding*:  
AEC, AS, EC, and MS

**College Core**

BQA 2113 Business Statistical Methods I  
BQA 3123 Business Statistical Methods II  
ACC 2013 Principles of Financial Accounting

ACC 2023 Principles of Managerial Accounting  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
BL 2413 Legal Environment of Business  
BIS 3233 Intro to Management Info Systems  
FIN 3113 Financial Systems  
FIN 3123 Financial Management  
MKT 3013 Principles of Marketing  
MGT 3114 Principles of Management and Production  
GB 4853 Business Policy

Computer Literacy Requirement  
BIS 1013 Intro to Business Computer Systems

Jr./Sr. Writing Requirement

MGT 3213 Organizational Communications

**Major Core**

2 hours Seminar  
MKT 3213 Retailing  
MKT 4413 Consumer Analysis & Behavior  
MKT 4533 Marketing Research  
MKT 4233 Golf Merchandising Management  
MGT 3513 Intro to Human Resource Mgt  
HS 3283 Foodservice Systems  
LA 3603 Design of the Golf Environment  
International Elective - 3 hours (see advisor for options)

Elect 3 of the following:

MKT 4113 Personal Selling  
MKT 4123 Advertising  
MKT 4613 Services Marketing  
MKT 4143 Sales Management  
MKT 3933 International Marketing

Non-business electives - 7 hours (see advisor for options)

**Total hours needed for major: 128**

**Co-op Work**

PGM students must complete a minimum of 16 months (five semesters) of co-op work with class-A PGA professionals at country clubs, public golf courses, golf resorts, or other golf facilities. A 2.50 cumulative QPA on all work and on all work at MSU are required in order to participate in the PGM co-op program.

**PGA GPTP**

PGM students will complete all PGM GPTP requirements including testing, which will be conducted on the Mississippi State University campus by officials of the PGA. An initial lab fee and a semester lab fee is charged students each semester on campus to cover the GPTP seminars, GPTP tests, workshops and playing privileges at the MSU Golf Course. A typical schedule of classes and co-ops are as follows:

<b>FRESHMAN YEAR</b>		<b>JUNIOR YEAR</b>	
Fall	School - 16 hours	Fall	Co-op
Spring	School - 16 hours	Spring	School - 18 hours
Summer	Co-op	Summer	School - 12 hours
<b>SOPHOMORE YEAR</b>		<b>SENIOR YEAR</b>	
Fall	School - 17 hours	Fall	School - 18 hours
Spring	School - 16 hours	Spring	Co-op
Summer	Co-op	Summer	Co-op
		Fall	School - 15 hours (Graduation)

**Transportation Concentration**

**Transportation(TR)** — Transportation continues to play a major role in the national and international economy. As businesses continue to focus on logistics and transportation improvements, job opportunities for graduates in the transportation concentration increase. The curriculum in the transportation concentration will acquaint the student with the issues, perspectives, and techniques associated with transportation and logistics theory and practice. It offers in-depth treatment of distribution, supply, warehousing, inventory control, and operations in the modes of transportation.

**University Core**

- English Composition (6 hours)
  - EN 1103 English Comp I **or**
  - EN 1163 Accelerated Comp I **or**
  - EN 1183 Honors Comp I
  
  - EN 1113 English Comp II **or**
  - EN 1173 Accelerated Comp II **or**
  - EN 1193 Honors Comp II
- Public Speaking (3 hours)
  - CO 1003 Fundamentals of Public Speaking **or**
  - CO 1093 Honors Oral Communication
- Mathematics (6 hours)
  - MA 1313 College Algebra
  - MA 1613 Calculus for Business and Life Sciences I
- Science (6 hours)
  - 2 Lab Sciences from University CORE
- Math/Science Elective (3 hours)
  - University core *excluding*:
  - MA 1303 Quantitative Reasoning
  - MA 1113 Structure of the Real Number System
  - MA 1123 Informal Geometry and Measurement
- Humanities (6 hours)
  - See University CORE
- Fine Arts (3 hours)
  - See University CORE
- Social/Behavioral Sciences (6 hours)
  - PS 1113 American Government *and*
  - 3 hours from University CORE *excluding*: AEC, AS, EC, and MS

**College Core**

- BQA 2113 Business Statistical Methods I
- BQA 3123 Business Statistical Methods II
- ACC 2013 Principles of Financial Accounting
- ACC 2023 Principles of Managerial Accounting
- EC 2113 Principles of Macroeconomics
- EC 2123 Principles of Microeconomics
- BL 2413 Legal Environment of Business
- BIS 3233 Intro to Management Info Systems
- FIN 3113 Financial Systems
- FIN 3123 Financial Management
- MKT 3013 Principles of Marketing
- MGT 3114 Principles of Management and Production
- GB 4853 Business Policy
- Computer Literacy Requirement
  - BIS 1013 Intro to Business Computer Systems
- Jr./Sr. Writing Requirement
  - MGT 3213 Organizational Communications
- Major Core**
  - International Elective - See advisor for options
  - TR 3313 Principles of Transportation
  - TR 4133 General Transportation
  - TR 4313 Physical Distribution Management
  - TR 4393 Transportation Seminar
  - MKT 4413 Consumer Analysis and Behavior
  - MKT 4533 Marketing Research
  - MKT 4813 Marketing Management
  
  - 13 hours Non-business electives - See advisor for options
  - 6 hours Free electives

**Total hours needed for major: 128**

**THE B.B.A. as a DOUBLE DEGREE and as a SECOND BACCALAUREATE DEGREE**

A double degree is available in the College of Business and Industry for students pursuing a primary degree in a non-business area or accounting field at MSU. These programs require that a student satisfy the normal graduation requirements in the non-COBI area first, as well as the following work. The required graduation grade point average in upper business course work is 2.25. Students are not allowed more than two D's in upper level business courses. Students must apply for and confirm both degrees at the same time. Students must establish a double degree record in the COBI Academic Advising Center in 221 McCool.

The second degree curriculum is available to students who hold a baccalaureate degree in any non-business or accounting field of study from a regionally accredited institution. The combination of the first degree and the following second degree program must include the current university core courses and the courses listed below. A minimum of 32 semester hours upper business work must be earned in residence at Mississippi State University after the first degree has been conferred. Students must establish a second degree record with the COBI Academic Advising Center.

**Required Courses**

ACC 2013 Prin of Financial Accounting.....	3	FIN 3123 Financial Management .....	3
BIS 1013 Intro Business Computer Systems .....	3	MGT 3213 Organizational Communications .....	3
ACC 2023 Prin of Managerial Accounting .....	3	BIS 3233 Management Information Systems .....	3
BQA 2113 Business Statistical Methods I .....	3	MKT 3013 Prin of Marketing .....	3
BL 2413 Legal Environment of Business .....	3	International Elective.....	3
BQA 3123 Business Statistical Methods II .....	3	GB 4853 Bus Policy (Graduating Sem only) .....	3
EC 2113 Prin of Macroeconomics .....	3	Major Courses.....	21+
FIN 3113 Financial Systems .....	3	Total.....	69+
EC 2123 Prin of Microeconomics .....	3		
MGT 3114 Prin. Of Mgt.....	4		

**PREPARATION for the STUDY of LAW**

Major Advisors: Professors James A. Bryant and William D. Eshee;  
Assistant Professors: Pearson Liddell and Richard Still  
Office: 301 McCool Hall

Each year a number of graduates of the College of Business and Industry enter law school. Although there is no formal pre-law curriculum, most law schools advise pre-law students to seek a wide background of studies. The curriculum in the College is good preparation for the study of law because it offers the opportunity to study the arts, the humanities, science, and mathematics, in addition to business and economic disciplines which constitute the background for understanding the study of most legal problems. Because many areas of law practice deal with business, a background in business is very useful to the practicing attorney. In addition, if a person should decide not to pursue a legal career, there are many opportunities available in business. A professor of business law—pre-law advisor—is available for providing information about the legal profession, assistance in choosing courses, and guidance concerning law school admissions.

**GRADUATE PROGRAMS in BUSINESS ADMINISTRATION**

Barbara Spencer, Director of Graduate Studies  
in Business and Professor of Management  
Office: 247 McCool Hall

The College of Business and Industry offers six graduate programs in business administration, namely, the Master of Business Administration (MBA), The Master of Science in Information System (MSIS), the Master of Science in Business Administration (MSBA) with a major in Finance, Master of Professional Accountancy (MPA), Master of Taxation (MTX), and the Doctor of Philosophy in Business Administration (Ph.D.). An M.A. in Economics and a Ph.D. in Applied Economics are additional graduate programs offered in the College.

Admission requirements for graduate programs in business include an acceptable history of previous academic work and a satisfactory score on the Graduate Management Admission Test (GMAT). Required background for admission to graduate course-work includes a general knowledge of the functions of business, introductory calculus, statistics, and proficiency in computer usage.

Details concerning these graduate programs can be found in the *Graduate Bulletin*. Students who are interested in pursuing any of these programs should communicate with the Director of Graduate Studies in Business, P. O. Box 5288, Mississippi State, MS 39762. For further information, call 662-325-1891.

## COLLEGE of EDUCATION

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SUE MINCHEW

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### GENERAL INFORMATION

The faculty of the College of Education is committed to fulfilling the following three major functions: (1) to provide undergraduate and graduate professional preparation for teachers, administrators, school service personnel, and others who assume education-related positions in settings other than schools; (2) to collaborate with school personnel, educational agencies, professional groups, and others interested in the evaluation and improvement of educational opportunities, programs, and services; and (3) to promote and conduct experimental and other research studies designed to improve educational practice and to advance educational theory.

Non-teaching concentrations are also available in educational psychology, fitness management, industrial technology, sports communication, office systems and technologies, and trade and technical studies.

In addition to being accredited by the National Council for Accreditation of Teacher Education and the Southern Association of Colleges and Schools, the College of Education is a member of the American Association of Colleges for Teacher Education. It is the objective of this College to provide excellence in education while at the same time exhibiting a friendly attitude toward students. The teacher education programs are approved by the Mississippi State Department of Education, thereby enabling graduates to satisfy the certification requirements for the State of Mississippi.

### ADMINISTRATIVE ORGANIZATION

The College of Education consists of five departments: Counseling, Educational Psychology, and Special Education; Curriculum and Instruction; Health, Physical Education, Recreation and Sport; Music Education; and Instructional Systems, Leadership, and Workforce Development.

**Counseling, Educational Psychology, and Special Education.** The Department of Counseling, Educational Psychology, and Special Education prepares individuals at the undergraduate and graduate levels to function in a variety of professional settings that include K-12 schools, community counseling centers, human services agencies, business settings, rehabilitation agencies, community colleges, four-year colleges, and universities. The department offers the Bachelor's degree, Master of Science degree, Educational Specialist Degree, the Doctor of Education, and the Doctor of Philosophy degree. Special areas of interest in the department are psychometry, educational psychology, school psychology, special education, community counseling, school counseling, vocational rehabilitation counseling, college counseling, and student affairs administration in higher education.

**Curriculum and Instruction.** This department is responsible for instruction in all professional courses of a general nature, and in professional courses that deal specifically with teaching in Elementary Education and in the secondary fields of English language arts, social studies, mathematics, science, foreign languages, and speech. In addition to organizing and administering the curricula for educating teachers in the fields of elementary education and secondary education, the department is responsible for the direction and immediate supervision of trainees in these fields.

Through the Department of Curriculum and Instruction, the Bachelor of Science, Master of Science, Educational Specialist, Doctor of Education, and Doctor of Philosophy degrees are offered. The department also offers areas of emphasis in elementary and secondary education for the Educational Specialist degree and in elementary and secondary education for the Doctor of Education and the Doctor of Philosophy degrees.

**Health, Physical Education, Recreation and Sport.** This department offers the Bachelor of Science degree in Physical Education with concentration areas in Fitness Management, Kinesiology, Sports Communication, and Teaching/Coaching. Teaching/Coaching majors may also pursue an add-on teaching endorsement in Health Education by taking additional course work. Master of Science in Physical Education degree programs offer concentration areas in Exercise Science, Health Education/Health Promotion, Sport Administration, and Teaching/Coaching.

**Music Education.** This department offers the Bachelor's degree in Music Education, with concentrations in Vocal and Instrumental Music Education. The Maroon Band and the University chorus, both of which are university-wide organizations, are integral parts of this department.

**Instructional Systems, Leadership, and Workforce Development.** Mississippi State University is a designated institution for the preparation of vocational-technical education personnel. State and federal funds are made available, through cooperation with the State Office of Vocational and Technical Education, for the partial support of the program.

It is the responsibility of the Department of Instructional Systems, Leadership, and Workforce Development to provide teacher/coordinator/administrator preparation in vocational areas including adult, business, industrial arts, and trade and technical studies. The department also provides undergraduate preparation of personnel interested in the following occupations: industrial technology and office administration. Job opportunities in these areas are very promising.

The Master of Science degree is offered in Technology and in Workforce Educational Leadership. The department also offers an area of emphasis

in Technology for the Educational Specialist, Doctor of Education, and Doctor of Philosophy degrees. The Master of Science in Instructional Technology degree is offered. This computer-based instructional technology program of study meets the educational needs of persons who have personal and professional interests in planning for and utilizing technology.

In addition, the department provides programs in Educational Leadership. Programs are designed to prepare administrators, supervisors, teachers, and other educational personnel for positions of leadership in: (1) school district offices; (2) elementary, middle, or secondary schools; and (3) community college administrative positions. The Department offers the Master of Science degree, the Educational Specialist degree, the Doctor of Education and Doctor of Philosophy degrees.

## SERVICES

**Teaching/Learning Center.** The Teaching/Learning Center in the College of Education serves students, faculty and staff by providing instructional resource materials and multimedia equipment for classroom use. The TLC also houses a computer laboratory for student and faculty use in the College. With prior scheduling, technical assistance is provided in TLC in relation to all materials and equipment.

Another function of TLC is to provide academic support to students, staff, and faculty at the University. This function supports the University retention goal by helping students to achieve and maintain successful academic standing. Through courses and tutoring in TLC, students are encouraged to replace poor study habits with proven strategies that help them develop into more effective and efficient learners. Some specific areas of service are reading comprehension and rate, vocabulary, spelling, grammar, composition, mathematics, conversational English, recognizing learning styles, assistance with preparation for professional examinations, time management, and assessment of current study habits. For further information, see Teaching/Learning Center in Part I of this bulletin.

**The Rehabilitation Research and Training Center on Blindness and Low Vision.** The Rehabilitation Research and Training Center on Blindness and Low Vision is the only national center that focuses on increasing the employability of persons who are blind or severely visually impaired.

**Student Teaching.** Partner School Districts in proximity to Mississippi State University are used to provide practicum and student teaching laboratory experiences for those enrolled in the teacher education program. Such experiences are supervised jointly by the faculties of the K-12 schools and the faculty of the College of Education.

## ADMISSION PROCEDURES in the COLLEGE of EDUCATION PHASES I-IV

This four-phase admission procedure is designed to assure a logical progression through the total professional teacher-education process.

**Enrollment in the College of Education (Phase I)** (pertains to Teacher Education majors in the College of Education only): Phase I identifies students who have enrolled in Teacher Education programs prior to official admission into Teacher Education. This early identification will provide the necessary counseling, screening, and advisement for students aspiring to become teachers. To enroll in the College of Education, students must be admitted to Mississippi State University; hold an appointment with an assigned advisor in the College of Education and become familiar with the current College of Education Undergraduate Handbook, curriculum check sheet, and the current university catalog; select a major within a department that has a basic teacher preparation program; and complete Phase I (enrollment in the College of Education) Admission Form for Teacher Education Majors with their faculty advisor. **The faculty advisor is responsible for submitting this form to the office of the Dean of Education, Room 309 Allen Hall.**

**Admission to Teacher Education (Phase II)** (including Teacher Education majors in the College of Agriculture and Life Sciences and the College of Arts and Sciences): To be admitted to teacher education and enroll in upper level professional education courses, students must complete Phase II by achieving a minimum of 45 semester credit hours of the University general education core with a 2.5 GPA and a 2.5 overall GPA. (A minimum of 45 semester credit hours general education core with a 2.75 GPA is required for Elementary Education candidates.) Students must also complete 6 semester credit hours of English composition, 3 semester credit hours of speech, and 3 semester credit hours of mathematics (algebra or higher) with a "C" or better in each course; and either present an ACT score of 21 (SAT equivalent of 860) with no sub-score below 18 or obtain the following minimum scores on the Praxis I Tests:

<b>C-PRST</b>	
Reading	170
Writing	172
Mathematics	169

The student must also submit two letters of recommendation from educators and verification of 40 hours work experience with children or

youth. Each experience must be substantiated by a letter of verification from the organization where the student worked or volunteered.

**It is important that students keep the originals of their Praxis I test scores in a safe place since they will be required to show these originals to their faculty advisor in order to be admitted into Teacher Education.** Students should request that ETS send a copy of their scores to Mississippi State University (Code R1480). Students attending the Meridian campus should have their scores sent to both Mississippi State University (Code R1480) and the Meridian campus (Code R3336). Students are encouraged to take the PRAXIS I exam by the second semester of their freshman year.

Students should begin the application to teacher education during pre-registration or orientation. Confidential recommendations must be sent to the Dean of the College of Education, P. O. Box 9710, Mississippi State, MS 39762. The Dean's office will issue admission cards within five days after admission approval. **All students must satisfy Phase II requirements before registering for professional sequence courses.** The Admission to Teacher Education card will admit students to professional sequence courses. Instructors of professional education courses will check for verification that students have been officially admitted to Teacher Education. **Students who have not been admitted to Teacher Education may not register for professional education courses. The faculty advisor is responsible for submitting the Phase II form to the Dean's office, 309 Allen Hall.**

**Admission to Student Teaching (Phase III)** (including Teacher Education majors in the College of Agriculture and Life Sciences and the College of Arts and Sciences): A student must complete Phase III by submitting an Application for Admission to Student Teaching form to the Director of Clinical/Field-Based Instruction and Licensure one semester prior to student teaching. To be eligible for student teaching, the student must have been admitted to Teacher Education, obtained a minimum of a 2.5 GPA in the major teaching field or concentration, and maintained an overall GPA of 2.5 or higher at the time of application. Final eligibility (2.5 GPA in major and 2.5 GPA overall) is determined through screening at the end of the semester prior to student teaching. The student must also have completed all professional education and methods courses with a minimum grade of "C" prior to student teaching. No course work other than the 15 student teaching/seminar hours can be taken during the student teaching semester.

Students seeking a degree in Teacher Education and an educator license are expected to schedule student teaching during the last semester of the senior year. As a general rule, graduate students seeking admission to teacher education and student teaching are expected to meet the same requirements as undergraduate students prior to their student teaching experience. All student placements and other communications with local schools are directed through the Office of Clinical/Field-Based Instruction and Licensure.

**Exit Requirements (Phase IV):** To be eligible for graduation, students in Teacher Education programs must have a "C" or better in all professional education courses in their majors, completed no more than half of their hours at a community college, satisfied residence requirements, and have a 2.0 overall GPA at Mississippi State University.

**Licensure.** As part of securing a Mississippi teacher's license, students must have taken the Principles of Learning and Teaching (PLT) test, the Specialty Area test and attained the required minimum scores. Students must request that ETS send a copy of their scores to Mississippi State University (Code R1480). Students attending the Meridian campus should have their scores sent to both Mississippi State University (Code R1480) and to the MSU Meridian campus (Code R3336). **It is very important that students keep the originals of all their test scores in a safe place since they will need the originals of these scores when they apply for a Mississippi educator's license.**

For more detailed information about teacher admission procedures, see the current College of Education Undergraduate Handbook. Application forms are available in the student's academic department and in the office of the Dean of the College of Education.

## TEACHER LICENSURE

In accordance with statutory provisions, the Mississippi Department of Education, Jackson, Mississippi, has adopted the rules and regulations on issuing and renewing teaching licenses which are set forth in *Guidelines for Mississippi Educator Licensure*, August 2001. The licensure program is applicable to all teacher licenses. Satisfactory completion of any teaching curriculum offered by the College of Education will enable the graduate to apply for a teaching license in Mississippi, but this institution can neither waive any licensure requirements nor authorize substitutions for mandatory courses. Mississippi State University has submitted and received approval for its programs. Consequently, students who plan to transfer from other universities or another college to the College of Education should consult with the Director of Clinical/Field-Based Instruction and Licensure or an advisor in the College of Education to ascertain the general education, professional education, and specialized education courses which must be completed to obtain a teaching license in the field or fields of their choice. Since teacher licenses are issued by the Missis-

Mississippi Department of Education only and not by the teacher education institutions, applications for licensure and original test scores must be filed with the Mississippi Department of Education by the applicant. Information concerning teacher licensure can be obtained from the Office of Clinical/Field-Based Instruction and Licensure.

### CRIMINAL RECORDS BACKGROUND CHECKS for PUBLIC SCHOOL EMPLOYEES

Mississippi Senate Bill 2658 requires school districts to conduct Criminal Records Background Checks of all new employees. Under Senate Bill 2658, "a student teacher is not required to be fingerprinted and checked because a student teacher is not an employee of the school district. However, a student teacher may be checked at the discretion of the local school district."

### STUDENT CODE of CONDUCT VIOLATIONS

Any violations of the Mississippi State University Student Code of Conduct as delineated in the student handbook, *The Bulldog*, and at <http://www.msstate.edu/dept/students/doas.htm>, including academic misconduct, may place completion of the student's degree/licensure program in jeopardy.

### CURRICULA

**Organization.** All curricula in the College of Education are organized on the lower- and upper-division basis. The lower division consists of the first two years and corresponds to the community college level. The upper division consists of the last two years, normally the junior and senior years.

**Selection of Teaching Fields.** Students who enroll in the teacher education program in the College of Education are expected to pursue a program of work which will enable them to qualify for a teaching license in the field of their choice.

**Degree Program Modifications.** Because of forthcoming changes in teacher licensure requirements, COE degree programs and concentrations in teacher education *will be modified*. Appropriate programmatic changes for graduation, licensure and accreditation *will be made* as this process evolves. These teacher education program changes will become applicable as students are officially admitted to programs and/or as new graduation requirements are adopted. For updated degree program modifications, please check with your departmental office.

**Sequence of Courses.** Students should schedule their courses in consultation with their faculty advisor.

**Directed Individual Study Courses.** A directed individual study course is an experience designed to further the educational and/or career development of an individual that is equal to or greater than the equivalent hours for a regularly scheduled course. This experience should be used only in special circumstances as deemed appropriate by the faculty of record, student's advisor, and department head. Unless otherwise designated by the student's advisor and department head, the experience shall be limited to 3 credit hours of undergraduate work. Every student should make an agreement with the faculty of record to fulfill the course objectives and outcomes specified in the course syllabus. This policy applies to students entering MSU Fall 2001 and thereafter.

**"D" Policy.** Students in Teacher Education must make grades of C or better in all professional education courses, and in freshman composition, speech, and algebra (or higher math). All other majors should check with their advisors for the policy for non-teaching majors.

**Transfer from Community College.** Lower-division curricula in the College of Education closely parallel the corresponding curricula offered in the community colleges of the state. Therefore, students majoring in a given area at a community college should be able to transfer to a like area

in the College of Education and complete their last two years of college work without loss of time or credit.

**Fields of Training.** Baccalaureate programs are offered for the education of teachers in the following fields: elementary education; biology and general science education, English education, foreign language education, mathematics education, physics/chemistry and general science education, social studies education; speech education; special education; music education with concentrations in instrumental and vocal music; physical education with concentrations in teaching/coaching; technology teacher education; agricultural education; and human sciences education.

Non-teaching bachelor's programs are offered in the following areas: educational psychology; physical education with concentrations in fitness management, sports communication, industrial technology, office systems and technologies, and trade and technical studies.

**Requirements for Graduation.** The requirements for graduation with a Bachelor of Science degree in the College of Education are a minimum of 128 semester hours and 256 quality points (or higher for some curricula).

### GRADUATE PROGRAMS in EDUCATION

**Master's Degrees.** The following departments within the College of Education offer curricula leading to the degree of Master of Science in education: Counseling, Educational Psychology, and Special Education; Curriculum and Instruction; Health, Physical Education, Recreation and Sport; Educational Leadership; and Instructional Systems and Workforce Development. You should check with specific departments for information on the concentrations offered by these departments.

**Educational Specialist Degree.** The Educational Specialist degree is a planned program of a minimum of 30 semester hours above the Master's degree under the direction of a major advisor. It is designed to broaden leadership training by providing courses in other fields and disciplines supplementary to the basic core in the major field. It is offered with program emphases in Agricultural and Extension Education, Counselor Education, Elementary Education, School Administration, School Psychology, Secondary Education, Special Education, and Technology.

**Doctoral Degrees.** The Doctor of Education and Doctor of Philosophy degrees are offered with program emphases in Agricultural and Extension Education, School Administration, Counselor Education, School Counseling, Technology; Elementary Education; Secondary Education; and Curriculum and Instruction. Minors may be taken in various related disciplines.

For more information on graduate programs in Education, see the *Graduate Bulletin*. A copy may be secured by writing to the Office of Office of Graduate Studies, P.O. Box G, Mississippi State, Mississippi 39762.

### College of Education Conceptual Framework

All programs in the College of Education at Mississippi State University use a conceptual framework involving four specific areas of study: **General, Professional/Pedagogical, Specialty, and the World of Practice** studies. Each of these areas of study builds upon the development of educators/professionals who are dedicated to the continual improvement of themselves as well as their students' educational experiences at all academic levels.

Undergraduate programs incorporate the essential characteristics of an effective educator/professional stated in the conceptual framework: **knowledge, collaboration, reflection, and practice**. Graduate programs emphasize **research, reflection, and performance-based outcomes**. Candidates' abilities to use technology and to work with diverse populations are important skills addressed in the Conceptual Framework and fostered in all undergraduate and graduate education programs in the College of Education.

## Department of COUNSELING, EDUCATIONAL PSYCHOLOGY, and SPECIAL EDUCATION

Major Advisor: Thomas Hosie  
Office: 508 Allen Hall

The Department of Counseling, Educational Psychology, and Special Education prepares individuals at the undergraduate and graduate levels to function in a variety of professional settings that include K-12 schools, community counseling centers, human services agencies, business settings, rehabilitation agencies, community colleges, four-year colleges, and universities. The Department offers the Bachelor's degree, Master of Science degree, the Educational Specialist degree, the Doctor of Education, and the Doctor of Philosophy degree. Special areas of interest in the department are psychometry, educational psychology, school psychology, special education, community counseling, school counseling, vocational rehabilitation counseling, and student development counseling in higher education.

1. Undergraduate Degree. The B.S. degree in Educational Psychology is a non-teaching option. This program provides students with a general background of psychological topics and principles as they relate to education. Additionally, students complete a concentration, (second area of emphasis) or a minor. Students who enroll in this program pursue a diversity of careers. Some of the vocational areas for which this program can prepare students are as follows: child care centers, seminary, the armed services (ROTC students), business settings, mental health agencies, and graduate work in counselor education, educational psychology, and school psychology. Students majoring in Educational Psychology have to earn a grade of "C" or better on all courses in the 43 hour curriculum.

The B.S. Degree in Special Education is a teacher preparation program, which prepares individuals to teach children and youth with mental retardation, learning disabilities, and other exceptionalities. The program also enables graduates to attain endorsements in areas of specialization. Applicants must meet admission requirements and follow procedures for College of Education teacher majors. These regulations are provided in the beginning portion of The College of Education section of this Bulletin.

- Graduate Degrees. The Department offers M.S., Ed.S., Ed.D., and Ph.D. degrees in Counselor Education with areas of emphasis in four concentrations: Community Counseling, Rehabilitation Counseling, School Counseling, and Student Affairs in Higher Education with a track in College Counseling and Student Affairs Administration. The Department also offers M.S. and Ph.D. degrees in Educational Psychology and a Specialist degree in School Psychology. Preparation in Educational Psychology can be obtained in the concentration areas of School Psychometry and general Educational Psychology at the Master's (M.S.) level; School Psychology at the specialist (Ed.S.) level; and in the areas of general Educational Psychology (college teaching) and School Psychology at the doctoral (Ph.D.) level. In addition, M.S. and Ed.S. Degrees are offered in the area of Special Education. Because of the increasing use of computer technology, students in all degree programs are strongly encouraged to acquire computer competency skills.
- Student Retention Procedures: Professions engaged in protection of the public health and welfare charge their members with the responsibility of monitoring potential new members. Therefore, the Counselor Education and Educational Psychology faculty believe a component of their responsibility to their students, their professions, and the eventual consumers of services provided by graduates, is the necessity to monitor not only students' academic progress but also the personal characteristics of students that will affect their performance in therapy. These characteristics should be of a quality so as to NOT interfere with the students' professionalism or helping capacity. Accordingly, the department has adopted a policy outlining student retention procedures. This policy is printed in the Department of Counselor Education and Educational Psychology Graduate Program Handbook.
- Financial Assistance for Graduate Students. A limited number of scholarships are available for master's degree students in Rehabilitation Counseling. Many students hold assistantships in the Department, the Division of Student Affairs, the Office of Housing and Residence Life, the Bureau of Educational Research and Evaluation, and the Rehabilitation Research and Training Center on Blindness and Low Vision.

### Educational Psychology (EPY) (Non-teaching Option)

#### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
3 hours Math above College Algebra *excluding*:  
MA 1303, MA 1113, MA 1323

Science (6 hours)

BIO 1123 Animal Biology with lab  
3 hours Lab science from University CORE

Math/Science Elective (3 hours)

From University CORE *excluding*: MA 1303, MA 1113, MA 1323

Humanities (6 hours)

3 hours History courses  
3 hours Literature courses

Fine Arts (3 hours)

See University CORE

Social Sciences (6 hours)

SO 1003 Intro to Sociology  
3 hours University CORE course *excluding* EPY prefixes

#### College Core

Computer Literacy (3 hours)

TKT 1273 Microcomputers **or** other approved course

Junior/Senior Writing

EDF 3413 Writing for Thinking

#### Major Core

PSY 1013 General Psychology  
EPY 2513 Human Growth & Development  
EPY 3543 Adolescent Psychology  
EPY 3503 Principles of Ed Psych  
EPY 3553 Giftedness and Creativity  
EPY 4033 Applied Learning Theory  
EPY 4073 Personality Adjustment  
EPY 4214 Psych & Ed Statistics  
EPY 4313 Measurement & Evaluation  
COE 4023 Intro to Counseling  
EDX 3213 Psych & Ed of Excep Child  
EPY 4513 Research Methods in EPY\*  
PSY 3623 Social Psychology  
EPY 4053 Psych & Ed of Mental Retard  
3 hours History  
3 hours Literature

\* Prerequisite: EPY 4214

In addition to the major requirement, a choice of one concentration (see following) and 10-17 hours of electives are required for the degree (total of 128 hours).

**Note:** Issues of entering grade point average and other requirements are being considered for admission into the Educational Psychology program for those students entering the program in the fall of 2003. Refer to the Department's *Undergraduate Handbook*.

#### Corrections Emphasis

Required Courses (15 hours)

COR 3103 The Criminal Justice System  
SO 2203 Cultural and Racial Minorities  
SO 3603 Criminology  
SO 4513 Correctional Systems  
SO 4233 Juvenile Delinquency

Electives (6 hours)

AN 4313 Human Identification  
SO 3313 Deviant Behavior  
SO/COR White Collar Crime  
SO/COR Policing and Law Enforcement Systems  
SO 3503 Violence in the U.S.  
PS 4183 Judicial Process  
PSY 4213 Psychology of Abnormal Behavior  
PSY 4223 Drug Use and Abuse  
SW 4613 Child Welfare Services  
SO 3343 Gender, Crime, and Justice  
6 hours Selected SO courses

#### Total hours needed for major: 128

Additionally, students are encouraged to complete the 12 hours of field work (COR 3310 and COR 3320) in order to receive the corrections certificate.

#### Human Development Child and Family Studies Emphasis

Required Courses (15 hours)

HS 2803 Prenatal and Infant Development  
HS 2813 Child Development\*  
HS 3803 Child Care Procedures\*\*  
HS 4803 Art of Parenting (Jr. Standing)  
HS 4853 The Family: A Transactional Approach\*\*\*

Electives (6 hours)

HS 4403 Introduction to Gerontology  
HS 3813 Child Development\*\*\*\*  
HS 3823 Designing Child Programs  
HS 3203 Child Health and Nutrition  
HS 4333 Families, Legislation, and Public Policy  
HS 4843 Family Interaction  
HS 4863 Consumer Aspects of Aging

#### Total hours needed for major: 128

\* Prerequisite: PSY 1013

\*\* Prerequisite: HS 2813

\*\*\* Prerequisite: 3 hours SOC or PSY and Jr. Standing

\*\*\*\* Prerequisite: HS 2813 and Jr. Standing

#### Counselor Education Emphasis

Required Courses (18 hours)

COE 3313 Rehabilitation Services  
COE 4903 Developmental Counseling and Mental Health  
COE 4013 Facilitative Skills Development  
COE 4743 Gender Issues in Counseling **or**  
PSY 3203 Psychology of Gender Differences  
COE 4713 Issues in Aging **or**  
PSY 4983 Psychology of Aging

Electives (0-6 hours) (You may substitute electives for the above courses with advisor approval.)

3 hours EPY Practicum  
EPY 4113 Behavioral and Cognitive Interventions  
COE 4363 Introduction to Sign Language  
PSY 3213 Psychology of Abnormal Behavior  
PSY 4223 Drug Use and Abuse  
COE 4353 Adapt Tech and Disability  
PSY 4653 Social Cognition

3 hours Peer Counselors\*  
COE 4513 Paraprofessionals in Student Affairs\*\*

Other relevant courses may be added with advisor approval.

**Total hours needed for major: 128**

\* Requires application and invitation to participate.  
\*\* Residence Hall advisors only.

**Physical Education Emphasis**

Required Courses (18 hours)

PE 1233 Introduction to Leisure  
PE 4233 Biomechanics  
PE 3213 Emergency Health Care  
PE 3133 Adaptive Physical Education  
PE 3223 Motor Development  
PE 3303 Physiology of Exercise

**Total hours needed for major: 128**

**Psychology with Applied/Industrial/Human Resource Emphasis**

Required Courses

PSY 3353 Motivation\*  
PSY 4253 Industrial Psychology\*  
MGT 3114 Principles of Management\*\*  
MGT 3513 Intro to Human Resources Management  
MGT 3213 Organizational Communications\*\*\*

Electives (6 hours)

MGT 3413 Production Management  
MGT 4543 Compensation Management\*\*\*\*  
MGT 4533 Advanced Human Resource Management  
MGT 4213 Organizational Communications II\*+  
PSY 4123 Quant Techniques in Psy Using Computers\*++

**Total hours needed for major: 128**

\* Prerequisite: PSY 1013  
\*\* Prerequisite: EC 2113  
\*\*\* Prerequisite: EN 1113 and Jr. Standing  
\*\*\*\* Prerequisite: MGT 3513  
\*+ Prerequisite: MGT 3213  
\*++ Prerequisite: PSY 3103 or equivalent

**SPECIAL EDUCATION (EXED)**

Major Advisors: Lynne Arnault, Kent Coffey, Sandy Devlin, and John Obringer  
Licensure Advisor: Frank Elrod  
Office: 310 Allen Hall

The program in Special Education is designed to prepare teachers to teach children and youth with mental retardation, learning disabilities, and other areas of exceptionality. The curriculum in special education is designed to meet the requirements for the endorsements in the areas of specialization.

Some students may wish to obtain licensure in the areas of special education and elementary education.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra **or**  
MA 1303 Quantitative Reasoning  
3 hours MA Elective (see University CORE)\*\*

Science (6 hours)

Biological Science w/lab (See University CORE)  
Physical Science w/lab (See University CORE)

Math/Science Elective (3 hours)

3 hours See University CORE

Humanities (6 hours)

3 hours Humanities Elective (See University CORE)  
3 hours Humanities Elective (See University CORE)

Fine Arts (3 hour)

3 hours See University CORE

Social/Behavioral Sciences (6 hours)

PSY 1013 General Psychology  
3 hours Social/Behavioral Elective (See University CORE)

Elective (3 hours)

3 hours See University CORE

**College Core**

Computer Literacy

TKT 1273 Microcomputers **or** other approved course

Junior/Senior Writing

EDF 3413 Writing for Thinking

Health/Physical Education

PE 3213 Emergency Health Care

**Major Core**

15 hours 5 Collateral Core Electives  
EDF 3243 Planning/Managing Learning\*  
EDF 3333 Social Foundations Ed  
EPY 2513 Human Growth and Dev  
EPY 3253 Evaluating Learning\*  
EPY 4053 Psy of the Mental Reg  
RDG 3113 Foundations of Literacy\*  
3 hours Reading Elective\*  
EDX 3203 Intro to Learning Disabilities  
EDX 3213 Psychology of Exceptional Child  
EDX 3223 Intro to Emotional  
EDX 3233 Contingency Management  
EDX 4113 Diag/Pres M/M for Early-Age\*  
EDX 4123 Diag/Pres M/M for Elem-Age\*  
EDX 4133 Diag/Pres M/M/ for Sec-Age\*  
EDX 4353 Assist Tech in Special Education  
EDX 4413 Working with Parents  
EDX 4887 Student Teaching in EXED\*  
EDX 4898 Student Teaching In EXED\*

**Total hours needed for major: 128**

\* Requires admission to Teacher Education.  
\*\* If MA 1113 is taken, MA 1123 must be also taken. If a course in math higher than College Algebra is elected, the student must choose one additional math or science course.

**Department of CURRICULUM  
and INSTRUCTION**

Department Head: Professor Esther Howard  
Office: 314 Allen Hall

Please refer to "Degree Program Modifications" statement located under "CURRICULA" in the College of Education section of this catalog.

This department offers curricula in Elementary Education (preschool, elementary, and middle school), and in the academic areas of high-school teaching (English, foreign language, mathematics, science, social studies, and speech).

**ELEMENTARY EDUCATION (ELED)**

Major Advisors: Devon Brenner; Susan Dillard;  
Eric Groce; Robin Groce;  
Lisa Hobson-Horton;  
Terry Jayroe; Terri Kurz, Margaret Pope; Debra Prince;  
Jeanne Swafford; Nancy Verhoek-Miller  
Office: 314 Allen Hall



The curriculum in Elementary Education is designed to prepare teachers at the undergraduate and graduate levels. Program purposes are to foster and encourage both pre-service and in-service growth of teachers and other school personnel, and to offer needed and desired professional services.

Programs offered on the graduate level include the Master of Science Degree, Educational Specialist, and the Doctor of Education and Doctor of Philosophy Degrees. Licensure at the undergraduate level includes N-1, K-4, and 4-8. Students must obtain licensure for K-4 and one or both of the following: N-1, 4-8. (Please see your advisor for specifics). Persons interested in an Elementary Education Degree are advised to obtain a copy of the Advising Worksheet, available in room 314 Allen Hall or from any advisor.

## ELEMENTARY EDUCATION

### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (12 hours)

MA 1313 College Algebra  
MA 1413 Structure of Real Number System  
MA 1423 Problem Solving & Real Numbers  
MA 1433 Informal Geometry & Measurement

Science (6-9 hours)

BIO 1001 Biological Laboratory  
BIO 1033 Biological Science  
PH 1011 Physical Science Lab  
PH 1013 Physical Science Survey

Humanities (6 hours)

English Literature Elective (See University CORE)  
HI Elective (See University CORE)

Fine Arts (3 hours)

3 hours See University CORE

Social/Behavioral Sciences (6 hours)

PSY 1013 General Psychology  
SO 1003 Intro to Sociology

### College Core

Computer Literacy

TKT 1273 Microcomputers **or** other approved course

Junior/Senior Writing

EDF 3413 Writing for Thinking

Health/Physical Education  
(See Major Core)

### Major Core

EDF 3333 Social Foundations of Ed  
EPY 2513 Human Growth and Development  
EDX 3213 Psych and Education of Except Child & Youth  
MU 3123 Basics of Music\*  
PE 3123 Elem School Health and PE\*  
RDG 3113 Foundations of Literacy\*  
RDG 3213 Teaching of Literacy\*  
EDE 2511 Intro to Elementary Ed  
EDE 3123 Early Childhood Education\*  
EDE 3233 Teaching Children's Literature\*  
EDE 3443 Creative Arts in Elem School\*  
EDE 4113 Science for Children\*  
EDE 4123 Elementary School Arithmetic\*  
EDE 4133 Language Arts\*  
EDE 4143 Social Studies in Elem School\*  
EDE 4887 Student Teaching\*  
EDE 4888 Student Teaching\*

### General Core

PH 1021 Physical Science Lab II  
PH 1023 Physical Science Survey II  
GR 1123 Intro to World Geography  
PS 1113 American Government  
3 hours English Elective (See University CORE)

K-4/4-8 General Elementary Certification  
3-15 hours Concentration Electives\*\*

N-1/K-4 Elementary and Early Childhood Certification  
24 hours Early Childhood Specialization\*\*\*

**Total hours needed for major: 134**

\* Requires admission to Teacher Education.

\*\* Two Subject Matter Concentrations of 18 hours each are required. See advisor and Elementary Education Advising Worksheet for Concentration requirements.

\*\*\* See advisor and Elementary Education Advising Worksheet for Early Childhood Certification requirements.

## SECONDARY EDUCATION

It is the purpose in the secondary education area to educate students to teach the academic subjects in grades 7-12, inclusive; to furnish professional courses and experiences for those desiring to teach the following subject areas; and to collaborate with the other schools of the University in matters of teacher education.

Licensure for a secondary education degree includes grades 7-12 in the following content areas; English Language Arts, Speech, Foreign Language, Mathematics, Science, and Social Studies.

Through its graduate program in secondary education, including in-service education, the department furnishes additional professional courses and experiences for teachers, principals, supervisors, and superintendents; and offers consultative services to school boards and school systems in need of such services.

Degrees offered on the graduate level include Master of Education, Educational Specialist and the Doctor of Education and Doctor of Philosophy.

## ENGLISH LANGUAGE ARTS (ENED)

Major Advisors: Kay Brocato, Linda Coats, Vincent McGrath,  
Office: 314 Allen

The curriculum in English Language Arts is offered to prepare students to teach English Language Arts in high schools and middle schools. A minimum of 42 hours in English beyond freshman composition is required for a major.

### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
ST 2113 Stats for Behav Science **or**  
MA higher than Algebra

Science (6 hours)

BIO 1023 Plants and Humans  
BIO 1123 Animal Bio Lab  
PH 1013 Physical Science Survey  
PH 1011 Physical Science Lab

Math/Science Elective (3 hours)  
See University CORE

Humanities (6 hours)

HI 1063 Early US History  
HI 1073 Modern US History

Fine Arts (3 hours)

3 hours See University CORE

Social/Behavioral Sciences (6 hours)

PSY 1013 General Psychology  
SO 1003 Intro to Sociology

Elective (1 hour)

**College Core**

Computer Literacy

TKT 1273 Microcomputers **or** other approved course

Junior/Senior Writing

(See Content Area Writing Courses)

Health/Physical Education

PE 1223 Personal Health **or**

PE 3213 Emergency Health

**Major Core**

EDS 3411 Practicum in Secondary Ed  
EDF 3333 Social Foundations of Ed  
EDX 3213 Psych and Education of Except Child & Youth  
RDG 3513 Developing Reading Strategies  
EDE 3343 Teaching Adolescent Lit\*  
EPY 3143 Human Development/Learning\*  
EDF 3243 Planning/Managing Learning\*  
EPY 3253 Evaluating Learning\*  
EDS 4673 Teaching of Language Arts\*\*  
EDS 4886 Student Teaching in Second Ed\*  
EDS 4896 Student Teaching in Second Ed\*  
EDS 4873 Prof Seminar in Second Ed\*

**Content Area**

EN 2213 English Literature I  
EN 2223 English Literature II  
EN 2243 American Literature I  
EN 2253 American Literature II  
EN 2273 World Literature I **or**  
EN 2283 World Literature II  
EN 2203 Intro to Literature  
EN 3423 Descriptive English Grammar  
EN 4503 Shakespeare I **or**  
EN 4513 Shakespeare II  
EN 4413 History of English Lang **or**  
EN 4403 Intro to Linguistics  
EN 4323 Lit Crit Plato to Present **or**  
EN 4353 20th Century Criticism  
CO 1403 Mass Media **or**  
CO 1503 Theatre  
EN 3413 Advanced Comp **or**  
EN 3303 Creative Writing (Jr/Sr Writing Requirement for this major only.)  
6 hours EN Electives - 4000 level

**Total hours needed for major: 128**

\* Requires admission to Teacher Education.

\*\* Taught Fall semesters only.

**FOREIGN LANGUAGES (FLED)**

Major Advisor: William A. Person  
Office: 116 Allen Hall

This curriculum is offered for the education of prospective teachers of foreign languages. A minimum of 32 semester hours in one language is required as the first teaching field. A second teaching field requires 18 hours in the second language.

Students should consult the Foreign Language Department if they have questions pertaining to courses in Foreign Languages.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6-9 hours)

MA 1313 College Algebra  
3 hours MA higher than College Algebra (see University CORE)

Science (6-9 hours)

BIO Science with lab (see University CORE)  
Physical Science with lab (see University CORE)

Math/Science Elective (3 hours)

See University CORE

Humanities (6 hours)

EN Lit Sequence (World, Eng or Am) See University CORE  
EN Lit Sequence (World, Eng or Am) See University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

PSY 1013 General Psychology  
SO 1003 Intro to Sociology

**College Core**

Computer Literacy

TKT 1273 Microcomputers **or** other approved course

Junior/Senior Writing

EDF 3413 Writing for Thinking

Health/Physical Education

PE 1223 Personal Health

**Major Core**

EDF 3243 Plan/Manage Learning\*  
EDF 3333 Social Foundations  
EPY 3143 Human Development/Learning\*  
EPY 3253 Evaluating Learning\*  
EDX 3213 Psy & Ed of Except Child  
RDG 3513 Rdg Strat Second School\*  
EDS 3411 Pract in Second Ed  
EDS 4673 Teach of Language Arts\*\*  
EDS 4873 Prof Seminar in Second Ed\*  
EDS 4886 Student Teaching\*  
EDS 4896 Student Teaching\*

**General Core**

6 hours History Sequence (Western, World, US) - see University CORE  
PS 1113 American Government  
3 hours Elective - See University CORE

**Content Area**

6 hours FLF/FLS/FLG or FLL w/lab  
18 hours FLF/FLS/FLG or FLL  
8 hours FLF/FLS/FLG or FLL (adv w/lab)

**Total hours needed for major: 129**

\* Admission to Teacher Education Required

\*\* Taught Fall semester only.

**MATHEMATICS (MAED)**

Major Advisor: Dana Franz  
Office: 314 Allen Hall

This curriculum is offered for the education of prospective teachers of mathematics in grades 7-12. A minimum of 36 semester hours of mathematics is required.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**

EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6-9 hours)

MA 1713 Calculus I  
MA 1723 Calculus II

Science (6-9 hours)  
 3 hours Biological Science w/lab (See University CORE)  
 3 hours Biological Science (See University CORE)  
 3 hours Physical Science (See University CORE)

Humanities (6 hours)  
 HI 1063 Early US History  
 HI 1073 Modern US History

Fine Arts (3 hours)  
 See University CORE

Social/Behavioral Sciences (6 hours)  
 PSY 1013 General Psychology  
 SO 1003 Intro to Sociology

### College Core

Computer Literacy  
 TKT 1273 Microcomputers **or** other approved course **or**  
 CS 1253 Computer Prog I

Junior/Senior Writing  
 EDF 3413 Writing for Thinking

Health/Physical Education  
 PE 1223 Personal Health

### Major Core

EDF 3243 Planning/Managing Learning\*  
 EDF 3333 Social Foundations Of Ed  
 EDX 3213 Exceptional Child and Youth  
 EPY 3143 Human Development/Learning\*  
 EPY 3253 Evaluating Learning\*  
 RDG 3513 Developing Reading Strategies\*  
 EDS 3411 Practicum in Secondary Ed

EDS 4633 Teaching of Mathematics\*  
 EDS 4873 Prof Seminar in Second Ed\*  
 EDS 4886 Student Teaching in Second Ed\*  
 EDS 4896 Student Teaching in Second Ed\*

### General Core

PS 1113 American Government  
 6 hours EN Literature Electives (See University CORE)  
 3 hours Physical Science

### Content Area

MA 2733 Calculus III  
 MA 2743 Calculus IV  
 MA 3053 Foundations of Math **or**  
 MA 3353 Differential Equations II **or**  
 MA 4163 Group Theory **or**  
 MA 4173 Number Theory  
 MA 3113 Linear Algebra  
 MA 3163 Modern Algebra  
 MA 3253 Differential Equations I  
 MA 3463 Foundations of Geometry  
 MA 3513 History of Math  
 MA 4513 Prob & Stats for Teachers **or**  
 MA 4523 Intro to Probability

**Total hours needed for major: 128**

\* Requires admission to Teacher Education.

## BIOLOGY EDUCATION (BIOED)

Major Advisors: Burnette Hamil  
 Office: 314 Allen Hall

The Biology Education Curriculum is designed in accordance with the recommendations of the National Science Teachers Association and the National Science Education Standards for prospective teachers at the secondary level (grades 7-12). Courses designed for nonscience majors will not count toward a degree in any area of science education.

### University Core

English Composition (6 hours)  
 EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I  
 EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II  
 Public Speaking (3 hours)  
 CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics (6 hours)  
 MA 1313 College Algebra  
 MA 1323 Trigonometry **or** higher Math

Science (6 hours)  
 CH 1043 General Chemistry  
 CH 1053 General Chemistry

Math/Science Elective (3 hours)  
 See Sciences Content Area

Humanities (6 hours)  
 See University CORE

Fine Arts (3 hours)  
 See University CORE

Social/Behavioral Sciences (6 hours)  
 PSY 1013 General Psychology  
 See University CORE

### College Core

Computer Literacy  
 TKT 1273 Microcomputers **or** other approved course

Junior/Senior Writing  
 EDF 3413 Writing for Thinking

Health/Physical Education  
 PE 1223 Personal Health

### Major Core

EDF 3243 Planning/Managing Learning\*  
 EDF 3333 Social Foundations of Ed  
 EDS 3411 Practicum in Secondary Ed  
 EDX 3213 Exceptional Child and Youth  
 EPY 3143 Human Development/Learning\*  
 EPY 3253 Evaluating Learning\*  
 EDS 4653 Teaching of Science\*  
 EDS 4873 Prof Seminar in Second Ed\*  
 EDS 4886 Student Teaching in Second Ed\*  
 EDS 4896 Student Teaching in Second Ed\*

### Content Area

BIO 1203 Plant Biology  
 BIO 1504 General Zoology w/lab  
 BIO 2004 Human Anatomy  
 BIO 2014 Human Physiology  
 BIO 2103 Cell Biology  
 BIO 3103 Human Genetics  
 BIO 3104 Ecology  
 BIO 3304 General Microbiology  
 BIO 4113 Evolutionary Biology  
 CH 1213 Fund of Chemistry  
 CH 1211 Invest in Chemistry  
 CH 1223 Fund of Chemistry  
 CH 1221 Invest in Chemistry  
 CH 2503 Elem Organic Chemistry  
 BCH 3613 Elem Biochemistry  
 3 hours Science Elective  
 3 hours Botany (3000-4000level)  
 3 hours Biology Elective or Directed Ind Study

**Total hours needed for major: 128**

\* Requires Admission to Teacher Education.

## CHEMISTRY, PHYSICS and GENERAL SCIENCE (CPED)

Major Advisors: Burnette Hamil  
 Office: 314 Allen Hall

A student may elect to obtain licensure in only chemistry or physics and general science. (Please see advisor). Courses designed for nonscience majors will not count toward a degree in any area of science education.

### University Core

English Composition (6 hours)  
 EN 1103 English Comp I **or**

EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I  
 EN 1113 English Comp II **or**

EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Mathematics (6-9 hours)	
MA 1313	College Algebra
6 hours	Higher level MA - See advisor
Science (6-9 hours)	
PH 1113	General Physics
CH 1213	Fund of Chemistry
Humanities Electives (6 hours)	See University CORE
Fine Arts (3 hours)	See University CORE
Social/Behavioral Sciences (6 hours)	
PSY 1013	General Psychology
3 hours	Social/Behavioral Science Elect See University CORE)
<b>College Core</b>	
Computer Literacy	
TKT 1273	Microcomputers <b>or</b> other approved course
Junior/Senior Writing	
EDF 3413	Writing for Thinking
Health/Physical Education	
PE 1223	Personal Health

<b>Major Core</b>	
EDF 3243	Planning/Managing Learning*
EDF 3333	Social Foundations of Ed
EDS 3411	Practicum in Secondary Ed
EDX 3213	Exceptional Child and Youth
EPY 3143	Human Development/Learning*
EPY 3253	Evaluating Learning*
EDS 4653	Teaching of Science*
EDS 4873	Prof Seminar in Second Ed*
EDS 4886	Student Teaching in Second Ed*
EDS 4896	Student Teaching in Second Ed*
RDG 3513	Developmental Reading Strategies

**General Core**  
3 hours Elective - see University CORE

<b>Content Area</b>	
BIO 1504	General Zoology/Lab
3-4 hours	BIO with lab - See advisor
3-4 hours	GG Elective
CH 1213/1211	Chemistry/lab
CH 1223/1221	Chemistry/lab
CH 2503/2501	Elem Organic Chem/lab
3 hours	CH/PH elective
PH 1063	Descriptive Astronomy
PH 1113	General Physics <b>or</b> PH 2213
PH 1123	General Physics <b>or</b> PH 2222
PH 1113	General Physics <b>or</b> PH 2233
4 hours	Science Elective (3000-4000 level)

**Total hours needed for major: 128**

\* Requires admission to teacher education.

## SOCIAL STUDIES (SSED)

Major Advisor: Susie Burroughs  
Office: 314 Allen Hall

Since social studies teachers in high school are expected to be acquainted with several branches of the field including history, government, economics, sociology, psychology, and geography, the following curriculum provides opportunity for preparation in each field. A composite major of at least 54 hours of social science with at least 3 hours in each field listed above is required. Also, a student must have at least 6 hours in World or European History, 6 hours in American History, 3 hours in a Non-Western History elective, and 3 hours in Mississippi History.

A student may get enough credit in either of the social science fields to constitute a major.

### University Core

English Composition (6 hours)	
EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Mathematics (6 hours)	
MA 1313	College Algebra
ST 2113	Stats for Beh Science <b>or</b>
MA higher than Algebra	
Science (6 hours)	
	Biological Science w/lab (See University CORE)
	Physical Science w/lab (See University CORE)
Math/Science Elective (3 hours)	(See University CORE)
Humanities (6 hours)	
EN Literature Elective (See University CORE)	
3 hours	Elective (See University CORE)
Fine Arts (3 hours)	See University CORE
Social/Behavioral Sciences (6 hours)	
PSY 1013	General Psychology
SO 1003	Intro to Sociology

### College Core

Computer Literacy	
TKT 1273	Microcomputers <b>or</b> other approved course
Junior/Senior Writing	
EDF 3413	Writing for Thinking
Health/Physical Education	

PE 1223	Personal Health
<b>Major Core</b>	
EDF 3243	Planning/Managing Learning*
EDF 3333	Social Foundations of Ed
EDS 3411	Practicum in Secondary Ed
EDX 3213	Exceptional Child and Youth
EPY 3143	Human Development/Learning*
EPY 3253	Evaluating Learning*
RDG 3513	Developing Reading Strategies*
EDS 4643	Teaching of Social Studies*
EDS 4873	Prof Seminar in Second Ed*
EDS 4886	Student Teaching in Second Ed*
EDS 4896	Student Teaching in Second Ed*
<b>Content Area</b>	
EC 2113	Prin of Macroeconomics
EC 2123	Prin of Microeconomics
GR 1123	Intro to World Geography
HI 1063	Early US History
HI 1073	Modern US History
HI 1163	World History before 1500
HI 1173	World History since 1500
HI 3333	Mississippi History
HI 3903	Historiography & Historical Methods
HI 4653	The History of Science & Tech
3 hours	HI, PS, EC, or GR Elective (3000 level or above)
3 hours	HI, PS, EC, or GR Elective (3000 level or above)
3 hours	HI, PS, EC, GR, or SO Elective (3000 level or above)
HI 4403	The Ancient Near East <b>or</b>
HI 4903	The Far East
PS 1113	American Government
PS 1513	Comparative Government

**Total hours needed for major: 130**

\* Admission to Teacher Education required

**SPEECH (SPED)**

Major Advisor: William A. Person  
Office: 116 Allen Hall

This curriculum is offered for the education of prospective teachers of speech. A minimum of 38 semester hours of Speech is required.

**University Core**

English Composition (6 hours)  
EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I  
  
EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II  
Public Speaking (3 hours)  
CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication  
Mathematics (6 hours)  
MA 1313 College Algebra  
MA higher than College Algebra (See University CORE)  
Science (6 hours)  
Biological Science w/lab (See University CORE)  
Physical Science w/lab (See University CORE)  
Math/Science Elective (3 hours)  
See University CORE  
Humanities (6 hours)  
EN Lit Sequence - World, Eng, or Am (See University CORE)  
EN Lit Sequence - World, Eng, or Am (See University CORE)  
Fine Arts (3 hours)  
See University CORE  
Social/Behavioral Sciences (6 hours)  
PSY 1013 General Psychology  
SO 1003 Intro to Sociology

**College Core**

Computer Literacy  
TKT 1273 Microcomputers **or** other approved course  
Junior/Senior Writing  
EDF 3413 Writing for Thinking  
Health/Physical Education  
PE 1223 Personal Health

**Major Core**

EDF 3243 Planning/Managing Learning\*  
EDF 3333 Social Foundations of Ed  
EDX 3213 Exceptional Child and Youth  
EPY 3143 Human Development/Learning\*  
EPY 3253 Evaluating Learning\*  
RDG 3513 Developing Reading Strategies\*  
EDS 3411 Practicum in Secondary Ed  
EDS 4673 Teaching of Language Arts\*  
EDS 4873 Prof Seminar in Second Ed.\*  
EDS 4886 Student Teaching in Second Ed\*  
EDS 4896 Student Teaching in Second Ed\*

**General Core**

3 hours Hist Sequence Elective (Western, World, or US)  
(See University CORE)  
3 hours Hist Sequence Elective (Western, World, or US)  
(See University CORE)  
PS 1113 American Government

**Content Area**

CO 1223 Communication Theory  
CO 1403 Introduction to Mass Media  
CO 1503 Introduction to Theatre  
CO 2213 Small Group Communication  
CO 2253 Interpersonal Communication  
CO 2333 TV Production  
CO 2503 Acting  
CO 2524 Stagecraft and Lighting  
CO 2613 Intro to Oral Interpretation  
CO 3833 Interviewing  
CO 4524 Directing **or**  
CO 2574 Summer Theatre Workshop **or**  
CO 1513 Theatre Practicum

**Total hours needed for major: 129**

\* Requires admission to Teacher Education.

## Department of HEALTH, PHYSICAL EDUCATION, RECREATION and SPORT (HPERS)

Department Head: Professor Pamela Catledge-Kirk  
Office: 216A McCarthy Gymnasium  
Undergraduate Coordinator: Ben Abadie  
Office: 237 McCarthy Gymnasium

Please refer to **Degree Program Modifications** statement located under **CURRICULA** in the College of Education section of this catalog.

The Department of Health, Physical Education, Recreation and Sport offers four undergraduate concentrations: Teaching/Coaching Education, Fitness Management, Clinical Exercise Physiology, and Sport Communications.

Community college transfer hours not to exceed 64 semester hours may be applied to the Health, Physical Education, Recreation and Sport degree program.

All concentrations require the specified course requirements cited within the University CORE, college core, and major core course listings. Specified area content courses vary among the four concentrations.

**Teaching/Coaching Concentration**

Major Advisors: Paula Dohoney, K. Randell Foxworth,  
Debbie Funderburk, Carla Smith, Holly Wiley, and Glen Young

The teaching coaching concentration requires 128 semester hours of prescribed courses to complete the Bachelor of Science in Physical Education. The curriculum is designed to meet the need of students interested in becoming physical education teachers and coaches. The teaching block courses must be included in the on-campus requirement of thirty-two semester hours of junior and senior courses. Students who complete the program will be eligible for teacher licensure by the Mississippi Department of Education.

**Fitness Management Concentration**

Major Advisors: Ben Abadie, Joseph Chromiak, Barry Hunt, John Lamberth and

The fitness management concentration provides a basic understanding of the science behind physical fitness and the knowledge to implement effective fitness programs. This concentration also provides students a basic preparation in business to meet the economic challenges within the profession. The students are prepared to work as fitness instructors, exercise specialists, and directors or managers of wellness and fitness centers in hospitals and corporate settings.

**Clinical Exercise Physiology Concentration**

Advisors: Ben Abadie, Joseph Chromiak, and John Lambert

The Clinical Exercise Physiology concentration is designed as a professional preparation program of study that enables students to work in clinical settings as an Exercise Specialists in Cardiac Rehabilitation and Pulmonary Rehabilitation. Students are equipped as Exercise Specialists in a variety of unique areas, such as exercise programs for individuals with diabetes, orthopedic limitations, arthritis, cancer, osteoporosis, renal failure, obesity, as well as programs for the elderly and pregnant women. The Clinical Exercise Physiology concentration also provides students with the essential information necessary to continue their academic career in other allied health professions such as Physical or Occupational therapy.

**Sport Communication Concentration**

Major Advisor: Jeremy Jordan

The sport communication concentration is designed to prepare students for the expanding career opportunity in the sport communication industry including print media, broadcast media, audio visual production, and sport promotions. Recommended areas of emphasis include broadcast media, print media, video production, and sport promotions. The program utilizes the strengths and expertise of faculty within the Department of HPERS and the Department of Communication. This specific training will prepare students for jobs in University and professional sport media departments, sport videography departments, television and radio broadcast media and sport promotions.

Students enrolled in this program will complete a nine hour internship. Internship locations depend on the career goals of the student. Students have been placed in internships in private, collegiate, and professional sports settings.

**Health, Physical Education,  
Recreation and Sport Program of Study****University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6 to 9 hours)

MA 1313 College Algebra  
ST 2113 Statistics for Behavioral Sciences **or**  
MA 1463 Finite Math & Intro Calculus **or**  
MA above College Algebra

Science (6 to 9 hours)

BIO 1023 Plants and Humans  
BIO 1123 Animal Biology with lab  
BIO 1004 Anatomy and Physiology with lab

Humanities (6 hours)

3 hours HI 1063/1073 (or other sequence)  
3 hours EN 2243/2253 American Literature

Fine Arts (3 hours)

PE 1123 History and Appreciation of Dance (required for SPCO)  
Other concentrations consult University CORE

Social Sciences (6 hours)

PSY 1013 General Psychology  
SO 1203 Marriage and Family (Req TCED Concentration)  
EC 2113 Prin Macro Eco (Req FMGT Concentration)  
SO 1003 Intro to Sociology (Req SPCO Concentration)

**College Core**

Computer Literacy

TKT 1273 Microcomputers in Ed **or** other approved course

Junior/Senior Writing

EDF 3413 Writing for Thinking (TCED, KINE, and FMGT Concentrations)  
CO 3423 Feature Writing (SPOC majors)

**Major Core - Common to all Concentrations**

PE 1313 Intro to Physical Education  
PE 3303 Physiology of Exercise  
PE 3213 Emergency Health Care  
PE 4173 Tests and Measurements\*

\* TCED majors - requires admission to Teacher Education.

**Teaching/Coaching Concentration**

Area Content - 40 hours

PE 1112 Teaching Team Sports  
PE 1122 Teaching Individual and Dual Sports  
PE 1132 Teaching Lifetime Activities  
PE 1142 Teaching Rhythms  
PE 1223 Personal Health  
PE 2001 Practicum in Health and PE  
PE 2003 Foundations of Health Education  
PE 3133 Adapted Physical Education  
PE 3153 Methods of Elementary Physical Education  
PE 3163 Prin & Mthds of Sec Sch Hlth & PE  
PE 3183 Psychology of Coaching  
PE 3223 Motor Development  
PE 4233 Biomechanics  
PE 4853 Motor Learning and Skill Analysis

Choose two of the following:

PE 3422 Coaching Football  
PE 3432 Coaching Basketball  
PE 3452 Coaching Softball and Baseball

Professional Education Courses- 30 hours

EDF 3333 Social Foundations in Ed  
EPY 3143 Human Development and Learning\*  
EDX 3213 Psy & Ed of Except Child & Youth  
EDF 3243 Planning and Managing Learning\*  
EPY 3253 Evaluating Learning\*  
PE 4873 Professional Seminar in PE & Athletics\*  
PE 4886 Student Teaching in Physical Education\*  
PE 4896 Student Teaching in Physical Education\*

\* Requires admission to Teacher Education.

**Total hours needed for major: 128****Fitness Management Concentration**

Area Content - 55 hours

ACC 2013 Principles of Financial Accounting  
EC 2123 Principles of Microeconomics  
HS 2293 Individual and Family Nutrition  
MGT 3113 Principles of Management  
MGT 3513 Intro to Human Resource Mgt  
MKT 3013 Principles of Marketing  
MKT 4123 Advertising  
PE 1021 Basic Fitness Concepts  
PE 1223 Personal Health  
PE 2003 Foundations of Health Education  
PE 3263 Basic Principles of Health Promotion  
PE 3273 Athletic Training  
PE 4113 Fitness Programs and Testing Procedures  
PE 4133 Exercise Programs for Special Pop  
PE 4183 Exercise and Weight Control  
PE 4210 Internship (3 - 9 hours)  
PE 4233 Biomechanics

PE Skill Elective (Choose five)

PE 1001 Racquetball  
PE 1041 Aerobics  
PE 1051 Beginning Karate  
PE 1101 Intermediate Karate  
PE 1071 Soccer  
PE 1081 Beginning Golf  
PE 1091 Contemporary Dance  
PE 1131 Fitness Walking and Jogging  
PE 1221 Volleyball  
PE 1231 Modern Dance  
PE 1241 Tennis  
PE 1361 Strength Training  
PE 1461 Badminton  
4 hours PE Electives  
6 hours Free Electives

**Total hours needed for major: 128****Clinical Exercise Physiology Concentration**

Area Content - 55 hours

PE 2603 Medical Terminology  
PE 3643 Appl Anatomy for Allied Health Sciences  
PE 3613 Exercise Electrocardiography  
PE 3623 Applied Exercise Physiology

PE 3633 Rehabilitation Techniques  
PE 4603 Exercise in Health and Disease  
HS 2293 Individual and Family Nutrition  
PE 1021 Basic Fitness Concepts  
PE 1213 Introduction to Exercise Science

PE 1223	Personal Health
PE 2003	Foundations of Health
PE 3173	Measurement and Evaluation in Exer Science
PE 3263	Basic Principles of Health Promotion
PE 3273	Athletic Training
PE 4113	Fitness Programs and Testing Procedures
PE 4133	Exercise Programs for Special Pop
PE 4183	Exercise and Weight Control
PE 4210	Internship (3 - 9 hours)
PE 4233	Biomechanics

## PE Skill Electives (Choose 5)

PE 1001	Racquetball
PE 1041	Aerobics
PE 1051	Beginning Karate

PE 1101	Intermediate Karate
PE 1071	Soccer
PE 1081	Beginning Golf
PE 1091	Contemporary Dance
PE 1131	Fitness Walking and Jogging
PE 1221	Volleyball
PE 1231	Modern Dance
PE 1241	Tennis
PE 1361	Strength Training
PE 1461	Badminton
4 hours	PE Electives
6 hours	Free Electives

**Total hours needed for major: 128****Sport Communication Concentration**

## Area Content - 70 hours

CO 1403	Intro to the Mass Media
CO 1223	Intro to Communication Theory
CO 2333	Television Production
CO 2343	Writing for Radio and TV
CO 2413	Intro to News Writing
CO 2803	Introduction to Public Relations
CO 3403	Photography
CO 3823	Public Relations Copy and Layout
CO 3833	Interviewing
HI 3213	History of Sports in America
SO 4333	Sociology of Sport
PE 3183	Psychology of Coaching
PE 3422	Coaching Football
PE 3432	Coaching Basketball
PE 3452	Coaching Softball/Baseball
PE 3273	Athletic Training I
PE 4316	Sports Communication Internship

## PE Skill Electives (Choose 4)

PE 1001	Racquetball
PE 1041	Aerobics

PE 1051	Beginning Karate
PE 1101	Intermediate Karate
PE 1071	Soccer
PE 1081	Beginning Golf
PE 1091	Contemporary Dance
PE 1131	Fitness Walking and Jogging
PE 1221	Volleyball
PE 1231	Modern Dance
PE 1241	Tennis
PE 1361	Strength Training
PE 1461	Badminton
PE Electives (Choose 6 hours)	
PE 3133	Adapted Physical Education
PE 3223	Motor Development and Movement
PE 4233	Biomechanics
Free Electives	
9 hours	Free Electives

**Total hours needed for major: 128****Department of MUSIC EDUCATION (MUE)  
(MU), (MUA), (MUE)**Major Advisor: Michael R. Brown  
Office: Music Building APlease refer to **Degree Program Modifications** statement located under **CURRICULA** in the College of Education section of this catalog.**University Core**

## English Composition (6 hours)

EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I

EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II

## Public Speaking (3 hours)

CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication

## Mathematics (6-9 hours)\*

MA 1313	College Algebra
3 hours	Above College Algebra See University CORE

## Science (6-9 hours)\*

3 hours	Bio Science with lab See University CORE
3 hours	Science Elective with Lab
3 hours	Math or Science Elective

## Math/Science Elective (3 Hours) See University CORE

## Humanities (6 hours)

3 hours	Literature Elective See University CORE
3 hours	History Elective See University CORE

## Fine Arts (3 hours)

MU 2323	History and Lit of Music II
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## Social Sciences (6 hours)

PSY 1013	General Psychology
3 hours	Social/Behav Science Elective See University CORE

**College Core**

Computer Literacy

## Music Theory Sequence (see Major Core)

## Junior/Senior Writing

EDF 3413	Writing for Thinking
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## Health/Physical Education

PE 1223	Personal Health
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**Major Core**

EDF 3333	Social Foundations
EDX 3213	Psy and Ed of Exc Children
EPY 3143	Human Development
MU 1010	Recital**
MU 1162	Survey of Music Styles
MU 1213	Music Theory I
MU 1321	Ear Training I
MU 1413	Music Theory II
MU 1521	Ear Training II
MU 2613	Music Theory III
MU 2721	Ear Training III
MU 2813	Music Theory IV
MU 2913	Ear Training IV
MU 3333	Orchestration
MU 2322	History and Literature of Music I
MU 3412	Conducting
MU 3442	Advanced Conducting
MU 4313	Form and Analysis
MUE 3001	Practicum
MUE 3242	Planning & Mng Learn in Music Education
MUE 3213	Performance Assess in Music Education
MUE 4873	Seminar in Music Ed
MUE 4886	Student Teaching
MUE 4896	Student Teaching

**Concentration - Must choose a concentration from the following**

\* A total of 15 hours in Math and Science

\*\* Must be enrolled each semester - required admission to Teacher Ed

### Instrumental Concentration

The curriculum in instrumental music education is designed to prepare instrumental music teachers for positions in junior high schools, and high schools. Students who complete this program are fully qualified for licensure by the Mississippi Department of Education. This program provides the student with a balanced curriculum, combining the practical and theoretical aspects of music education. All instrumental majors must participate in the University Band during every semester of their attendance at MSU except during the semester in which they student teach. (Students are advised to participate in more than two ensembles only after consultation with their advisor and/or the department head.) All Instrumental Music Education majors must study the same instrument in applied lessons for at least six semesters, the last of which will culminate in a Senior Recital.

MU 1131	Voice Class I	MUE 3231	String Class
MU 2111	Music Majors Piano I	MUE 3242	Percussion Class
MU 2121	Music Majors Piano II	12 hours	Applied Instrument (6 semesters of 2 hour lessons)
MU 3111	Piano Class	7 hours	Major Ensemble
MU 3121	Piano Class <b>or</b>		
MU 3112	Funct Skills Piano I		
MU 3122	Funct Skills Piano II		
MUE 3212	Brass Techniques		
MUE 3222	Woodwind Techniques		

**Total hours needed for major: 134**

### Vocal Concentration

The curriculum in vocal music education is designed to prepare vocal teachers for positions in elementary schools, junior high schools, and high schools. Students who complete this program are fully qualified for licensure by the Mississippi Department of Education. This program provides the student with a balanced curriculum, combining the practical and theoretical aspects of music education. All vocal majors must participate in the University Chorus during every semester of their attendance at MSU except during the semester in which they student teach. (Students are advised to participate in more than two ensembles only after consultation with their advisor and/or the department head.) All Vocal Music Education-Voice Emphasis majors must study voice in applied lessons for at least seven semesters, the last of which will culminate in a Senior Recital.

MU 1131	Voice Class I*	2 hours	Applied Piano (2 semesters of study)
MU 2111	Music Majors Piano I	12 hours	Applied Voice (6 semesters study)
MU 2121	Music Majors Piano II	7 hours	Major Ensemble
MU 3111	Piano Class		
MU 3121	Piano Class <b>or</b>		
MU 3112	Funct Skills Piano I		
MU 3122	Funct Skills Piano II		
MUE 3262	Instrumental Class		
MUE 3262	Intro Piano Pedagogy		

\* 4 hours (with links to private study; 4 semesters of study)

**Total hours needed for major: 134**

### Keyboard Concentration

The curriculum in keyboard music education is designed to prepare music teachers for positions in elementary schools, junior high schools, and high schools. Students who complete this program are fully qualified for licensure by the Mississippi Department of Education. This program provides the student with a balanced curriculum combining the practical and theoretical aspects of music education. All keyboard majors must participate in the University Chorus during every semester of their attendance at MSU except during the semester in which they student teach. (Students are advised to participate in more than two ensembles only after consultation with their advisor and/or the department head.) All Vocal Music Education-Keyboard Emphasis majors must study piano in applied lessons for at least seven semesters, the last of which will culminate in a Senior Recital.

MU 1131	Voice Class I	2 hours	Applied Voice (2 semesters of study)
MU 3112	Funct Skills Piano I	12 hours	Applied Piano (6 semesters of study)
MU 3122	Funct Skills Piano II	7 hours	Major Ensemble (7 semesters of study)
MUE 3262	Instrumental Class		
MUE 3333	Intro Piano Pedagogy		

**Total hours needed for major: 134**

## Department of INSTRUCTIONAL SYSTEMS, LEADERSHIP, and WORKFORCE DEVELOPMENT (TTE), (OST), (INDT), (TTS)

Major Advisor: Anthony A. Olinzock  
Office: 100 Industrial Education Building

Please refer to **Degree Program Modification** statement located under **CURRICULA** in the College of Education section of this catalog.

### TECHNOLOGY TEACHER EDUCATION (TTE)

Emphasis: Business Technology  
Major Advisor: Connie Forde  
Office: 251 Industrial Education Building  
Cmf1@ra.msstate.edu  
Phone: 662-325-2280

The Technology Teacher Education program provides teacher preparation with an emphasis in Business Technology. Schools recruit graduates of the TTE program to teach academic business courses and Business & Computer Technology (BCT) as well as Computer Discovery. Specific certifications and/or endorsements include:

- Business Education - Grades 7-12 (Certification #105)
- Business & Computer Technology (Certification #310)
- Computer Applications (Certification #111)
- Cooperative Education (Certification #317)

MSU Bulletin is not the final source of information; departmental advisement is critically important for course sequence and selection. Students should always get advisement and approval from MSU advisor for course scheduling.

#### University Core

English Composition (6 hours)	CO 1093	Honors Oral Communication	
EN 1103	English Comp I <b>or</b>	Mathematics (6 - 9 hours)	
EN 1163	Accelerated Comp I <b>or</b>	MA 1313	College Algebra
EN 1183	Honors Comp I	3 hours	MA higher than College Algebra
		Science (6 - 9 hours)	
EN 1113	English Comp II <b>or</b>	Lab Science (see University CORE)	
EN 1173	Accelerated Comp II <b>or</b>	Lab Science (see University CORE)	
EN 1193	Honors Comp II	Natural Science w/lab or higher level math	
Public Speaking (3 hours)	Humanities (6 hours)		
CO 1003	Fundamentals of Public Speaking <b>or</b>	HI 1063/1073	US or World History or other HI sequence
		3 hours	Literature (see University CORE)



Fine Arts (3 hours)  
3 hours See University CORE

Social/Behavioral Science (6 hours)  
PSY 1013 General Psychology  
PS 1113 American Government

**College Core**

Computer Literacy  
TKT 1273 Microcomputers **or** other approved course

Junior/Senior Writing  
EDF 3413 Writing for Thinking

Health/Physical Education  
PE 1223 Personal Health

**Major Core**

ACC 2013 Financial Accounting  
ACC 2023 Managerial Accounting  
BL 2413 Legal Environment of Business  
EC 2113 Principles of Macroeconomics  
EC 2123 Principles of Microeconomics  
MGT 3213 Organizational Communications  
MKT 3013 Principles of Marketing  
TKB 1122 Document Formatting  
TKB 1313 Records Management  
TKB 2413 Administrative Office Procedures

TKB 2543 Word Processing  
TKB 3133 Office Management  
TKB 4283 Office Systems Applications  
TKB 4543 Adv Application in W/I Processing  
TKT 4743 Electronic Desktop Publishing

**Professional Education Courses**

TKT 3001 Practicum in Voc Ed  
TKT 3153 Teaching Bus Tech\*  
TKT 3173 Teach Bus Ed Skills Subj\*  
TKT 4213 Teach Basic Bus Subj  
TKT 4143 His/Phil of Voc Ed  
EDF 3333 Social Foundations of Education  
EPY 3143 Hum Dev & Learning Strategies\*  
EDF 3243 Planning/Managing Learning\*  
EPY 3253 Evaluating Learning\*  
EDX 3213 Psy & Ed of Except Children & Youth  
TKT 4873 Seminar in Voc Ed\*  
TKT 4886 Student Teaching\*  
TKT 4896 Student Teaching\*

**Total hours needed for major: 135**

\* Requires admission to Teacher Education.

**EDUCATIONAL LEADERSHIP (EDA)**

Major Advisor: Anthony A. Olinzock  
Office: 101 Industrial Education Building

The programs in educational administration are designed through course sequence, planned observation and participation, individual study and research, and other learning experiences to prepare administrators, supervisors, teachers, and other educational leaders for positions of leadership in elementary, middle, and secondary schools, and in central offices. The department also provides training for community college administrators.

Administration and supervision programs are offered leading to the Master of Education degree, the Educational Specialist, the Doctor of Education, and the Doctor of Philosophy degrees.

**TRADE and TECHNICAL STUDIES (TTS) non-teaching**

Major Advisor: W.C. Johnson  
Office: 106 Industrial Education Building  
(132 semester-hour, non-teaching curriculum)

This curriculum is designed to prepare the graduate for supervisory, mid-management, and other leadership positions in industry. It provides an opportunity for the community college student with a technical specialty to transfer a block of related technical course credits to a four year baccalaureate curriculum. An objective of this curriculum is to add breadth to the technical specialty by including mathematics, science, management skills, and upper level industrial courses. Job opportunities are good.

The "Technical Specialty" courses must be coordinated in some technical area.

MSU Bulletin is not the final source of information; department advisement is critically important for course sequence and selection. Students should always get advisement and approval MSU advisor for course scheduling

**University Core**

English Composition (6 hours)  
EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)  
CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (6-9 hours)\*  
MA 1313 College Algebra  
MA 1323 Trigonometry or Restricted Elective

Science (6-9 hours)\*  
CH 1043 General Chemistry I  
PHI 1113 General Physics w/lab  
PHI 1123 General Physics w/lab

Humanities (6 hours)  
HI 1063/1073 US or World History (or other HI sequence)  
PHI 3013 Bus Ethics

Fine Arts (3 hours)  
TKI 2413 History & Appr Artcraft

Social/Behavioral Science (6 hours)  
PSY 1013 General Psychology  
EC 2113 Principles of Macroeconomics

**College Core**

Computer Literacy  
TKT 1273 Microcomputers **or** other approved course

Junior/Senior Writing  
EN 3103 Writing for Engineers **or**  
MGT 3213 Organizational Comm I

**Major Core**

ACC 1203 Basic Ind Accounting  
MGT 3114 Principles of Management  
MGT 3413 Production Management  
BQA 2113 Business Stat Methods I  
EG 1143 Graphics Communications  
EG 1443 Technology Graphics  
MA 1613 Cal for Bus & Life Sciences  
TKI 1223 Ind Wood Proc  
TKI 1813 Bas Ind Elec & Electr  
TKI 2323 Forg, Weld, & Found  
TKI 3043 Industrial Safety  
TKI 3083 Job Analysis & Ind Proc  
TKI 3103 Adv Ind Elec & Electr  
TKI 3183 Mach Metal Processing  
TKI 3223 Ind Materials Tech  
TKI 3363 Motion & Time  
TKI 4103 Ind Control Systems  
TKI 4113 Ind Fluid Power  
TKI 4203 Automated Systems  
TKI 4263 Manufacturing Tech  
23 hours Tech Speciality Courses (See advisor)

**Total hours needed for major: 130**

\* Substitutions permitted with approval of the department head.

**OFFICE SYSTEMS and TECHNOLOGIES (OST) non-teaching**

(128 semester hour non-teaching curriculum)

Major Advisor: Dr. Byron Havard

Office: 107 Industrial Education Building

Bch63@colled.msstate.edu

Phone: 662-325-2280)

The Office Systems and Technologies program is designed to prepare students for office management and administrative support positions as well as positions involving analysis, design, and implementation of office systems. These information managers, sometimes known as the chief information officers (CIO's) are in great demand. The Department of Labor projects that over 500,000 administrative support positions will be created by 2005.

Office and information managers must be prepared to work and advance within contemporary and futuristic environments. Firms now demand that they be capable of success in global communications, human interaction, conceptual understandings and technical skills.

The OST curriculum includes mastery of computer systems and various computer applications (word processing, spreadsheet, database, graphics, desktop publishing, and integrated systems), telecommunications, administrative practices and communication, and information management. Students also study the broad areas of business administration, including accounting, finance, economics, business law, management, marketing, and insurance.

**Minor in General Business Administration.** By completing the business requirements for the OST degree, students also are eligible to receive a minor in General Business Administration from the College of Business. OST majors interested in a minor in general business administration should contact an academic coordinator in room 221 McCool Hall.

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**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics (6 hours)

MA 1313 College Algebra  
 3 hours MA higher than College Algebra  
 3 hours Higher level math or Natural Science

Science (6 hours)

Natural Science w/lab  
 Natural Science w/lab

Math/Science Elective (3 hours)

See University CORE

Humanities (6 hours)

HI 1063/1073 US or World History (or other HI sequence)  
 3 hours Literature - see University CORE

Fine Arts (3 hours)

See University CORE

Social/Behavioral Science (6 hours)

PSY 1013 General Psychology  
 PS 1113 American Government

**College Core**

Computer Literacy

TKT 1273 Microcomputers in Ed **or** other approved course

Junior/Senior Writing

EDF 3413 Writing for Thinking

**Major Core**

Business Courses

ACC 2013 Financial Accounting  
 ACC2023 Managerial Accounting  
 BL 2413 Legal Environment of Business  
 INS 3103 Principles of Insurance  
 EC 2113 Principles of Macroeconomics  
 EC 2123 Principles of Microeconomics  
 MGT 3513 Human Resource Mgt  
 MKT 3013 Principles of Marketing  
 PHI 3013 Business Ethics  
 MGT 3213 Organizational Comm  
 FIN 3113 Financial Systems

Technology Courses

TKB 1122 Document Formatting  
 TKB 1313 Records Management  
 TKB 2112 Document Production  
 TKB 2413 Administrative Office Procedures  
 TKB 2543 Word Processing  
 TKB 3133 Office Management  
 TKB 4283 Office Systems Applications  
 TKB 4543 Adv Appl Word/Info Proc  
 TKT 4713 Hypermedia for Instruction  
 TKT 4733 Technology Lab Mgt  
 TKT 4743 Electron Desktop Pub  
 TKT 4753 Electronic Presentation  
 TKT xxxx Telecommunications

Other Required Courses

GR 1123 Int World Geography  
 HS 1711 Professional Protocol

Other Electives

3 hours Elective - see advisor  
 6 hours Technology Electives - see advisor

**Total hours needed for major: 128**

\* Substitutions permitted with approval of the department head.

**INDUSTRIAL TECHNOLOGY (INDT) non-teaching****Concentration: Industrial Distribution**

Major Advisors: Dr. John Wyatt

Office: 100 Industrial Education Building

(110 semester-hour, non-teaching curriculum)

This curriculum is designed for students who want to prepare for employment leading to supervisor, administrative and other types of management positions in the production areas of industry or into Industrial Distribution, the jobber or wholesale level of sale, distribution and/or installation of industrial products and equipment. Successful completion of the four-year curriculum will provide an excellent background in science, mathematics, design, and human relations, together with a degree of skill in the use of machines and tools, and a knowledge of industrial processes and materials.

Graduates should rapidly become proficient in the technical aspects of supervision and administration, and in dealing with personnel; and, depending on the selected course emphasis, the graduate should rapidly become proficient in the various aspects of manufacture, sale, and distribution of industrial products. Job opportunities are bright.

NOTE: This curriculum lends itself well to a double major in management or marketing.

MSU Bulletin is not the final source of information; departmental advisement is critically important for course sequence and selection. Students should always get advisement and approval from MSU advisor for course scheduling.

The INDT baccalaureate degree requirements include a cumulative and MSU grade point average of 2.50 on all courses considered in the "major." "Major" courses are defined as those courses listed on the INDT curriculum sheet with the following course symbols: TKI, MGT, EG, or MKT.

Upper Division courses (3000 level and up) must be taken at a senior college or university. See your advisor for prerequisites and proper course sequence.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**

EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Mathematics (6 hours)*	
MA 1313	College Algebra
MA 1323	Trigonometry
Science (9 hours)*	
CH 1043	General Chemistry I
CH 1053	General Chemistry II
PH 1113	General Physics w/lab
Humanities (6 hours)	
HI 1063/1073	US or World History (or other HI sequence)
PHI 3013	Bus Ethics
Fine Arts (3 hours)	
TKI 2413	History & Appr Artcraft
Social/Behavioral Science (6 hours)	
PSY 1013	General Psychology
EC 2113	Principles of Macroeconomics
<b>College Core</b>	
Computer Literacy (3 hours)	
TKT 1273	Microcomputers or other approved course
Junior/Senior Writing (3 hours)	
EDF 3413	Writing for Thinking
<b>Major Core</b>	
ACC 2013	Principles of Financial Accounting

BL 2413	Legal Env of Business
MKT 3013	Principles of Marketing
MKT 3213	Retailing
MKT 4113	Personal Selling
MKT 4123	Advertising
MGT 3213	Org Communication
MGT 3413	Production Management
3 hours	MGT or MKT Elective
EC 2123	Prin of Microeconomics
Industrial Courses	
TKI 1223	Wood, Polymer Processing
TKI 1813	Basic Ind Elec & Electronics
TKI 2323	Forg, Weld, & Found
TKI 3043	Industrial Safety
TKI 3063	Ind Human Relations
TKI 3083	Job Analysis & Ind Proc
TKI 3103	Adv Ind Elec & Electronics
TKI 3183	Mach Metal Processing
TKI 3223	Ind Materials Tech
TKI 3363	Motion & Time
TKI 4103	Ind Control Systems
TKI 4113	Ind Fluid Power
TKI 4213	Survey Energy Sources/Power Tech
TKI 4223	Quality Assurance
TKI 4263	Manufacturing Tech & Proc
EG 1143	Graphics Communications
EG 1443	Technology Graphics
Electives (6 hours)	
	See Advisor

**Total hours needed for major: 129**

\* Substitutions permitted with approval of department head.

### INDUSTRIAL TECHNOLOGY (INDT) non-teaching Concentration: Management and Manufacturing

Major Advisors: Dr. John Wyatt

MSU Bulletin is not the final source of information; departmental advisement is critically important for course sequence and selection. Students should always get advisement and approval from MSU advisor for course scheduling.

#### University Core

English Composition (6 hours)	
EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Mathematics (6-9 hours)*	
MA 1313	College Algebra
MA 1323	Trigonometry
MA 1613	Cal Bus & Life Sci
Science (6-9 hours)*	
CH 1043	General Chemistry I
CH 1053	General Chemistry II
Humanities (6 hours)	
3 hours	HI - US or World History
PHI 3013	Bus Ethics <b>or</b> other Humanities
Fine Arts (3 hours)	
	See University CORE
Social/Behavioral Science (6 hours)	
PSY 1013	General Psychology
EC 2113	Principles of Macroeconomics
<b>College Core</b>	
Computer Literacy (3 hours)	
TKT 1273	Microcomputers or other approved course
Junior/Senior Writing (3 hours)	

EN 3103	Writing for Engineers <b>or</b>
MGT 3213	Organizational Comm
<b>Major Core</b>	
ACC 2013	Principles of Financial Accounting
BL 2413	Legal Env of Business
BQA 2113	Intro Bus Statistics
3 hours	Management Elective
MGT 3413	Production Management
MGT 3513	Intro Hum Res Mgt
IE 3913	Engineering Economy I <b>or</b>
TR 4393	Transportation Seminar
PH 1113	General Physics w/lab
Industrial Courses	
TKI 1223	Ind Wood Proc
TKI 1813	Bas Ind Elec & Electr
TKI 2323	Forg, Weld, & Found
TKI 3043	Industrial Safety
TKI 3083	Job Analysis & Ind Proc
TKI 3103	Adv Ind Elec & Electr
TKI 3183	Mach Metal Processing
TKI 3223	Ind Materials Tech
TKI 3363	Motion & Time
TKI 4103	Ind Control Systems
TKI 4113	Ind Fluid Power
TKI 4203	Automated Systems
TKI 4213	Sur Engy Sources/ Pow Tech
TKI 4223	Quality Assurance
TKI 4303	Industrial Robotics
EG 1143	Graphics Communications
EG 1443	Technology Graphics
Electives (6 hours) - See advisor	

**Total hours needed for major: 129**

\* Substitutions permitted with permission of department head

The INDT baccalaureate degree requirements include a cumulative and MSU grade point average of 2.50 on all courses considered in the "major." "Major" courses are defined as those courses listed on the INDT curriculum sheet with the following course symbols: TKI, MGT, EG, or MKT.

Upper Division courses (3000 level and up) must be taken at a senior college or university. See your advisor for prerequisites and proper course sequence.

## THE JAMES WORTH BAGLEY COLLEGE of ENGINEERING

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College of Engineering home page: <http://www.enr.msstate.edu>

### GENERAL INFORMATION

The James W. Bagley College of Engineering is a professional college whose purposes are to provide both undergraduate and graduate education, to conduct basic and applied research and to engage in extension and public service activities. The College consists of ten operating departments and centers, as follows:

- Department of Aerospace Engineering
- Department of Agricultural and Biological Engineering\*
- Dave C. Swalm School of Chemical Engineering
- Department of Civil Engineering
- Department of Computer Science
- Department of Electrical and Computer Engineering
- Department of Industrial Engineering
- Department of Mechanical Engineering
- Diagnostic Instrumentation and Analysis Laboratory
- Engineering Research Center for Computational Field Simulation

The Bagley College has the Mission to provide programs of excellence in teaching, research, and outreach and the Vision to be nationally known for innovative programs. To accomplish the mission the College has established the following specific objectives:

1. Excellence in engineering education with enhancements for the 21<sup>st</sup> century
2. Highly robust and relevant fundamental and applied research
3. Robust, multidimensional outreach to industry, government, the K-12 and community college systems, and the citizens of Mississippi
4. Effective personal and professional development for faculty and staff
5. Appropriate facilities for a modern, comprehensive engineering program
6. Active partnerships with business, industry and government
7. Enhanced national image and reputation of the college and university

The Bagley College is dedicated to providing an extraordinarily rich environment where engineering students can gain the skills that will allow them to become leaders and builders in commerce, industry, and government. Through innovations in and enhancements to the curriculum, Bagley engineering graduates will: 1) Develop effective communications skills; 2) Fully utilize the computer as a productivity tool; 3) Develop effective leadership and teamwork abilities; 4) Understand the entrepreneurial process; and 5) Comprehend the global business environment. These enhancements ensure that Bagley engineering graduates are highly sought after by employers and will continue to be successful.

A study abroad program provides students with an opportunity to take courses in another country and experience different cultures. This experience broadens the vision of those who participate and increases their awareness of the global environment in which engineers work. Engineering students also have the opportunity to apply for Congressional internships. Currently internships are in place for the US Congress in Washington, D.C.

The Bagley College is dedicated to producing outstanding graduates who are capable of achieving excellence. With a strong focus on engi-

neering fundamentals and an attitude among the faculty of helping each student achieve his or her best, Bagley engineering graduates are ready to obtain a position with the leading companies or further their education at the finest graduate schools in the nation.

Basic-level professional programs leading to the Bachelor of Science degree are offered in Aerospace Engineering, Biological Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Industrial Engineering, Mechanical Engineering, and Software Engineering. All programs except Computer Science and Software Engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). Computer Science is accredited by the Computing Accreditation Commission of ABET.

All basic-level engineering programs are designed to give the student an understanding of the fundamental principles underlying engineering science and engineering practice. Each curriculum consists of four sequences: Basic Sciences and Mathematics; a general education component; Engineering Sciences; and Engineering Analysis, Design and Systems.

Included in the Basic Sciences and Mathematics sequence are Biology, Chemistry, Physics, and Mathematics, through Calculus and other advanced mathematics topics.

The University Core Curriculum, published in this Bulletin, determines the general education component.

The sequence in Engineering Sciences consists of studies in engineering mechanics, thermodynamics, transfer and rate mechanisms, electrical theory, the nature and properties of materials, and computer science.

The Engineering Analysis, Design and Systems sequence is directed toward the creative and practical phases of economic design, involving analysis, synthesis, and engineering research and development. This sequence is the most distinctive feature of the engineering curricula, since it is the element of creative and economic design which distinguishes the engineer from the pure scientist.

Engineers and Computer Scientists must develop communication skills through courses in English composition, public speaking, and upper level writing.

The curriculum in Computer Science consists of general studies, mathematics, science, computer science, and electives.

### ENTRANCE REQUIREMENTS

Prospective students are encouraged to take as many courses as possible in mathematics, science, English, social studies, and foreign languages while in high school. One unit of computer aided graphics is recommended for engineering students and at least one-half unit of keyboarding and one-half unit of computer programming are recommended.

The level of high school preparation needed to be successful in an engineering or computer science degree program as measured by ACT or SAT scores and high school academic core grade point average has been identified. The following guidelines are established to help high school

\* Administered jointly with the College of Agriculture and Life Sciences

students understand the level of preparation required for engineering and computer science. In addition, these guidelines are established to help MSU students at risk who want to pursue engineering or computer science.

### Math Prerequisites

In order to be successful in engineering, a student must develop good math skills through courses in Calculus, differential equations, and other math topics. In engineering and computer science, the first math course that applies to a degree is Calculus. Taking Calculus requires that a student have an adequate preparation in Algebra, Geometry, and Trigonometry.

To provide students with the best possible opportunity for success in Calculus, the Department of Mathematics has established the following guidelines for placing students in math courses:

MA 1713 Calculus I - have an ACT math sub-score of 26 or higher, or have grades of C or better in MA 1313 College Algebra and MA 1323 Trigonometry.

MA 1323 Trigonometry - have an ACT math sub-score of 24 or higher, or have a grade of C or better in MA 1313 College Algebra

MA 1313 College Algebra - have an ACT math sub-score of 20 or higher.

Students who are not prepared for Calculus I will be required to first complete College Algebra and/or Trigonometry before taking Calculus. This may delay a student from taking some engineering courses until they have developed the proper math background but this should not discourage a student from pursuing an engineering degree. Improving math skills early in their academic career will result in a student having greater academic success.

Students who do not meet the guidelines for enrolling in Calculus I should consider completing College Algebra and Trigonometry during the summer prior to attending Mississippi State. These courses may be taken either at Mississippi State, at a Mississippi Community or Junior College, or at any other accredited two-year or four-year institution. Only grades of C or better will be accepted as satisfying these pre-requisites. Courses taken during high school will not count for this credit unless they were taken as part of a dual enrollment program and appear on a separate transcript from a two-year or four-year institution.

### New Freshmen Admission

For regular admission to one of the College of Engineering's degree granting programs as a freshman, students must be admitted to MSU, complete the following high school academic core: 4 units of English, 4 units of mathematics (algebra, geometry, trigonometry), 3 units of science (chemistry and either biology or physics), 3 units of social studies and/or foreign languages and 2 units of electives, and meet any one of the following criteria:

Have a composite score greater than or equal to 23 on the ACT or 1060 on the SAT

Have a composite score of 20, 21, or 22 on the ACT or between 940 and 1050 on the SAT with a high school GPA of 3.0 or greater on academic core courses listed above

Have any ACT or SAT score with a high school GPA of 3.5 or greater on academic core courses listed above.

These criteria are essential for the success of a student beginning an engineering or computer science curriculum at the level shown in the following pages of this Bulletin. Applicants with justifiable circumstances may petition the Dean of Engineering for special admission.

New freshmen applicants who do not meet these requirements, are otherwise admitted to MSU, and want to pursue an engineering degree should join the undeclared major with a pre-engineering concentration. These students will be advised for the first 30 hours by the University Advising Center. Students in the pre-engineering and computer science can request to be assigned a mentor from the engineering or computer science faculty.

Students with course work deficiencies will be required to schedule preparatory course work. This course work will be in addition to that shown in the engineering and computer science curricula and will, in general extend the time to graduation.

### Internal Transfers

Students in the pre-engineering concentration and other students at Mississippi State University may transfer into an engineering degree-granting program if they satisfy any one of the following criteria:

Meet engineering new freshmen requirements listed above

Have completed at least 30 hours with a cumulative GPA greater than or equal to 2.0 and passed Calculus I (MA 1713), English Composition I (EN 1103), and Fundamentals of Chemistry (CH 1213) with grades of C or better.

Internal transfer students should discuss the transfer with the appropriate department head or program coordinator before completing the Change of Major form. Some departments have additional admission requirements for internal transfers.

Students admitted to one engineering or computer science degree program may transfer to another engineering or computer science program at any time so long as they meet departmental transfer requirements.

### External Transfers

Students may transfer from other colleges or universities into MSU engineering degree programs if they meet all requirements to transfer to MSU and satisfy any one of the following criteria:

Meet engineering new freshmen admission standards listed above

Have completed at least 30 hours with a cumulative GPA greater than or equal to 2.0 and passed courses equivalent to Calculus I (MA 1713), English Composition I (EN 1103), and Fundamentals of Chemistry I (CH 1213) with grades of C or better.

Applicants with justifiable circumstances may petition the Dean of Engineering for special admission.

Coursework taken elsewhere will not be applied toward a degree in the college of Engineering until it is determined that it is equivalent to required coursework or is an acceptable substitute. Also, only coursework taken elsewhere on which a grade of C or better has been earned will be considered for application toward a degree. No more than one-half of the hours of an engineering or computer science curriculum may be transferred from a two-year community or junior college.

For admission to undergraduate programs, international students must earn a minimum paper-based TOEFL score of 550 or a computer-based minimum score of 213.

### PERSONAL COMPUTER REQUIREMENT

All engineering students are required to own or lease a personal laptop computer. Minimum specifications for a computer will be developed and posted on the College of Engineering home page on the World Wide Web by July of each year. A computer meeting these minimum specifications should suffice for the entirety of a student's program of study as long as normal progress is made each semester. Information on the computer specifications, special pricing which may be available, and departmental requirements can be found by visiting the web site at <http://www.engr.msstate.edu>, by calling the Undergraduate Coordinator at (662) 325-2267, or by writing to Mr. Robert Green at the address given above.

Computers are used by students to solve engineering problems, write papers, and develop presentations for classes. Computer technology improves communication between students and faculty and develops the computational skills demanded of engineering graduates by employers.

Students applying for or receiving financial aid should notify the office of Student Financial Aid and Scholarships that they are entering the College of Engineering and are required to have a personal computer. The cost of the personal computer can then be added to the total cost of an education and financial aid will be awarded accordingly. The full cost of the computer will not necessarily be covered by financial aid depending on the total amount of aid received and other regulations.

### GRADUATION REQUIREMENTS

Graduation requirements are the courses and hours shown in the individual programs. Some majors require a grade of C or better in certain courses. This information is available from the department in which the student is enrolled. All students are expected to study these requirements together with the course prerequisites, and to be sure that they are taking the proper courses in the curriculum in which they expect to graduate. Students should discuss their programs with their academic advisors each semester, particularly before pre-registration. For graduation with a baccalaureate degree from the College of Engineering, in addition to meeting the quality-point requirements of the University, candidates must have no less than a 2.00 cumulative QPA on all courses taken at Mississippi State University and applied to meeting degree requirements. It is the student's responsibility to be sure that requirements are fulfilled in a particular program before applying for a degree.

Credit up to a maximum of six semester hours will be applied toward a baccalaureate degree in the College of Engineering for successful completion of the Army ROTC Advanced Course of study or the Air Force ROTC Professional Officer Course of study. Such credit may not be available to students who, before they enter an ROTC program, have completed those courses for which ROTC credit is usually substituted.

Correspondence credit up to a maximum of six semester hours will be accepted, with the prior approval of the department head and the dean. In no case will engineering courses taken by correspondence be approved.

No courses taken under the pass/fail option may be used to satisfy degree requirements.

### COMPUTATIONAL ENGINEERING

Computational engineering is the application of computational methods and high-performance computing to solve large-scale, complex engineering problems. It addresses problems that cannot be solved easily by

analytical means and that are too difficult or costly to model physically through experiments.

Such problems must have precise mathematical statements, require knowledge of the discipline, and be of significant scope. Examples include the following: analyzing the air flow around an aircraft or missile in order to optimize design for performance and efficiency; analyzing the behaviors of electromagnetic fields; studying the movement of pollution through ground water aquifers; or predicting global weather patterns.

The Bagley College of Engineering offers both Master's and Ph.D. Degrees in computational engineering. Students interested in these programs should refer to the Mississippi State University Graduate Bulletin. To prepare for the computational engineering graduate degree, a student should pursue a bachelor's degree in an engineering discipline, mathematics, or a physical science such as physics or chemistry.

### ENVIRONMENTAL ENGINEERING

The field of Environmental Engineering is an interdisciplinary one concerned with applications of the principles of engineering science and design to improve the quality of the environment. As a broad field, efforts in Environmental Engineering can be found in several departments within the College of Engineering, including the Departments of Agricultural and Biological Engineering, Chemical Engineering, and Civil Engineering. Areas of concern in Environmental Engineering include air quality and pollution control, soil and water quality and wastewater collection, treatment, and disposal, food quality and management of agricultural land and other natural resources, and the minimization, management, and disposal of industrial, municipal, and agricultural waste.

While the College of Engineering does not offer degrees in Environmental Engineering, the undergraduate student pursuing a Bachelor of Science degree may develop an area of emphasis in Environmental Engineering by fulfilling elective course requirements with a number of courses related to Environmental Engineering including:

ABE 3303 Biosystems Environment I  
 ABE 3413 Bioinstrumentation I  
 ABE 4313 Biological Treatment of Non-Point Source Pollution  
 ABE 4423/6423 Bioinstrumentation II  
 CHE 4613 Air Pollution Control Design  
 CHE 4623 Hazardous Waste Incineration  
 CE 3824 Environmental Engineering  
 CE 4873 Water and Wastewater Engineering  
 CE 4843 Advanced Sanitary Analysis  
 CE 4003 Directed Individual Study  
 CE 4893 Hazardous Waste Management  
 CE 4853 Solid Waste Disposal Systems

Courses in environmental chemistry, organic chemistry, biochemistry, microbiology, and geological sciences are offered by the College of Arts and Sciences.

For additional information, the student should consult advisors in the College of Engineering, especially those in Agricultural and Biological Engineering, Chemical Engineering, and Civil Engineering.

### THE JACK HATCHER ENGINEERING ENTREPRENEURSHIP PROGRAM

The role of the engineering entrepreneur in the expansion of the economy is self-evident. Engineers with entrepreneurial spirit and skills are the locomotives of the technology-based startup company and, perhaps more importantly, of the evolution of established industry. Developing entrepreneurial thinking in our graduates is one of the primary learning goals of the College of Engineering at Mississippi State University. Through an endowment by alumnus Jack Hatcher and the support of the Robert M. Hearin Foundation of Jackson, Mississippi, we have established a multilevel engineering entrepreneurship program to serve students with different degrees of interest. The base mission of the program is to expose our students to the broader elements of running a business and the general managerial skills required to prepare them for opportunities in management. For a more limited number, our mission is to equip technologically creative students to recognize opportunities and help instill the confidence to start entrepreneurial businesses.

The basic and broadest element of the entrepreneurship program is a weekly seminar series in which successful entrepreneurs present case histories. Also business leaders discuss specific items, such as patents, hiring employees, and venture capital. The next level is the Idea Fair and team projects. At the Idea Fair, select companies are invited to present ideas for products or services that may have commercial value. For those that generate significant student interest, interdisciplinary student teams are formed to develop the product or service. The participating companies provide materials, guidance, and encouragement. The projects also provide credit for design or technical elective classes. Students may also form teams around their own entrepreneurial idea.

#### Engineering Entrepreneurship Certificate

For students with higher levels of interest, a formal course of study leading to an Entrepreneurship Certificate is available. The certificate program is a joint program with the College of Business and Industry that

requires a minimum of 15 semester hours. Students gain knowledge in finance, marketing, and accounting followed by a management course in entrepreneurship where the capstone project is a business plan.

All undergraduate engineering and computer science students in good standing are eligible to join the program. Each student must have a faculty mentor from both engineering and business and industry. To join the program, a student must submit an application to the Associate Dean of Engineering that has been signed by both mentors.

The Entrepreneurship Certificate Program is comprised of three major parts:

1. Completing 15 hours of business and engineering classes:  
 ACC 2103 Princ Financial Accounting  
 EC 2123 Microeconomics  
 IE 3913 Engineering Economy  
 MKT 3323 Principles of Marketing  
 MGT 3323 Entrepreneurship
2. The Seminars Series - GE 3011
3. The "company" or project experience.

By utilizing electives, students in most engineering disciplines can complete the course requirements with a maximum of six to nine hours of additional work above the degree program. Also, much of the coursework will apply toward the prerequisites for an MBA degree at a later time should the student decide to pursue that path.

A GPA of 2.25 is required on all coursework, and no grade less than a C can be applied toward the certificate. A maximum of two courses can be transfer courses, and correspondence courses will not be accepted. In addition, a passing grade must be obtained for three semesters of GE 3011-Engineering Entrepreneurship Seminar.

The "company" or project experience is the real-world engineering experience of developing a marketable product or service. In most cases, the certificate candidate can get academic credit through the senior design course or a technical elective. For example, Electrical Engineering and Computer Engineering majors can receive credit for the senior design project requirement (ECE 4512/4522 and ECE 4521). The "company" experience may be a project proposed by one of the participating companies in the Idea Fair or a concept developed by students or faculty members. To complete the requirements for the project experience, the candidate submits a report to the Associate Dean, which has been approved by both mentors. This report usually takes the form of a Business Plan and is developed as part of the entrepreneurship course MGT 3323.

Upon completion of the Entrepreneurship Certificate Program requirements, the Associate Dean will review the student's records. If all requirements are met satisfactorily, the Associate Dean will submit the candidate to the Deans of Business and Industry and of Engineering for issuance of the certificate. The Associate Dean will notify the Registrar to have a statement placed on the candidate's transcript. The certificate will be issued concurrently with the B.S. Degree in Engineering or Computer Science.

For more information contact:

Mr. Gerald Nelson  
 Director, Jack Hatcher Entrepreneurship Program  
 Box 9544  
 Mississippi State University, MS 39762-9544  
 Phone: 662-325-8423  
 email: gnelson@enr.msstate.edu

### ENGINEERING STUDY ABROAD PROGRAMS (See International Study Programs)

### ADVANCED-LEVEL PROFESSIONAL PROGRAMS

#### Materials Certificate Program

The Materials Certificate Program in engineering is available to qualified students who complete an organized plan of study in the interdisciplinary materials-related areas at MSU. Within the College of Engineering there are several courses that deal with a wide range of materials-related topics such as advanced composites, biomaterials, materials processing, polymers, and electrical materials. By placing the Materials-related courses offered through the Aerospace, Biological, Chemical, Civil, Electrical/Computer, and Mechanical Engineering departments in an organized plan of study, a student may pursue and achieve an interdisciplinary education and training program in materials.

A wide variety of research is under way in these areas, including composite material behavior and manufacture, fatigue and fracture mechanics, corrosion studies of new implant materials, fine grained ceramic materials, silicon carbide-based semi-conductors, thin films for catalysis, mechanical properties of high molecular-weight polyethylene, new construction materials, high-speed machining, and the recycling of industrial waste materials.

The Materials Certificate Program is available to both traditional and non-traditional students enabling industry to send individuals back to school to gain further training, while also allowing current students the opportunity to pursue an interdisciplinary specialty. The program is administered through the Dean of Engineering's office.

Upon successful completion of the program of study and approval by the advisory committee, a certificate will be issued to the student signed by the Dean of Engineering and the head of the department in which the student is majoring.

#### Admission to the Certificate Program:

Students pursuing a materials certificate are typically:

- (1) Persons possessing at least a bachelor's degree in engineering or science;
- (2) Persons working towards either a bachelor's or master's degree in engineering or science; or
- (3) Persons working in technical positions in industry desiring a certificate in materials but requiring additional prerequisites.

#### Minimum admission requirements

To be admitted to the program a student must have satisfactorily completed freshman Chemistry (CH 1213, CH 1223), its associated laboratories (CH 1211, CH 1221), freshman Calculus (MA 1713, MA 1723), and Physics (PH 2213, PH 2223). In addition, the student is responsible for meeting all prerequisites for each course taken towards the materials certificate.

Candidates in categories (1) and (2) automatically will meet the program requirements, either upon entrance to the program or in parallel. For those lacking the prerequisites, additional course work must be completed successfully, either as a matriculated or non-matriculated student.

In all cases, it is the responsibility of the student to provide an official transcript of all courses taken prior to admission into the program. An application form including a proposed course of study must be completed by the student and an official transcript must be provided for admission to the program. A member of Materials Engineering Working Group will review the application and agree to the program of study.

#### Certificate Requirements:

To receive a materials certificate, students must complete at least one course from list A, at least two courses from list B, and at least two courses from list C with a grade of "C" or better in each class taken. At least two courses from lists B and C must be completed in addition to the student's technical elective requirement, and the course(s) from list A may be part of the student's regular curriculum.

#### List A: Introductory courses (may be part of student's home curriculum)

ABE 3813 Biophysical Properties of Materials  
CHE 3413 Engineering Materials  
ME 3403 Materials & Manufacturing in Design

#### List B: Fundamentals of Material Science

ABE 8314 Corrosion of Biomedical Implants  
ASE 3213 Aircraft Structures I  
CE 3314 Construction Materials  
CE 4623 Steel Structures  
CE 4633 Concrete Structures  
CE 4713 Forensic Engineering/Failure Analysis  
CHE 4323/6323 High Polymer Theory and Practice  
CHE 4423/6423 Fundamentals of Industrial Corrosion  
ECE 4243/6243 Introduction to Physical Electronics  
EM 4133/6133 Mechanics of Composite Materials  
EM 4213 Advanced Mechanics of Materials  
FP 4323/6323 Physical Properties of Wood  
ME 8253 Fatigue and Fracture in Engineering Design

#### List C: Applied Materials Science

ABE 4523/6523 Biomedical Materials  
ABE/CHE 4624/6624 Experimental Methods of Materials Research  
ABE 4613/6613 Biomechanics  
ABE 8324 Failure Analysis of Metallic Medical Implants  
CE 3413 Soil Mechanics  
CE 4683/6683 Advanced Steel Design  
CH 8343 Electro-analytical Chemistry  
EPP 8223 Scanning Electron Microscopy  
FP 4423/6423 Mechanical Properties of Wood  
ME 4403 Machine Design  
ME 4443/6443 Mechanical Systems Design  
ME 4453/6453 Lubrication  
ME 4413/6413 Casting and Joining  
ME 4423/6423 Machining and Forming  
ME 8243 Finite Element Analysis

For further details about the program, contact Office of the Dean of Engineering at 662-325-2270.

### SOFTWARE ENGINEERING CERTIFICATE PROGRAM

Software Engineering is the application of engineering practices to the design and maintenance of software. Large complex software systems and products often involve millions of lines of code and operate in safety-critical environments. Software Engineering skills are critical to the nations and the state of Mississippi to maintain and expand the industrial base. The certificate program is designed to provide a focused set of course work in Software Engineering. The certificate is available to both

traditional and non-traditional students. Through it, industry and government organizations may offer employees additional technical education related to their work and job performance.

The Certificate in Software Engineering is administered by the Department of Computer Science and the Dean of Engineering.

#### Admission to the Certificate Program:

It is anticipated that students from the following backgrounds will likely pursue a certificate in software engineering:

Persons working in industry in a software development or maintenance function and who wish to improve their technical background.

Government employees such as those located at the John C. Stennis Space Center or the U.S. Army Engineering Research and Development Center in Vicksburg who do not wish to complete a degree, but desire to take advantage of educational support available from their employer.

Students on campus in related disciplines that would like to obtain this certificate in addition to another degree option.

All candidates, as a minimum, must demonstrate through experience or course work, the following:

- Have obtained a BS degree
- Mastery of computer science fundamentals
- Proficiency in at least one programming language
- At least two years experience working in significant software development project
- Knowledge of discrete mathematics, algorithms, and data structures at the level of an undergraduate course
- Practical knowledge or programming methods and computer organization.

Although it is expected that most students applying for this certificate program will hold undergraduate degrees from programs like computer science, engineering, mathematics, or physics - those holding a degree in another field will be considered for admission if they can clearly demonstrate the ability to perform graduate-level work in software engineering. Programming experience is considered essential.

Applications for admission to the Certificate in Software Engineering Program will be administered by the Department of Computer Science. Students applying for admission may or may not be degree candidates - but all must make application to and be admitted by the MSU Graduate School. Application for admission to the certificate program will result in a determination of qualification and, if admitted, an advisor will be assigned. The advisor will meet with the applicant to create a planned program of study and to obtain any necessary pre-requisite waivers that the student may need (primarily for non-traditional certificate candidates).

#### Requirements for Certificate Award

A minimum of 15 semester credit hours must be completed for award of the certificate. All the courses must be at the 4000 level or higher. Some of the certificate courses may count toward a degree, subject to approval of the Graduate School and the student's Graduate Committee. Successful completion of the Certificate in Software Engineering requires completion of all courses in List A and any two from List B below:

#### List A (Certificate in Software Engineering Core Courses):

CS 4213/6213 Software Engineering I  
CS 8233 Software Engineering Project Management or IE 4533 Project Management  
CS 4283/6283 Software Testing and Quality Assurance

#### List B (Certificate in Software Engineering Electives - choose two):

CS 4223/6223 Software Engineering II  
CS 4233/6233 Software Architecture and Design paradigms  
CS 4243/6243 Information and Computer Security  
CS 8243 Software Specification  
CS 8253 Software Design  
CS 8263 Software Verification and Validation

#### Issuance of Certificates

Upon a candidate's successful completion of the program's requirements, the College of Engineering will issue a certificate in Software Engineering. The candidate will submit the initial application for the certificate to the Department of Computer Science. The department will validate that the candidate has met all requirements satisfactorily and will recommend award of the certificate to the Dean.

For further details about the program, contact the Department of Computer Science at 662-325-2756.

### GRADUATE STUDY

Graduate study leading to the Master of Science degree is available in Aerospace Engineering, Biological Engineering, Biomedical Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Computational Engineering, Electrical Engineering, Industrial Engineering and Mechanical Engineering. The Master of Science degree requires 24 semester hours of coursework and a thesis. The Master of Science (non-thesis option) is also offered with thirty-three (33) semester hours of graduate study required. Computer

Science also requires two semester hours of seminar for Computer Science. The Doctor of Philosophy degree is available in all departments, either through a composite inter-disciplinary program or through a specific major. In addition, interdisciplinary Ph.D. Degrees are offered in Computational Engineering and Engineering Physics.

Professional Business Administration can be combined with professional engineering education in a program leading to a Bachelor of Science degree in a field of engineering and the Master of Business Administration degree in a field of Business. Students desiring further information on this program should consult the Director of Graduate Instruction in the College of Business and Industry. Counseling by the College of Business and Industry faculty will permit the most rapid rate of program completion. In most cases, a Bachelor of Science in a field of engineering, plus a Master of Business Administration, can be earned in five academic years plus one summer term.

Graduate teaching assistantships are available in most of the teaching departments in the College of Engineering, and a number of graduate research assistantships are available. Barrier and Honda graduate Fellowships are awarded each year. Because Mississippi State University is a member of the National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. (GEM), students receiving GEM Fellowships may elect to pursue graduate studies in the College of Engineering at Mississippi State University. Engineering students interested in graduate study should consult with their department heads, the Associate Dean for in the College of Engineering, and Office of Graduate Studies.

### OFF-CAMPUS CENTERS and PROGRAMS

#### Vicksburg Graduate Center

The College of Engineering offers the Master of Science degree in Civil Engineering, Engineering Mechanics, Chemical Engineering, Electrical Engineering, Computational Engineering, Computer Engineering, Computer Science and Mechanical Engineering through the Vicksburg Center for Graduate Study in Engineering, in cooperation with the United States Army Engineering Research and Development Center. All requirements for the degree may be satisfied in the Vicksburg Center. Fifteen semester hours may be taken in courses taught by adjunct faculty, with an additional requirement of nine semester hours to be taken in courses taught by the regular, full-time engineering faculty at Mississippi State University. Thesis research and thesis requirements may be met in the Vicksburg Center through the appointment of a thesis director from the adjunct engineering faculty in Vicksburg and a major professor who is a member of

the regular, full-time engineering faculty on the campus of Mississippi State University.

In addition to the courses taught on-site, students may register for video tape courses and interactive courses taught via video teleconferencing in Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Industrial Engineering and Mechanical Engineering.

#### Center of Higher Learning at the Stennis Space Center

This center, located at the John C. Stennis Space Center in Hancock County, provides students the opportunity to pursue master's degrees from Mississippi State University in Civil Engineering, Electrical Engineering, Industrial Engineering, and Mechanical Engineering, as well as a certificate in Software Engineering. Course materials are delivered by distance learning technologies - internet delivered video, interactive video teleconferencing, and video tape. A dedicated student may earn a master's degree in three or four years. Students must be fully admitted for graduate studies in one of the participating programs and follow a plan of study approved by the department.

Students may register for courses at the Center of Higher Learning. Courses are delivered by distance education technology during the enrollment period; corresponding sections of the same courses are taught simultaneously on the main campus in Starkville.

In addition to courses offered as part of the four degree programs, courses in other engineering disciplines may be offered upon request.

#### Meridian Campus

The Meridian campus of Mississippi State University is located at 920 Highway 19 North in Meridian, Mississippi. Students may pursue master's degrees in Chemical Engineering, Civil Engineering, Computer Engineering, Computer Science, Electrical Engineering, Industrial Engineering, and Mechanical Engineering by distance education. The same courses as those offered at the Vicksburg and Stennis centers are offered at Meridian. Students must be fully admitted for graduate studies in one of the participating programs and follow a plan of study approved by the department.

For more information on courses offered through distance education in the College of Engineering, contact

Russell Foster  
Engineering Coordinator Division of Continuing Education  
Memorial Hall, Mississippi State University, MS 39762-9634.  
Mailstop :9634; phone: 662-325-2655; email: rfoster@ce.msstate.edu.

## Department of AEROSPACE ENGINEERING (ASE)

Interim Department Head: Associate Professor Boyd Gatlin  
Office: 330 Walker Engineering Building

The Department of Aerospace Engineering at Mississippi State University provides an accredited undergraduate curriculum with the mission of preparing students to enter the workplace as qualified entry-level aerospace engineers or to enter any aerospace engineering graduate program adequately prepared for advanced study. This mission is accomplished by a strong foundation in mathematics and physical and engineering sciences upon which student problem solving and application skills are developed. The curriculum stresses analytical and communication skills, with particular emphasis placed on engineering design throughout the curriculum. A capstone design experience in the senior year provides the opportunity to integrate design, analytical, and problem solving skills along with communication skills in a team environment which emulates aerospace engineering practice.

The mission is accomplished by the following learning objectives:

1. Provide a strong foundation in the fundamentals of mathematics, basic physical sciences, and engineering sciences.
2. Develop analytical and problem-solving skills and proficiency in the use of techniques and tools that implement these skills.
3. Develop design skills and integrate design throughout the curriculum.
4. Develop proficiency in written, oral, and graphic communication.
5. Introduce and develop an appreciation for the arts, humanities, and social sciences.
6. Promote engineering ethics, personal integrity and responsibility, and professionalism.
7. Develop teamwork and leadership skills.
8. Instill a commitment to lifelong learning.

The aerospace engineering program is accredited under the EC 2000 criteria by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

#### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (9 hours)

See Major Core

Science (6 hours)

See Major Core

Humanities (6 hours)

See University Core

Fine Arts (3 hours)

See University Core

Social/Behavioral Sciences (6 hours)

See University Core



**Major Core**

## Math and Basic Science

MA 1713	Calculus I
MA 1723	Calculus II
MA 2733	Calculus III
MA 2743	Calculus IV
MA 3253	Differential Equations I
3 hours	Math Elective
CH 1213	Fundamentals of Chemistry
CH 1211	Investigations in Chemistry
PH 2213	Physics I
PH 2223	Physics II
PH 2233	Physics III

## Engineering Topics

ECE 3183	Electrical Engineering Systems
EM 2413	Engineering Mechanics I
EM 2433	Engineering Mechanics II
EM 3213	Mechanics of Materials
EM 3313	Fluid Mechanics
EM 3413	Vibrations
ASE 1013	Intro to Aerospace Engineering
ASE 1023	Intro to Flight Mechanic
ASE 2013	Astrodynamics, Propulsion, and Structures
ASE 3333	Gas Dynamics

ASE 3123	Static Stability and Control
ASE 3213	Aircraft Structures I
ASE 3223	Aircraft Structures II
ASE 3313	Incompressible Aerodynamics
ASE 4113	Aerospace Engineering Lab I
ASE 4123	Dynamic Stability and Control
ASE 4143	Astrodynamics I
ASE 4343	Compressible Aerodynamics
ASE 4721	Aerospace Engineering Lab II
ASE 4413	Aerospace Propulsion
ASE 4613	Systems Design
ASE 4623	Aerospace Structures III
9 hours	Technical Electives*

## General Topics

GE 3513	Technical Writing**
3 hours	Social/Behavioral Science/Humanities or Fine Arts Elective

## Computer Literacy

Fulfilled in Engineering Topics courses

**Total hours needed for major: 134**

\* The technical electives may be selected from the following: Any of the department's listing of Advanced Undergraduate/ Graduate Courses, or EM 4123 or EM 4133. Other courses in computer science, physical science, mathematics, and engineering may be elected, with special approval of the department.

\*\* Fulfills Jr./Sr. Writing Requirement.

**Department of AGRICULTURAL and BIOLOGICAL ENGINEERING (ABE)**

Department Head: Professor Jerome A. Gilbert

Office: 100 Agricultural and Biological Engineering Building

**AGRICULTURAL ENGINEERING**

An Agricultural Engineering emphasis is offered in the Biological Engineering curriculum in the Agricultural and Biological Engineering Department, which is jointly administered by the College of Engineering and the College of Agriculture and Life Sciences. The student can tailor a specialization in agricultural engineering by choosing the precision agriculture/ag systems emphasis in the Biological Engineering curriculum. Advisors in the department will assist students in selecting courses consistent with the agricultural engineering interests of the student. The Biological Engineering curriculum below should be consulted for required curricular courses.

**BIOLOGICAL ENGINEERING (BE)**

Biological Engineering is that branch of the engineering profession which deals with engineering problems encountered in biological systems. The responsibilities of the Biological Engineer may include the need for more complex food-producing systems, controlling and monitoring the deterioration of the earth's environment, the replacement of living organs and artificial organs, the use of new technologies to assist the disabled, and the creation of new engineering designs based on the inherently creative characteristics of living systems. The graduate can find rewarding experiences in extending his/her education in the engineering analysis of living things.

The curriculum in Biological Engineering provides options for study in the following emphasis areas: biomedical engineering, environmental engineering, precision agriculture/ag systems, and pre-medical studies. The curriculum is based upon fundamentals from both the physical and biological sciences. It includes engineering analysis and design courses planned to give the student sufficient background for analyzing functions and developing mechanisms related to biological systems. It has proven to be an excellent program of study for premedical, pre-dental, pre-law, and pre-veterinary students. Engineering design is integrated throughout the curriculum, culminating in a two-semester design experience in the senior year (ABE 4812 and 4111 and ABE 4122).

The educational objectives of the program are as follows:

1. To educate students in the academic discipline of Biological Engineering so that they can formulate and solve engineering problems involving biological systems.
2. To ensure that students develop effective written and oral communication skills.
3. To instruct students in the latest computer-based technology in engineering.
4. To develop the students' ability to work individually and in teams to complete engineering design projects.
5. To prepare students for employment in engineering jobs or for study in graduate and professional schools and for continual professional development.

The Biological Engineering curriculum is offered by the Department of Agricultural and Biological Engineering which is jointly administered by the College of Engineering and the College of Agriculture and Life Sciences. All freshmen in Biological Engineering are required to have a laptop computer. Students should check with the College of Engineering for computer specifications prior to purchasing a laptop.

The Biological Engineering Program is accredited under the EC 2000 criteria by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

**University Core**

## English Composition (6 hours)

EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I

EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II

## Public Speaking (3 hours)

CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication

## Mathematics (9 hours)

See Major Core

## Science (6 hours)

See Major Core

## Humanities (6 hours)

See University Core

## Fine Arts (3 hours)

See University Core

## Social/Behavioral Sciences (6 hours)

See University Core

**Major Core**

## Math and Basic Science

MA 1713	Calculus I
MA 1723	Calculus II
MA 2733	Calculus III
MA 2743	Calculus IV

MA 3253	Differential Equations I	ABE 4423	Bioinstrumentation II
CH 1213	Fundamentals of Chemistry I	ABE 3813	Biophysical Properties of Materials
CH 1211	Investigations in Chemistry	ABE 4313	BioTrmnt NPS Poll <b>or</b>
CH 1223	Fundamentals of Chemistry	ABE 4323	Phys Sys Biomed Eng
CH 1221	Investigations in Chemistry	ABE 4911	Seminar
CH 2503	Elementary Organic Chemistry	ABE 4111	Biological Engineering Principles Laboratory
CH 2501	Elementary Organic Chemistry Lab	ABE 4812	Principles of Engineering Design
PH 2213	Physics I	ABE 4122	Biological Engineering Practices Lab
PH 2223	Physics II	EG 1143	Graphic Communication
PH 2233	Physics III	CS 1233	Computer Programming with C
4 hours	BIO Science Elective	EM 2413	Engineering Mechanics I
3 hours	BIO Science Elective <b>or</b> Engineering elective	EM 2433	Engineering Mechanics II
3 hours	BIO Science Elective	ME 3533	Thermodynamics
BIO 3304	General Microbiology	6 hours	Approved Engineering Electives
BCH 3613	Elementary Biochemistry	3 hours	Engineering Elective - ABE prefix
<b>Engineering Topics</b>			
EM 3213	Mechanics of Materials	<b>General Topics</b>	
EM 3313	Fluid Mechanics	GE 3513	Technical Writing*
ABE 1911	Intro to Engineering in Life Sciences	<b>Computer Literacy</b>	
ABE 2421	Analytical Methods	Fulfilled in Engineering Topics courses	
ABE 4803	Biosystems Simulation		
ABE 3413	Bioinstrumentation I		
ABE 3303	Biosystems Environ I		

**Total hours needed for major: 136**

\* Fulfills Jr./Sr. Writing Requirement.

## DAVE C. SWALM SCHOOL of CHEMICAL ENGINEERING (CHE)

Director: Professor Kirk H. Schulz

Chemical Engineering is the application of the principles of the physical sciences, together with the principles of economics and human relations, to fields that pertain directly to processes and process equipment in which material is treated to effect a change in state, energy content, or composition. The Chemical Engineering profession is quite diversified in terms of industries and opportunities within those industries.

The Dave C. Swalm, School of Engineering's goal is to mold students into chemical engineers that have the potential to have far reaching impacts on the advancement of science and industrial practices. This is accomplished through a clear department vision and stated objectives.

- A. Provide students with a foundation on which to establish a basis to learn engineering principles. This is accomplished by providing the students with skills in
- Fundamental math (algebra and calculus principles)
  - Basic science
  - Engineering concepts
- B. Expand the students' understanding of fundamental engineering principles to address the practice and/or research aspects of chemical engineering. This is achieved through training in
- Problem solving skills
  - Traditional Chemical Engineering Fundamentals
  - Advanced math concepts (differential equations and conceptions building on these principles)
- C. Refine students' engineering abilities to become practicing chemical engineers using a holistic approach incorporating
- Product and Process Design
  - Economic Aspects
  - Ethics
  - Environmental Issues
  - Oral and written communications
  - Perspective through art, humanities and social/behavioral sciences
  - The application and development of computer skills
  - Team building and cooperative working groups
  - Health and Safety Issues
  - Professionalism

Design experiences are integrated throughout the chemical engineering curriculum, beginning with the Design Concepts for CHE courses taken during the freshman year, continuing through the unit operations and reactor design courses and culminating in a comprehensive design experience in Plant Design taken during the senior year. Students may select the CHE elective, Chemistry elective and two technical electives from among the faculty approved lists to provide depth in a given area of chemical engineering.

The Chemical Engineering program is accredited under the EC 2000 criteria by the Engineering Accreditation Commission of the accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

### University Core

English Composition (6 hours)

- EN 1103 English Comp I **or**
- EN 1163 Accelerated Comp I **or**
- EN 1183 Honors Comp I

- EN 1113 English Comp II **or**
- EN 1173 Accelerated Comp II **or**
- EN 1193 Honors Comp II

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**
- CO 1093 Honors Oral Communication

Mathematics (9 hours)

See Major Core

Science (6 hours)

See Major Core

Humanities (6 hours)

See University Core

Fine Arts (3 hours)

See University Core

Social/Behavioral Sciences (6 hours)

See University Core

### Major Core

Math and Basic Science

- MA 1713 Calculus I
- MA 1723 Calculus II
- MA 2733 Calculus III
- MA 2743 Calculus IV
- MA 3253 Differential Equations I
- CH 1213 Fundamentals of Chemistry
- CH 1211 Investigations in Chemistry
- CH 1223 Fundamentals of Chemistry
- CH 1221 Investigations in Chemistry
- CH 4411 Physical Chemistry Lab
- CH 4413 Physical Chemistry I
- CH 4511 Organic Chemistry Lab I
- CH 4513 Organic Chemistry I
- CH 4521 Organic Chemistry Lab II
- CH 4523 Organic Chemistry II
- PH 2213 Physics I
- PH 2223 Physics II
- PH 2233 Physics III

Engineering Topics

- EM 2413 Engineering Mechanics I
- CHE 1011 Chemical Engineering Freshman Seminar
- CHE 1233 Design Concepts in Chemical Engineering
- CHE 2114 Mass and Energy Balances
- CHE 3113 Chemical Engineering Thermodynamics I

CHE 3123	Chemical Engineering Thermodynamics II
CHE 3203	Fluid Flow Operations
CHE 3213	Heat Transfer Operations
CHE 3222	Chemical Engineering Laboratory I
CHE 3223	Mass Transfer Operations
CHE 3232	Chemical Engineering Lab II
CHE 3413	Engineering Materials
CHE 3823	Analysis and Simulation
CHE 4113	Chemical Reactor Design
CHE 4133	Process Design
CHE 4223	Process Instrumentation and Controls
CHE 4234	Chemical Plant Design
ECE 3183	Electrical Engineering Systems
	Chemical Engineering Elective
	Chemistry Elective***
6 hours	Technical Elective****

General Topics	
3 hours	HU/FA/SS Elective
GE 3513	Technical Writing*+
Computer Literacy	
	Fulfilled in Engineering Topics courses

**Total hours needed for major: 138**

- \* With consent of students advisor; EM 3313, Fluid Mechanics, may be substituted for CHE 3203. ME 3513, Thermodynamics I, or ME 3533, Thermodynamics, may be substituted for CHE 3113. ME 3313, Heat Transfer, may be used in place of CHE 3213.
- \*\* Humanities, Social Science, and Fine Arts Electives are to be selected in consultation with advisor.
- \*\*\* To be chosen from among the following list of approved chemistry electives: CH 3213, CH 4213, CH 4303, CH 4353, CH 4423.
- \*\*\*\* To be chosen in consultation with the student's advisor.
- \*+ Fulfills Jr./Sr. Writing Requirement.

**Department of CIVIL ENGINEERING**

Department Head: Professor Thomas White  
Office: 235 Walker Engineering Building

The Civil Engineer plans, designs, and supervises construction of almost every facility essential to modern life. Roads, bridges, buildings, water supply and waste disposal systems, transit systems, airfields, dams and irrigation projects are examples of the creative efforts of Civil Engineers. The field of Civil Engineering offers limitless employment opportunities that range from high-tech computer-aided design to hands-on field engineering. Civil Engineers find rewarding careers in government, military, industry or private practice to meet the challenges of pollution control, energy, transportation, housing and other problems that face modern society.

The mission of the Civil Engineering Department at Mississippi State University is to provide the student with knowledge and skills needed to enter civil engineering practice, or to continue studies at the graduate level. By serving as role models, the faculty helps the student develop a commitment to ethics and integrity, and a sense of responsibility to the community and the public.

The education program objectives of the Department of Civil Engineering carry out the department's mission by providing an educational environment that will:

1. Provide a strong foundation in the fundamentals of mathematics, basic sciences and engineering sciences;
2. Develop basic analytical and problem-solving skills, and proficiency in the use of techniques and tools that implement these skills;
3. Integrate the fundamentals of engineering design throughout the curriculum;
4. Develop proficiency in written and oral communications;
5. Instill awareness of, and appreciation for, the arts, humanities and social sciences;
6. Promote a sense of professional ethics, and personal integrity and responsibility;
7. Develop teamwork and leadership skills; and
8. Instill a commitment to the challenge of lifelong learning.

The Civil Engineering Program is accredited under the EC 2000 criteria by the Engineering Accreditation Commission of the Accreditation Board for the Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

**University Core**

English Composition (6 hours)	
EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II

Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication

Mathematics (9 hours)  
See Major Core

Science (6 hours)  
See Major Core

Humanities (6 hours)  
See University Core

Fine Arts (3 hours)  
See University Core

Social/Behavioral Sciences (6 hours)  
See University Core

**Major Core**

Math and Basic Science	
MA 1713	Calculus I
MA 1723	Calculus II
MA 2733	Calculus III
MA 2743	Calculus IV
MA 3253	Differential Equations I
CH 1213	Fundamentals of Chemistry
CH 1211	Investigations in Chemistry
CH 1223	Fundamentals of Chemistry
CH 1221	Investigations in Chemistry
PH 2213	Physics I
PH 2223	Physics II
PH 2233	Physics III

**Engineering Topics**

EG 1143	Graphic Communication
IE 3913	Engineering Economy I
IE 4613	Engineering Statistics
ME 3533	Thermodynamics <b>or</b>
ECE 3183	Electrical Engineering Systems
EM 2413	Engineering Mechanics I
EM 2433	Engineering Mechanics II
EM 3213	Mechanics of Materials
EM 3313	Fluid Mechanics
CE 1003	Intro to Civil Engineering
CE 2214	Surveying
CE 3113	Transportation Engineering
CE 3414	Soil Mechanics
CE 3603	Structural Mechanics
CE 3314	Construction Materials
CE 3523	Water Resources
CE 3824	Environmental Engineering
CE 4133	Geometric Design of Highways <b>or</b>
CE 4433	Foundations <b>or</b>
CE 4143	Traffic Engineering
CE 4533	Comp Methods in Water Resource Eng <b>or</b>
CE 4873	Water and Wastewater Engineering
CE 4601	Fundamentals of Structural Design
CE 4623	Steel Structures <b>or</b>
CE 4633	Concrete Structures
CE 4903	Civil Engineering Comprehensive
3 hours	Civil Engineering Design Elective
6 hours	Civil Engineering Electives

General Topics	
GE 3513	Technical Writing*

Computer Literacy  
Fulfilled in Engineering Topics courses

**Total hours needed for major: 133**

- \* Fulfills Jr./Sr. Writing Requirement.

## Department of COMPUTER SCIENCE (CS)

Department Head: Professor Julia E. Hodges  
Office: 300 Butler Hall

The Department of Computer Science is dedicated to maintaining quality programs in undergraduate teaching, graduate teaching, and research, and to the fruitful interaction between teaching and research. In research, we wish to maintain our present emphasis on applications (often pursued with colleagues from other disciplines), and upon the synergistic relationships between theory and applications in which the most meaningful advances often result. The department has identified three specific areas in which we shall seek national prominence: software engineering, artificial intelligence, and high-performance computing/scientific visualization. The Department of Computer Science offers degree programs leading to the Bachelor of Science degree in Computer Science, Software Engineering, and (jointly with the Department of Electrical and Computer Engineering) Computer Engineering. The department also offers study leading to the Master of Science and the Doctor of Philosophy degrees in Computer Science.

The Mississippi Alpha Chapter of Upsilon Pi Epsilon, the national computer science honorary society, was chartered at the University in 1973 and juniors, seniors, and graduate students with outstanding academic records are selected for membership. The department also supports a student chapter of ACM, the national professional society of the computing sciences.

For more information about the computer science or software engineering programs, requirements of double-major programs, careers in computer science and software engineering, or placement of graduates, please contact the Department of Computer Science at Box 9637, Mississippi State, MS 39762, at [office@cs.msstate.edu](mailto:office@cs.msstate.edu), or at 662-325-2756. View the Computer Science WWW pages at <http://www.cs.msstate.edu/>. For more information about the Computer Engineering program, please see the section on the Department of Electrical and Computer Engineering.

### Computer Science

Major Advisor: Dr. Donna S. Reese  
300 Butler Hall

Computer Science is the study of the principles, applications, and technologies of computing and computers. It involves the study of data and data structures and the algorithms to process these structures; principles of computer architecture-both hardware and software; problem solving and design methodologies; and language design, structure and translation techniques. Computer Science provides a foundation of knowledge for students with career objectives in a wide range of computing and computer-related professions.

The objectives for the department with respect to the Bachelor of Science Degree in Computer Science are as follows:

1. The instruction a student receives will be consistent with national norms and will enable the student to become a competent software developer, to understand how computer hardware and software work, and to understand computer science theory.
2. The graduate can compete for jobs in the discipline at both the regional and national levels, and will be able to solve technical problems together with co-workers, to use and develop software tools, to communicate effectively in the workplace, and to apply computer science theory to practical circumstances.
3. The graduate can compete for admission to graduate programs nationwide, and will be able to continue learning new principles and practices of computing as the field progresses.
4. The graduate will understand social and ethical issues that arise from the increased use of technology in society.

Computer Science graduates begin careers as computer programmers, system analysts, programmer/analysts, software engineers, systems programmers, computer system engineers and in a number of other computer-related jobs. A minor in computer science is available to students with major programs of study in other fields at the University.

The Bachelor of Science degree requires the completion of a total of 129 credit hours of general studies, computer science, mathematics and science, supporting technical courses. A list of the computer science curriculum requirements is shown below. To graduate, a student must have a "C" average in all MSU computer science courses attempted.

The computer science program is accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore MD 21202-4012. Telephone: 410-347-7700.

#### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (9 hours)

See Major Core

Science (6 hours)

See Major Core

Humanities (6 hours)

See University Core

Fine Arts (3 hours)

See University Core

Social/Behavioral Sciences (6 hours)

See University Core

#### Major Core

Math and Basic Science

MA 1713 Calculus I  
MA 1723 Calculus II  
MA 2733 Calculus III  
MA 3113 Linear Algebra  
CH 1213 Fundamentals of Chemistry  
CH 1211 Investigations in Chemistry  
PH 2213 Physics I  
PH 2223 Physics II

BIO 1203 Plant Biology **or**  
BIO 1504 Principles of Zoology  
3 - 4 hours Science Elective from departmental list

Engineering and Computer Science Topics

CS 1284 Intro to Computer Programming  
CS 1384 Intermediate Computer Programming  
CS 2383 Data Structures and Analysis of Algorithms  
CS 2813 Discrete Structures  
CS 2324 Computer Science III  
CS 3124 Microcomputers I  
CS 3813 Formal Languages  
CS 4733 Operating Systems  
CS 4113 Computer Architecture  
CS 4833 Intro to Analysis of Algorithms  
CS 4713 Programming Languages  
CS 3981 Social & Ethical Issues in Computing  
12 hours CS electives from departmental list  
ECE 3714 Digital Devices  
IE 4613 Engineering Stats I  
6 hours Technical Electives - See advisor

General Topics

GE 3513 Technical Writing\*  
PHI 1113 Introduction to Logic  
6 hours International/Intercultural Studies - see advisor  
2 hours free electives\*\*

Computer Literacy

Fulfilled in Engineering & Computer Sci Topics courses

#### Total hours needed for major: 129

\* Fulfills Jr./Sr. Writing Requirement.

\*\* Students taking BIO 1203 and 3 hour science elective need 2 hours of free electives

**Requirements for a minor in Computer Science.** Computer science has application in a broad range of disciplines, and students with majors in other fields of study may wish to complement their studies with a minor in computer science. Completion of the minor requirements should prepare the student to pursue a career as a computer applications specialist within his/her field of study or as an entry-level computer programmer in the general

computing environment. The minor in computer science is not available to students majoring in computer engineering or software engineering since significant parts of these majors consist of computer science courses.

A minor in computer science consists of CS 1314, CS 2813, CS 2314, and nine hours of approved upper-division courses. A list of approved courses is available from the Department of Computer Science.

## Software Engineering (SE)

Major Advisor: Dr. Donna S. Reese  
300 Butler Hall

Software Engineering is the application of engineering practices to the design and maintenance of software. The Software Engineering degree program prepares students for careers in the engineering of large complex software systems and products. These systems often involve millions of lines of code and frequently operate in safety-critical environments. The Software Engineering major contains courses related to the study of software engineering in practice necessary to manage these development processes. The faculty for the Software Engineering program is drawn from the Computer Science and Industrial Engineering Departments.

The objectives for the department with respect to the Bachelor of Science Degree in Software Engineering are as follows:

1. The instruction a student receives will be consistent with national norms and will enable the student to understand the state-of-the-practice engineering of software systems and products and to become a competent software developer, and to understand how software systems are designed, constructed, and maintained.
2. The graduate can successfully compete for software engineering positions in the discipline at both the regional and national levels, and will be successful in the discipline by being able to apply computer science to software engineering processes in practical circumstances.
3. The graduate can solve technical problems together with co-workers in a team environment, can use and develop software tools, and apply written and oral communication skills effectively in the workplace.
4. The graduate can compete for admission to graduate programs nationwide, and will be able to continue learning new principles and practices of computing as the field progresses. The graduate is capable of advancing to professional certification, as it becomes available nationwide.
5. The graduate will understand and be able to apply social and ethical duties that arise from the increased use of technology in society.

The Bachelor of Science degree in Software Engineering requires the completion of a total of 133 credit hours of general studies, computer science, industrial engineering, mathematics and science, supporting technical courses, and free electives. A listing of the software engineering curriculum requirements is shown below. To graduate, a student must have a "C" average in all MSU computer science courses attempted.

### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (9 hours)

See Major Core

Science (6 hours)

See Major Core

Humanities (6 hours)

See University Core

Fine Arts (3 hours)

See University Core

Social/Behavioral Sciences (6 hours)

See University Core

### Major Core

Math and Basic Science

MA 1713 Calculus I  
MA 1723 Calculus II  
MA 2733 Calculus III  
MA 2743 Calculus IV **or**  
MA 3053 Foundations of Mathematics  
MA 3253 Differential Equations **or**  
MA 3113 Linear Algebra  
CH 1213 Fundamentals of Chemistry  
CH 1211 Investigations in Chemistry  
PH 2213 Physics I  
PH 2223 Physics II

BIO 1203 Plant Biology **or**  
BIO 1504 Principles of Zoology

### Engineering Topics

CS 1284 Intro to Computer Programming  
CS 1384 Intermediate Computer Programming  
CS 2383 Data Structures and Analysis of Algorithms  
CS 2813 Discrete Structures  
CS 2324 Computer Science III  
CS 3124 Microprocessors I  
CS 4213 Software Engineering I  
CS 3981 Social & Ethical Issues in Computing  
CS 4733 Operating Systems  
CS 4504 Database Management Systems  
CS 4224 Software Engineering II  
CS 4833 Analysis of Algorithms  
CS 4233 Software Architecture & Design Paradigms  
CS 4243 Information & Computer Security  
CS 4153 Data Communications & Computer Networks  
CS 3212 Software Engineering Capstone I  
CS 4283 Software Testing & Quality Assurance  
CS 3222 Software Engineering Capstone II  
ECE 3714 Digital Devices  
IE 3913 Engineering Economy  
IE 4533 Project Management  
IE 4573 Process Improvement Engineering  
IE 4113 Human Factors in Engineering **or**  
IE 4513 Engineering Administration  
IE 4613 Engineering Statistics I

### General Topics

GE 3513 Technical Writing  
3 hours Technical elective - see advisor

### Computer Literacy

Fulfilled in Engineering Topics courses

**Total hours needed for major: 133**

\* Fulfills Jr./Sr. Writing Requirement.

**Requirements for a minor in Software Engineering.** Software Engineering practices and skills are valuable in a wide range of disciplines, and students with majors in other fields of study may wish to complement their studies with a minor in software engineering. Completion of the minor requirements should prepare the student to pursue careers that involve the application and development of software systems in their field of study.

A minor in software engineering consists of CS 1314, CS 2314, CS 2324, and nine hours of approved upper-division software engineering courses. A list of approved courses is available from the Department of Computer Science.

## Department of ELECTRICAL and COMPUTER ENGINEERING (ECE)

Interim Department Head: Professor James C. Harden  
Office: 216 Simrall Engineering Building

The specific educational objectives for both the Computer Engineering and Electrical Engineering undergraduate programs of study are that students:

1. obtain a strong foundation in fundamentals including competence in mathematics, science, computing, and engineering;
2. demonstrate the ability to address unstructured problems specific to technical specialties in Computer Engineering or Electrical Engineering by identifying and implementing solutions using the proper tools, practical approaches, and flexible thinking;
3. interact with others, both individually and within multidisciplinary teams using effective oral and written communication skills and have the ability to deal with both technical and non-technical subjects when working with peers, supervisors, and the public;
4. develop an appreciation for the ethical duties incumbent on a Computer Engineering or Electrical Engineering professional including a commitment to lifelong learning and concern for society and the environment.

### COMPUTER ENGINEERING (CPE)

Major Advisor: Mr. Mike Nossier  
Office: 216 Simrall Engineering Building

With the origin of the modern computer dating back to the late 1940's and the growth of computer hardware fueled by the availability of digital integrated circuits starting in the late 1960's, Computer Engineers have enjoyed a pivotal role in technology that now permeates our entire society. Whether the end product is an integrated circuit, a system of networked embedded computers, or any system that relies on digital hardware or computer software, its development requires the skills of a Computer Engineer. While computing systems include both hardware and software, it is the optimal combination of these components that is the unique realm of the Computer Engineer. Today, Computer Engineers are a driving force in the technological and economic development of the digital age.

The curriculum requirements for Computer Engineering are built around a substantial engineering core curriculum and required courses in Electrical Engineering and Computer Science. The requirements in Mathematics, the basic sciences, and engineering sciences provide the breadth of exposure required for all engineering disciplines. Basic Electrical Engineering requirements include Circuit Theory, Electronics and Digital Devices which are supplemented by upper-level courses in Computer Architecture, Integrated Circuit Design and Computer Aided Design of Digital Systems. Basic Computer Science courses include a coordinated three-course sequence providing fundamental knowledge in data structures, algorithms, object oriented programming, software engineering, real-time application and software development tools. These courses are developed across multiple platforms and are based on the C++ and Java language. Upper-level courses in Data Communications and Computer Networks, Algorithms and Operating Systems are also provided. Students wishing to gain depth of coverage in real-time embedded systems, parallel computing, advanced VLSI or signal processing can achieve this with the availability of technical electives selected from an approved list or in consultation with a faculty advisor. Required courses in communications skills, social sciences and humanities provide studies in non-technical areas that are traditional in a broad-based education. A capstone senior design course requires students to apply newfound knowledge and explore entrepreneurship. Students research and identify a problem and work in teams applying a combination of hardware and software to develop a solution. Critical and Final Design Reviews enable students to develop their professional presentation skills.

The Computer Engineering Program is accredited under the EC 2000 criteria by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

This program is offered through joint efforts of faculty in the Department of Electrical and Computer Engineering and the Department of Computer Science. Prospective Computer Engineering majors should contact the Computer Engineering Program Coordinator for updated program requirements.

#### University Core

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (9 hours)

See Major Core

Science (6 hours)

See Major Core

Humanities (6 hours)

See ECE website\*

Fine Arts (3 hours)

See ECE website\*

Social/Behavioral Sciences (6 hours)

See ECE website\*

#### Major Core

Math and Basic Science

MA 1713 Calculus I  
MA 1723 Calculus II  
MA 2733 Calculus III  
MA 2743 Calculus IV  
MA 3253 Differential Equations I  
MA 3113 Introduction to Linear Algebra  
CH 1213 Fundamentals of Chemistry  
CH 1211 Investigations in Chemistry  
PH 2213 Physics I

PH 2223 Physics II

Engineering Topics

CS 1284 Intro to Computer Programming  
CS 1384 Intermediate Computer Programming  
CS 2383 Data Structures and Analysis Algorithms  
CS 2324 Computer Science III  
CS 2813 Discrete Structures  
CS 4153 Data Communications & Computer Networks  
CS 4733 Operating Systems I  
CS 4833 Introduction to Analysis of Algorithms  
ECE 1002 Introduction to Electrical and Computer Eng  
ECE 3144 Circuit Analysis I  
ECE 3153 Circuit Analysis II  
ECE 3163 Signals and Systems  
ECE 3243 Electronic Circuits I  
ECE 3714 Digital Devices and Logic Design  
ECE 3724 Microprocessors I  
ECE 4243 Introduction to Physical Electronics  
ECE 4263 Principles of VLSI Design  
ECE 4532 Computer Engineering Design I  
ECE 4542 Computer Engineering Design II  
ECE 4713 Computer Architecture  
ECE 4743 Digital System Design  
IE 4613 Engineering Statistics I  
6 hours Technical Electives\*

General Topics

3 hours Free elective  
GE 3513 Technical Writing\*\*

Computer Literacy

Fulfilled in Engineering Topics courses

**Total hours needed for major: 133**

\* See website at [www.ece.msstate.edu/ugrad/cpe](http://www.ece.msstate.edu/ugrad/cpe).

\*\* Fulfills Jr./Sr. Writing Requirement.

**ELECTRICAL ENGINEERING (EE)**

Major Advisor: Mr. J. Mike Nosser  
216 Simrall Engineering Building

The Electrical Engineer is a principal contributor to the modern technological age in which we live today. Following in the footsteps of inventors such as Thomas Edison and Alexander Graham Bell, the Electrical Engineer is developing technology that improves the quality of life. Developments in microelectronics, telecommunications, and power systems have had a profound effect on each of us. Electrical Engineers have affected all segments of our society such as transportation, medicine, and the entertainment industry, to name only a few. Indeed, the Electrical Engineer has principally been responsible for the advent of the computer age in which we live today as well as the computer's miniaturization and rapid expansion in computational power.

The curriculum in Electrical Engineering has a foundation based on the principles of the electrical and physical sciences and uses mathematics as a common language to facilitate the solution of engineering problems. The core curriculum consists of a sequence of courses in digital devices, electrical circuits, electromagnetic field theory, electronics, and modern energy conversion. In the senior year, students have the opportunity to take additional course work in one or more technical areas that include: telecommunications, electromagnetics, power systems, high voltage, feedback control systems, microelectronics, signal processing, and computer systems. Supporting course work outside electrical engineering consists of a strong background in mathematics, physical sciences, social sciences, fine arts, humanities, and personal communication skills. Computers are used extensively throughout the curriculum, and students are expected to become proficient in higher-order programming languages and several application software tools. Although the concept of design is stressed throughout the program so as to emphasize the problem-solving skills of the engineer, the senior year includes a capstone design experience where much of the previous study is culminated. Through this two-semester design course sequence, students are required to integrate design and analytical problem-solving skills together with communication skills in a team environment.

The Electrical Engineering Program is accredited under the EC 2000 criteria by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113 English Comp II **or**  
EN 1173 Accelerated Comp II **or**  
EN 1193 Honors Comp II

Public Speaking (3 hours)

CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (9 hours)

See Major Core

Science (6 hours)

See Major Core

Humanities (6 hours)

See ECE website\*

Fine Arts (3 hours)

See ECE website\*

Social/Behavioral Sciences (6 hours)

See ECE website\*

**Major Core**

Math and Basic Science

MA 1713 Calculus I  
MA 1723 Calculus II  
MA 2733 Calculus III  
MA 2743 Calculus IV  
MA 3253 Differential Equations I  
MA 3113 Introduction to Linear Algebra  
MA 4533 Probability and Random Processes **or**  
MA 4523 Introduction to Probability  
CH 1213 Fundamentals of Chemistry

CH 1211 Investigations in Chemistry  
PH 2213 Physics I  
PH 2223 Physics II  
PH 2233 Physics III

**Engineering Topics**

CS 1233 Computer Programming with C  
ECE 1002 Introduction to ECE  
ECE 3144 Circuit Analysis I  
ECE 3153 Circuit Analysis II  
ECE 3163 Signals and Systems  
ECE 3243 Electronic Circuits I  
ECE 3254 Electronic Circuits II  
ECE 3313 Electromagnetics I  
ECE 3324 Electromagnetics II  
ECE 3414 Fundamentals of Energy Systems  
ECE 4512 EE Design I  
ECE 4522 EE Design II  
ECE 3714 Digital Devices and Logic Design  
ECE 3724 Microprocessors I  
ECE 3732 Software Tools for EE's  
12 hours EE technical elective\*  
EM 2413 Engineering Mechanics I **or**  
ME 3533 Thermodynamics  
3 hours Engineering Science elective\*

**General Topics**

GE 3513 Technical Writing\*\*  
3 hours Free elective  
3 hours Professional Enrichment elective\*

**Computer Literacy**

Fulfilled in Engineering Topics courses

**Total hours needed for major: 132**

\* See website at [www.ece.msstate.edu/ugrad/ee](http://www.ece.msstate.edu/ugrad/ee).  
\*\* Fulfills Jr./Sr. Writing Requirement.

**Department of INDUSTRIAL ENGINEERING (IE)**

Department Head: Professor Larry Brown;  
Office: 260 McCain Engineering Building

Industrial engineering is the application of engineering methods and the principles of scientific management to the design, improvement, and installation of integrated systems of people, materials, information, equipment, and energy. The industrial engineer is concerned with the design of total systems, and is the leader in the drive for increased productivity and quality improvement.

The industrial engineering profession uses a variety of specialized knowledge and skills. These include communications, economics, mathematics, physical and social sciences, together with the methods of engineering analysis and design.

The industrial engineer is often involved in designing or improving major systems that encompass the total organization. Consequently, he/she is often in contact with individuals from many segments of the organization. From his/her education and these experiences, the industrial engineer develops a global view of the many inter-related operations necessary to deliver a firm's goods and services. Because of their management skills and global view of the organization, a large proportion of industrial engineers move into management positions, and later advance into top-management positions.

Although industrial engineering is especially important to all segments of industry, it is also applied in other types of organizations, such as transportation, health care, public utilities, agriculture, defense, government, and merchandising. Industrial engineering is finding increasing application in service industries.

With increasing emphasis on quality and productivity for successful international competition, it is expected that industrial engineers will be in increasing demand in the coming decades.

The objectives of the Department of Industrial Engineering are founded in Mississippi State University's Educational Philosophy and in the industrial engineering profession and were developed to satisfy the needs of the department's constituents: students, employers, alumni, and faculty.

The program objectives are:

1. To graduate students who are well versed in industrial engineering theory, know how to apply that theory, and capable of functioning effectively in a broad range of organizations.

Consequently, industrial engineering graduates are expected to be able to achieve the following:

- A. Function effectively within an organization, with an understanding of its many operations and its management style.
  - B. Evaluate and design operation and management systems, and their controls, to safely and effectively produce and deliver the organization's products and services;
  - C. Formulate and validate mathematical and computer models of systems to predict system behavior using current or proposed resources, configurations, and limitations.
2. To graduate students who have mastered the basic and professional skills in communication (both written and oral), economics, physical and social science, mathematics, and statistics.
  3. To graduate students who are capable of interacting cooperatively in professional situations with others having different cultures, education, and interests.
  4. To graduate students who are capable of thinking independently, critically examining ideas, and making discerning professional judgements, whether intellectual, ethical, or aesthetic.
  5. To graduate students who are professionally mature, responsible, and informed citizens.
  6. To graduate students who are prepared for a lifelong pursuit of learning.
  7. To provide excellence in instruction in its industrial engineering courses, using advanced teaching methods and technologies in classrooms, laboratories, and other educational settings.

Because of the importance of systems design in the many facets of industrial engineering, instruction of the principles and methods of design is integrated throughout the curriculum of industrial engineering, and culminates in a major design experience in the student's senior year.

The Industrial Engineering Program is accredited under the EC 2000 criteria by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Telephone: 410-347-7700.

### University Core

English Composition (6 hours)

- EN 1103 English Comp I **or**  
 EN 1163 Accelerated Comp I **or**  
 EN 1183 Honors Comp I

- EN 1113 English Comp II **or**  
 EN 1173 Accelerated Comp II **or**  
 EN 1193 Honors Comp II

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**  
 CO 1093 Honors Oral Communication

Mathematics (9 hours)

See Major Core

Science (6 hours)

See Major Core

Humanities (6 hours)

See University Core

Fine Arts (3 hours)

See University Core

Social/Behavioral Sciences (6 hours)

- PSY 1013 General Psychology  
 EC 2123 Principles of Micro Econ

### Major Core

Math and Basic Science

- MA 1713 Calculus I  
 MA 1723 Calculus II  
 MA 2733 Calculus III  
 MA 2743 Calculus IV  
 MA 3113 Intro to Linear Algebra  
 CH 1213 Fundamentals of Chemistry  
 CH 1211 Investigations in Chemistry  
 CH 1223 Fundamentals of Chemistry  
 PH 2213 Physics I  
 PH 2223 Physics II

PH 2233 Physics III

Engineering Topics

- CHE 3413 Engineering Materials  
 ECE 3183 Electrical Engineering Systems  
 EM 2413 Engineering Mechanics I  
 EM 2433 Engineering Mechanics II  
 ME 3533 Thermodynamics  
 IE 1911 Introduction to IE  
 IE 3124 Industrial Ergonomics  
 IE 3323 Manufacturing Processes  
 IE 3913 Engineering Economy I  
 IE 3934 Information Systems for IE  
 IE 4333 Production Control I  
 IE 4513 Engineering Administration  
 IE 4543 Logistics Engineering  
 IE 4613 Engineering Statistics I  
 IE 4623 Engineering Statistics II  
 IE 4653 Industrial Quality Control I  
 IE 4733 Linear Programming I  
 IE 4753 Systems Engineering & Analysis  
 IE 4773 Systems Simulation I  
 IE 4915 Design of Industrial Systems  
 3 hours IE Design Elective\*  
 3 hours Engineering Science Elective\*\*

General Topics

- GE 3513 Technical Writing\*\*\*  
 3 hours Approved Elective\*\*\*\*  
 ACC 1203 Basic Industrial Accounting  
 EG 1143 Graphic Communication

Computer Literacy

Fulfilled in Engineering Topics courses

**Total hours needed for major: 135**

\* Any three-hour industrial engineering course not required in curriculum, except Motion and Time Study (IE 3113).

\*\* Courses that can be used for the Engineering Science Elective are EM 3213, EM 3313, ECE 3283.

\*\*\* Fulfills Jr./Sr. Writing Requirement.

\*\*\*\* List may be obtained from the Department of Industrial Engineering, also available online.

## Department of MECHANICAL ENGINEERING

Department Head: Professor W. Glenn Steele  
 Office: 210 Carpenter Engineering Building

Mechanical Engineering is the application of science and mathematics to the design, development, and operation of mechanical and energy systems. Examples of these systems include mechanical devices ranging from simple linkages and gears to complex automated robots and energy systems ranging from basic water pumps to high-performance jet engines. Since the range of applications is so broad, virtually all industries employ Mechanical Engineers in various capacities. Some of the major areas of employment are the manufacturing, chemical, paper, aerospace, utility, construction, transportation, petroleum, electronics, and computer industries.

The mission of the Mechanical Engineering program is to produce graduates who have acquired the knowledge and abilities commensurate with the requirements of beginning engineering practice and who have received a broad education that will enable them to become leaders in industry, the profession, and the community. Graduates of the program will be prepared for life-long learning, including graduate studies.

To carry out this mission, the Mechanical Engineering faculty, with input from other constituencies, has established the following objectives:

- 1) To provide a strong foundation in the fundamentals of mathematics, basic sciences, and engineering sciences.
- 2) To develop the students' ability to apply modern engineering analytical and experimental methods and tools.
- 3) To develop the students' skill in the engineering approach to problem solving together with their ability to understand and design systems and devices.
- 4) To achieve a complementary education in the arts, humanities, and social/behavioral sciences.



- 5) To emphasize oral and written communications and teamwork.  
6) To promote engineering ethics and professionalism.

The Mechanical Engineering curriculum is designed to meet these objectives. The basic courses in mechanics, materials, thermodynamics, electronics, and dynamics prepare the student for the comprehensive design courses in the senior year culminating in major design experiences in energy systems and in mechanical systems. Throughout the curriculum there is significant use of the computer to solve realistic engineering problems. All entering ME juniors will be required to have a portable computer that they will use interactively in the classroom. The ME laboratory sequence stresses the planning, design, and operation of experiments. The curriculum also places a strong emphasis on technical communications. Senior technical electives allow the student to study particular areas of interest.

The Mechanical Engineering Program is accredited under the EC 2000 criteria by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore MD 21202-4012. Telephone: 410-347-7700

### University Core

English Composition (6 hours)

- EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

- EN 1113 English Comp II\* **or**  
EN 1173 Accelerated Comp II\* **or**  
EN 1193 Honors Comp II\*

Public Speaking (3 hours)

- CO 1003 Fundamentals of Public Speaking **or**  
CO 1093 Honors Oral Communication

Mathematics (9 hours)

See Major Core

Science (6 hours)

See Major Core

Humanities (6 hours)

See University Core

Fine Arts (3 hours)

See University Core

Social/Behavioral Sciences (6 hours)

See University Core

### Major Core

Math and Basic Science

- MA 1713 Calculus I\*  
MA 1723 Calculus II\*  
MA 2733 Calculus III\*  
MA 2743 Calculus IV\*  
MA 3113 Intro to Linear Algebra\*  
MA 3253 Differential Equations I\*  
CH 1213 Fundamentals of Chemistry  
CH 1211 Investigations in Chemistry  
CH 1223 Fundamentals of Chemistry\*  
PH 2213 Physics I\*  
PH 2223 Physics II  
PH 2233 Physics III

Engineering Topics

- EG 1143 Graphic Communication  
IE 3913 Engineering Economy  
EM 2413 Engineering Mechanics I\*  
EM 2433 Engineering Mechanics II\*  
EM 3313 Mechanics of Fluids\*  
ECE 3183 Electrical Engineering Systems  
EM 3213 Mechanics of Materials  
ECE 3283 Electronics  
ECE 3281 Electronics Lab  
ME 3513 Thermodynamics I\*  
ME 3523 Thermodynamics II  
ME 1111 Introduction to Mechanical Engineering  
ME 3113 Engineering Analysis\*  
ME 3313 Heat Transfer  
ME 3423 Mechanics of Machinery  
ME 3701 Experimental Orientation  
ME 3403 Materials and Manufacturing in Design  
ME 4721 Experimental Techniques I  
ME 4731 Experimental Techniques II  
ME 3613 System Dynamics  
ME 4403 Machine Design  
ME 4443 Mechanical Systems Design  
ME 4643 Automation of Mechanical Systems  
ME 4333 Energy Systems Design  
6 hours Technical Elective\*\*

General Topics

- GE 3513 Technical Writing\*\*\*  
3 hours Elective\*\*\*\*

Computer Literacy

Fulfilled in Engineering Topics courses

### Total hours needed for major: 132

\* A grade of C or better must be made in these courses.

\*\* Mechanical Engineering technical electives are listed on the web at [www.me.msstate.edu/academics/techeesch.html](http://www.me.msstate.edu/academics/techeesch.html). Substitutions may be approved by writing the ME Dept.

\*\*\* Fulfills Jr./Sr. Writing Requirement.

\*\*\*\* See advisor.

## Software Engineering

( See listings under Department of Computer Science)

## COLLEGE of FOREST RESOURCES

G. Sam Foster, Dean  
107 Thompson Hall  
Telephone: (662) 325-2953  
Bob L. Karr, Associate Dean  
111 Thompson Hall  
Telephone: (662) 325-2793  
Mailing Address: Box 9680  
Mississippi State, MS 39762-9680

### GENERAL INFORMATION

**Organization.** The College of Forest Resources is composed of the Departments of Forestry, Wildlife and Fisheries, and Forest Products. The College is a part of the Division of Agriculture, Forestry, and Veterinary Medicine.

Graduates receive a Bachelor of Science degree in Forest Resources, with majors in Forestry, Forest Products, or Wildlife and Fisheries Science. Within the Forest Products major there are curricular options in Wood Industries Management, Building Supply Operations, Forest Products Technology, Forest Products Marketing, Industrial Environmental Operations and Wood Materials Science. Within the Forestry major, there are curricular options in Forest Management, Environmental Conservation, Urban Forestry, and Wildlife Management. Each of these curricular options in the forestry major meet the requirements for the professional degree in Forestry. Within the Wildlife and Fisheries Science major there are curricular options in Aquaculture Science, Wildlife Science, Fisheries Science, Wildlife Law Enforcement, and Wildlife Pre-Veterinary Medicine. Each of these curricular options meet requirements for the professional degree in Wildlife by the Wildlife Society or in Fisheries by the American Fisheries Society. Each department offers courses leading to the Master's and Ph.D. degrees.

**Graduate Programs in Forest Resources.** Graduate programs leading to a M.S. or Ph.D. degree are offered in the College of Forest Resources: Departments of Forestry, Forest Products, and Wildlife and Fisheries. For detailed information about graduate study, see the Graduate Bulletin. Copies of the Graduate Bulletin may be secured by writing to Office of Graduate Studies, P.O. Box G, Mississippi State, Mississippi 39762-5726.

**Research.** Research is conducted in the Forest and Wildlife Research Center by the Department of Forestry, the Department of Wildlife and Fisheries, and the Department of Forest Products. Professors are employed jointly as professors and research scientists. There is opportunity for students to gain valuable experience by working part-time as research assistants. The experimental work often provides valuable demonstrations for the teaching program. Forestry-related research also is conducted in other departments of the University, and there are cooperative research arrangements with federal agencies, notably the Southern Forest Experiment Station of the U. S. Forest Service, which operates re-

search programs with headquarters at four locations in Mississippi, including the Inventory and Analysis Research Unit and the Forest Tree Seed Research Unit located in Thompson Hall at Mississippi State University. Wildlife and Fisheries research also is conducted by a Cooperative Unit of the U.S. Fish and Wildlife Service which is located in Thompson Hall. All these activities enrich the teaching program.

**Facilities.** The classrooms and many of the laboratories and offices of the College of Forest Resources are located in Thompson Hall, a large modern building with excellent facilities for teaching and research in forestry and wildlife and fisheries. Other laboratories and offices are in the Mississippi Forest Products Laboratory, Forest Resources Laboratory, and the Fisheries Laboratory. The facilities used for research— instruments, apparatus, literature, experimental forests, greenhouses, captive animal facilities and fish ponds—also are valuable in the teaching program. The John W. Starr Memorial Forest of 8,000 acres is conveniently close to the campus, intensively managed, and regularly used for demonstration as well as research. Adjoining the Starr Memorial Forest are the Noxubee National Wildlife Refuge and the Tombigbee National Forest, which are also used for student instruction and research. The Sharp Forest, 1,600 acres in Tishomingo County, was given to the University by Jack, Mollie, and Kate Sharp to be used for forest resources education and research with part of the income designated for scholarships.

**Entrance Requirements.** Transfer students with less than 2.0 quality point average may not be admitted automatically to the College of Forest Resources' degree programs. Permission to enroll will be granted on an individual basis, depending on specific circumstances and the requirements of the major for which the student seeks to enroll.

**Graduation Requirements.** Course and hour requirements for graduation are those shown in the individual programs of study. Each student is expected to become familiar with the courses and the prerequisites in the curriculum in which he/she expects to graduate and to be responsible for meeting those requirements. He/she is expected to consult a faculty advisor each semester prior to pre-registration. Two semesters prior to graduation, students must complete a graduation audit in the Office of Student Services.

The final 32 semester credit hours must be completed in residence on the Mississippi State University campus.

### Major in FORESTRY (FO)

Major Advisor: Dr. Keith L. Belli  
Office: 327 Thompson Hall

**The Objective.** The objective of the Forestry major is to prepare its graduates for professional, science-based careers in the management and use of forested ecosystems. By combining courses offering a broad general education with specialized professional courses, the curriculum of the Forestry major is designed to produce professionally competent graduates who have appropriate development in interpersonal relations, written and oral communications, cultural understanding, environmental awareness, and in professional ethics.

**Accreditation:** The educational programs in Forest Management, Wildlife Management, Urban Forestry, and Environmental Conservation leading to the first professional degree in Forestry at Mississippi State University are accredited by the Society of American Foresters (SAF). SAF is the specialized accrediting body recognized by the Commission of Recognition of Post-secondary Accreditation and the U.S. Department of Education as the accrediting agency for forestry education in the United States.

**The Major:** The core curriculum of the Forestry Major is comprised of specifically selected and intentionally designed courses which must be completed satisfactorily by each student who intends to graduate in this major. In addition to completing the core curriculum of the Forestry Major, each student must complete one of the four academic Options for specialized study offered by the Forestry Major. The four academic options are Forest Management, Wildlife Management, Urban Forestry, and Environmental Conservation. Each of the four options is an integral part of the Forestry Major and is accredited by the SAF. Graduates of the major are qualified to become a Registered Forester in Mississippi after completing an examination for this purpose from the Board of Registration for Foresters in Mississippi.

The Forestry Major is designed for completion in four academic years plus an eight-week summer field program between the sophomore and junior years. Completion of the special summer field program is prerequisite to enrollment in junior/senior level professional courses in the Forestry Major and students should plan their schedules accordingly. Correspondence courses are not accepted toward the forestry degree.

**Transfer Students:** Transfer students are encouraged to enter the Forestry Major at MSU in the Spring semester of their sophomore year to complete their academic programs in the normal four-year period of study. Transfer students should be aware that course work taken elsewhere may not be accepted toward a degree in forestry. Only course work that is determined by the Forestry Department to be equivalent to required course work will be accepted. In addition, no course work will be considered for acceptance unless a grade of C or better has been earned.

**Degree Requirements:** In addition to University and College requirements students must attain a minimum grade of C on the Forestry Major core courses taught within the College of Forest Resources. These courses are: FO 1101, FO 2213, FO 3012, FO 3014, FO 3102, FO 3101, FO 4121, FO

4123, FO 4113, FO 4221, FO 4223, FO 4213, FO 4231, FO 4232, FO 4311, FO 4312, FO 4321, FO 4323, FO 4413, FO 4421, FO 4423, WF 3031 and WF 4153.

### FORESTRY

#### University Core

English Composition (6 hours)	
EN 1103	English Comp I <b>or</b>
EN 1163	Accelerated Comp I <b>or</b>
EN 1183	Honors Comp I
EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Mathematics (6 hours)	
MA 1313	College Algebra <b>or</b> equivalent
ST 2113	Statistics for Beh Sciences
Natural Science (9 hours)	
CH 1043	General Chemistry I
BIO 1203	Plant Biology
CH 1053	General Chemistry II
Humanities (6 hours)	
See University CORE	
Fine Arts (3 hours)	
See University CORE	
Social/Behavioral Sciences (6 hours)	
AEC 2713	Intro Agric Economics <b>or</b>
EC 2113	Intro to Macroeconomics <b>or</b>
EC 2123	Intro to Microeconomics
FO 4113	Forest Resource Economics

Note: Pre-requisites and co-requisites are strictly enforced in the College of Forest Resources. It is the student's responsibility to be aware of pre-requisites and co-requisites for all courses required in his or her program; pre-requisites and co-requisites are identified in the Course Description section of this Bulletin.

#### Major Core

BIO 1504	Principles of Zoology
CH 1051	Experimental Chemistry Lab
EPP 3124	Forest Pest Management
FO 1101	Forest Resources Survey
FO 2211	Dendrology Lab
FO 2212	Dendrology
FO 2213	Forest Measurements
FO 3012	Intro to Forest Communities
FO 3015	Forest Description and Analysis
FO 3101	Computer Appl for Forest Resources Lab*
FO 3102	Computer Appl for Forest Resources*
FO 4121	Principles of Silviculture Lab
FO 4123	Principles of Silviculture
FO 4213	Forest Biometrics
FO 4221	Practice of Silviculture Lab
FO 4223	Practice of Silviculture
FO 4231	Forest Operations and Harvesting Lab
FO 4233	Forest Operations and Harvesting
FO 4311	Spatial Tech in Nat Res Mgt Lab
FO 4313	Spatial Tech in Nat Res Mgt
FO 4321	Forest Resources Management Lab
FO 4323	Forest Resources Management
FO 4413	Natural Resources Policy
FO 4421	Professional Practices Lab
FO 4423	Professional Practice
PSS 3303	Soils
PSS 3301	Soils Lab
WF 3031	Intro to Wildlife and Fisheries Practices
WF 4153	Prin of Wildlife Conservation & Mgt

Choose one of the following Junior/Senior writing courses:

AIS 3203	Intro Tech Writing in Agricom <b>or</b>
MGT 3213	Organizational Comm <b>or</b>
EN 3103	Writing for Engineers <b>or</b>
BIO 3013	Prof Writing for Biologists

\*Satisfies Computer Literacy requirement.

**The Options:** The academic options within the Forestry major are offered to encourage the student to design a program with the assistance of a faculty advisor that will fit his or her interests and aptitudes. Each option has been constructed by substituting restricted, or in some cases directed, electives for what otherwise would appear as Business, Science, Free, or Professional electives in the major. Options are intended to provide opportunities for the student to focus beyond the foundation education provided by the core curriculum of the Forestry major. Options are not intended to provide the depth of study demanded by a separate major.

#### Forest Management Option

Option Advisor: Dr. Scott Roberts  
351 Thompson Hall

This option provides the basic education necessary to enter the profession of forestry with the Bachelor of Science degree, yet permits a wide choice of electives. The student may elect courses in almost any subject of interest, if prerequisites are met; however, credit toward the degree will not be allowed for remedial courses, nor for courses covering substantially the same material as courses already passed, or covering only part of the subject matter of required courses.

Faculty advisors are assigned to assist students in selecting electives to meet their personal objectives. A program of study leading to a double degree in forestry and business is available.

Courses to be taken in addition to those in the core curriculum of the Forestry Major are as follows:

PH 1113	General Physics <b>or</b>	9 hours	Business/Science Electives
PH 2213	Physics I	9 hours	Professional Electives
		6 hours	Free Electives
FP 1103	Wood Tech and Products		
FO 3113	Forest Recreation Management		

**Total hours: 139**

Professional electives and Business Science electives are chosen from a list approved by the Department of Forestry.

#### Wildlife Management Option

Option Advisor: Dr. Emily Schultz  
315 Thompson Hall

Undergraduate students who wish to prepare for careers in wildlife management may do so by completing the Wildlife Management Option of the Forestry Major. This option is designed for forestry students who intend to pursue careers that emphasize wildlife management within the context of multiple-use management of forest land. In addition, the Wildlife Management Option prepares the student for a number of wildlife management positions and fulfills the course requirements for certification as a Wildlife Biologist by the Wildlife Society. Graduates of this option may undertake graduate studies in forestry or wildlife ecology and related areas.

Courses to be taken in addition to those in the core curriculum of the Major are as follows:

BIO 3524	Biology of Vertebrates	WF 3131	Appl Aqu and Terr Ecology Lab
BIO 4203	Taxonomy of Spermatophytes	WF 3133	Appl Aqu and Terr Ecology
BIO 4523	Mammalogy	WF 4243	Wildlife Techniques
BIO 4543	Ornithology	6 hours	Professional Electives
FO 4353	Forestry Law		
WF 1213	Intro to Wildlife & Fish Conserv		

**Total hours: 138**

Professional electives are chosen from a list approved by the Department of Forestry.

**Environmental Conservation Option**

Option Advisor: Dr. Keith Belli  
327 Thompson Hall

Students interested in careers dealing with complex environmental issues in the realm of forest resource management may prepare themselves through this option. All students within this option are required to take the following seven courses:

PH 1113 General Physics **or**  
PH 2213 Physics I

FO 3113 Forest Recreation Management  
BIO 3104 Ecology  
FO 3123 Forest Ecology & Global Environment  
FO 4452 Remote Sensing  
FO 4451 Remote Sensing Lab  
17 hrs Emphasis Electives - See Emphasis listings that follow

**Social Emphasis**

AN 4173 Environment and Society  
CO 2203 Negotiations  
FO 4353 Forestry Law  
PHI 1123 Intro to Ethics  
PHI 4143 Philosophy of Science  
SO 4703 Population Problems

**Science Emphasis**

BIO 2503 Environmental Quality  
BIO 4203 Taxonomy of Spermatophytes  
BIO 4213 Plant Ecology  
FO 4463 Forest Hydrology  
WF 1213 Intro to Wildlife and Fish Conservation  
WF 3133/3131 Applied Aq and Terr Ecol with Lab  
WF 4222 Limnology  
WF 4221 Limnology Lab  
WF 4383 Wetlands Ecology and Mgt

**EMPHASIS ELECTIVES****Land Emphasis**

FO 4472/4471 GIS Nat Res Mgt and Lab  
FO 4483 Forest Soils  
GG 1113 Survey of Earth Sciences I  
GG 1111 Earth Sciences I Lab  
GG 3133 Intro Environ Geology  
GR 1114 Physical Geography  
GR 3113 Conservation of Natural Res  
GR 4603 Climatology  
PSS 4333 Soil Conservation and Use

**Total hours: 139**

An entire block of courses in a particular area of emphasis may be chosen, or a sampling of each may be recommended. Other courses may be substituted with approval by the Department of Forestry.

**Urban Forestry Option**

Course Requirements  
(34 credit hours)

Option Advisor: Dr. Stephen Grado  
357 Thompson Hall

This option addresses an emerging need for the management of trees in out towns and cities. Urban foresters manage trees along city streets, in municipal parks, private wood lots, and utility right-of-ways. Employers include federal, state, and municipal governments, private consultants, and industry.

Courses to be taken in addition to those in the core curriculum of the major are as follows:

FO 3113 Forest Recreation Management	PSS 3473 Plant Materials II
FO 4353 Forestry Law	PSS 4353 Arbor and Landscape Maintenance
FO 4471 GIS Nat Res Management Lab	REM 3253 Real Property Evaluation
FO 4472 GIS Nat Res Management	REM 3333 Principles of Real Estate
LA 3623 Urban Planning	3 hours Urban Forestry Elective
PS 1113 American Government	
PS 4703 Prin Public Administration	
PSS 2423 Plant Materials I	

**Total hours: 139**

Urban Forestry Elective is chosen from a list approved by the Department of Forestry.

**Major in Wildlife and Fisheries Science (WF)**

Major Advisor: Dr. Bruce D. Leopold  
Office: 109 Thompson Hall

Sustainable management of the diverse wildlife and fisheries resources by private and public sectors, requires knowledgeable and technically competent people. The Department of Wildlife and Fisheries offers a major in Wildlife and Fisheries Science designed to provide students with a curriculum that has foundations in biology, ecology, natural resources management, social sciences, computer science, and other contemporary educational needs for natural resources professionals. Five options are available to students: wildlife science, fisheries science, aquaculture science, wildlife law enforcement, and wildlife pre-veterinary medicine. The curriculum will prepare students for employment in natural resource professions within private, federal, or state wildlife, fisheries, or aquaculture sectors. Additionally, the curriculum ensures that students are eligible for employment upon graduation, as well as providing the academic background required for further post-graduate studies.

Students may proceed towards a DVM degree by taking a fifth option entitled the wildlife pre-veterinary program. Students, upon completing the course work outlined in the wildlife pre-veterinary program, may apply for admission into the College of Veterinary Medicine. Alternatively, students accepted into the early entry veterinary program, upon completing the wildlife pre-veterinary program satisfactorily, may be admitted into the College of Veterinary Medicine. There also is an opportunity to pursue, with an additional year, a M.S. degree in Veterinary or Wildlife Science. Upon successful completion of course requirements, the student will graduate with a B.S. degree in Wildlife and Fisheries Science, pre-veterinary option at the end of the fourth year, and a DVM at the end of the seventh year.

Course work in the Wildlife Science and the Wildlife Law Enforcement options, and the wildlife Pre-veterinary program, enables students to fulfill the course work requirements necessary to become Certified Wildlife Biologists by The Wildlife Society. The Fisheries Science option exceeds requirements for certification by the American Fisheries Society as an Associate Fisheries Scientist.

The Wildlife and Fisheries Science Major is designed for completion within 4 years, but some students may not complete the program in that time because of course scheduling or other constraints. Students also are required to enroll in a 2-week summer session prior to the junior year (except for the wildlife pre-veterinary program students). Transfer students are encouraged to begin course work at MSU by the end of their sophomore year to enable graduation in 4 years. Transfer students should be aware that course work taken elsewhere may not be accepted toward a degree in Wildlife and Fisheries Science. Only course work determined by the Wildlife and Fisheries Department to be equivalent to required course work will be accepted. Additionally, no course work will be considered for acceptance unless a grade of C or better has been earned. Correspondence courses will not be accepted toward the Wildlife and Fisheries Science Degree. Transfer students with a grade point average less than or equal to 2.0 may not be admitted automatically into the Wildlife and Fisheries major. Permission to enroll on specific circumstances and the requirements of the Wildlife and Fisheries Science major. In addition to University and College requirements, students must maintain a C or better in Wildlife and Fisheries Science major core courses taught within the College of Forest Resources. These courses are option specific. Students in the wildlife pre-veterinary program, interested in pursuing the Veterinary Medicine program, must meet all admission requirements by the College of Veterinary Medicine.

**University Core**

English Composition (6 hours)

EN 1103 English Comp I **or**  
EN 1163 Accelerated Comp I **or**  
EN 1183 Honors Comp I

EN 1113	English Comp II <b>or</b>
EN 1173	Accelerated Comp II <b>or</b>
EN 1193	Honors Comp II
Public Speaking (3 hours)	
CO 1003	Fundamentals of Public Speaking <b>or</b>
CO 1093	Honors Oral Communication
Mathematics (6 hours)	
MA 1613	Calc for Bus & Life Sciences <b>or</b>
MA 1713	Calculus I
ST 3113	Intro to Inference
Natural Science (9 hours)	
BIO 1203	Plant Biology
BIO 1504	Principles of Zoology
See options for additional requirements	
Humanities (6 hours)	
See options for requirements	
Fine Arts (3 hours)	
See University CORE	
Social/Behavioral Sciences (6 hours)	
AEC 2713	Intro Agric Economics <b>or</b>
EC 2113	Intro to Macroeconomics <b>or</b>
EC 2123	Intro to Microeconomics
3 hours	Social Science Elective - See option for requirement

Note: Pre-requisites and co-requisites are strictly enforced in the College of Forest Resources. It is the student's responsibility to be aware of pre-requisites and co-requisites for all courses required in his of her program; pre-requisites and co-requisites are identified in the Course Description section of this Bulletin.

<b>Major Core</b>	
AIS 3203	Intro to Tech Writ in Agricomm <b>or</b>
MGT 3213	Organizational Comm <b>or</b>
EN 3103	Writing for Engineers <b>or</b>
BIO 3013	Prof Writing for Biologists
CS 1013	Basic Computer Concepts <b>or</b>
AEC 4513	Adv Micro Software Use in Ag or Eco <b>or</b>
BIS 1013	Intro to Bus Computer Systems <b>or</b>
FO 3102/3101	Comp Appl for Forest Res
WF 1101	Wildlife and Fisheries Profession
PSS 3303	Soils
PSS 3301	Soils Lab
BIO 2203	Dendrology
BIO 3524	Biology of Vertebrates
WF 3133	Appl Aquatic and Terr Ecology
WF 3131	Appl Aquatic and Terr Ecology
3 hours	Policy Elective*
WF 4473	Wildlife and Fisheries Practices

**The Options:** The academic options within the Wildlife and Fisheries Science Major are offered to enable students to develop an academic background that is suited to their professional career goals. Each option has been developed to supplement the core curriculum which provides the basis for the wildlife and fisheries science major, regardless of the area of expertise desired by the student.

### Aquaculture Science Option

Course Requirements  
Option Advisor: Dr. John A. Hargreaves  
Room 229 Thompson Hall

This option is designed for undergraduate students who wish to pursue one or more advanced degrees (M.S., Ph.D.), as it prepares students for graduate school. This option is intended for serious, academically strong students, who maintain an A-B grade record (GPA 3.0), which is the minimum required for admittance into graduate schools. Undergraduate students who wish to seek employment within the aquaculture industry, particularly as farm managers, upon graduation should consider the aquaculture option within the Department of Agricultural and Biological Engineering.

Courses to be taken in addition to those of the core curriculum include:

6 hours	Humanities Elective - See University CORE	3 hours	Nutrition/Physiology/Anatomy Elective
3 hours	Social Science Elective - See University CORE	6 hours	Business/Marketing or Ethics Elective
CH 1043	General Chemistry	WF 4222	Limnology
CH 1053	General Chemistry II	WF 4221	Limnology Lab
CH 1051	Experimental Chemistry Lab	3 hours	Human Resource Mgt Elective
WF 1213	Intro to Wildlife & Fish Conservation	9 hours	Professional Electives
CH 2503	Elementary Org Chemistry	WF 4372	Water Quality Management
CH 2501	Elementary Org Chemistry Lab	WF 4371	Water Quality Management Lab
BIO 3304	General Microbiology	WF 4183	Finfish Aquaculture
BIO 3103	Genetics	3 hours	Natural Resource Management Elective
FO 3012	Intro to Forest Communities	3 hours	Free Elective
BIO 4513	Ichthyology	CVM 4134	Aqu Animal Health Management
FO 4123	Principles of Silviculture		
FO 4121	Principles of Silviculture Lab		
WF 3141	Wildlife and Fisheries Seminar		

**Total hours: 136**

All electives are chosen from a list approved by the Department of Wildlife and Fisheries.

### Fisheries Science Option

Course Requirements  
Option Advisor: Dr. Donald C. Jackson  
Room 215 Thompson Hall

This option is designed for undergraduate students who intend to seek employment immediately following receipt of a B.S. degree or pursue advanced degrees (M.S., Ph.D.) and wish to obtain positions in fisheries science and management. Employment is possible in state and federal agencies, with limited positions in private industry. A M.S. degree will allow an individual to be more competitive, particularly if an advanced position and a higher salary is desired. This option is intended for serious, academically strong students who can maintain an A-B record (GPA 3.0) which is the minimum required for admittance into graduate schools.

Courses to be taken in addition to those of the core curriculum include:

PH 1113	General Physics <b>or</b>	FO 4123	Principles of Silviculture
PH 2213	Physics I	FO4121	Prin of Silviculture Lab
6 hours	Humanities Elective - see University CORE	WF 4253	GIS & GPS in WF Management
3 hours	Social Science Elective	WF 3141	Wildlife and Fisheries Seminar
CH 1043	General Chemistry	BIO 3304	General Microbiology
CH 1053	General Chemistry	WF 4222	Limnology
CH 1051	Experimental Chemistry Lab	WF 4221	Limnology Lab
WF 1213	Intro to Wildlife & Fish Conservation	3 hours	Human Resources Elective
CH 2503	Elem Org Chemistry	WF 4133	Fisheries Science
CH 2501	Elem Org Chemistry Lab	WF 4313	Fisheries Management
BIO 3514	Invertebrate Zoology	6 hours	Natural Resources Management Elective
BIO 3103	Genetics I	3 hours	Nutrition/Physiology/Anatomy Elective
FO 3012	Intro to Forest Communities	6 hours	Professional Elective
BIO 4513	Ichthyology		

**Total hours: 136**

All electives are chosen a list approved by the Department of Wildlife and Fisheries.

### Wildlife Law Enforcement Option

Option Advisor: Dr. Kevin M. Hunt  
Room 223 Thompson Hall

This option is designed for undergraduate students who wish to seek employment immediately following receipt of a B.S. degree and wish to obtain positions related to natural resource law enforcement (e.g., conservation officers, park rangers) or wildlife managers (not biologists). Students may, upon graduation within this option, continue on to graduate school in the human dimensions-law enforcement or wildlife arenas. Starting salaries, on average, would be less than with a M.S. degree.

Courses to be taken in addition to those of the core curriculum include:

3 hours	Humanities Elective	3 hours	Human Resource Mgt Elective
3 hours	Ethics Elective	6 hours	Natural Resources Mgt Elective
SO 1003	Intro to Sociology	COR 3103	Criminal Justice Systems
PSY 1013	General Psychology	3 hours	Professional Elective
CH 1043	General Chemistry	BIO 4203	Taxon of Spermaophytes
CH 1053	General Chemistry	BIO 4523	Mammalogy
CH 1051	Experimental Chemistry Lab	WF 4153	Prin Wildlife Conservation and Mgt
WF 1213	Intro to Wildlife & Fisheries Conservation	BIO 4543	Ornithology
3 hours	Nutrition/Physiology/ Anatomy Elective	SO 3603	Criminology
PHI 3113	Philosophy of Law	WF 4243	Wildlife Techniques
FO 3012	Intro to Forest Communities	WF 4253	GIS & GPS in WF Management
FO 4123	Principles of Silviculture	3 hours	Policy Elective
FO 4121	Principles of Silviculture Lab	3 hours	Free Elective
SO 4173	Environment and Safety		
WF 3141	Wildlife and Fisheries Seminar		

**Total hours: 136**

All electives are chosen a list approved by the Department of Wildlife and Fisheries.

### Wildlife Science Option

Option Advisor: Dr. Richard M. Kaminski  
Room 249 Thompson Hall

This option is designed for undergraduate students who wish to pursue one or more advanced degrees (M.S., Ph.D), as it prepares students for graduate school. Employment following this B.S. program is possible, but competition for jobs may be keen. This option is intended for serious, academically strong students, who maintain a A-B grade record (GPA 3.0), which is the minimum required for admittance into most graduate schools.

Courses to be taken in addition to those of the core curriculum include:

6 hours	Humanities Electives	4 hours	Entomology Elective
3 hours	Social Science Elective	BIO 4203	Taxonomy of Spermatophytes
CH 1043	General Chemistry	FO 4223	Practices of Silviculture
CH 1053	General Chemistry	FO 4221	Practices of Silviculture Lab
CH 1051	Experimental Chemistry Lab	3 hours	Human Resource Management Elective
WF 1213	Intro to Wildlife & Fish Conservation	BIO 4523	Mammalogy
CH 2503	Elem Org Chemistry	WF 4153	Prin Wildlife Conservation and Mgt
CH 2501	Elem Org Chemistry Lab	3 hours	Natural Resources Management Elective
WF 4253	GIS & GPS in WF Management	6 hours	Professional Electives
BIO 3103	Genetics	3 hours	Free Elective
FO 3012	Intro to Forest Communities	BIO 4543	Ornithology
FO 4123	Principles of Silviculture	WF 4243	Wildlife Techniques
FO 4121	Prin of Silviculture Lab	3 hours	Policy Elective
WF 3141	Wildlife and Fisheries Seminar		
3 hours	Nutrition/Physiology/Anatomy Elective		

**Total hours: 136**

All electives are chosen a list approved by the Department of Wildlife and Fisheries.

### Wildlife Pre-Veterinary Option

Program Advisor: Dr. Bruce D. Leopold  
Room 109 Thompson Hall

Integration of wildlife science and management and veterinary medicine has become increasingly important with current diverse uses of wildlife and other renewable natural resources. As wildlife habitats dwindle and animal populations become more compressed, biologists must increase their attention towards disease diagnosis and abatement. This integrated curriculum allows the students to pursue a 3 + 1 undergraduate degree program in Wildlife and Fisheries Science for three years and then, if accepted, matriculate into the Veterinary Medicine program in College of Veterinary Medicine. Successful graduates of this program are qualified to apply for Certified Wildlife Biologist with The Wildlife Society as well as being qualified to practice veterinary medicine.

PH 1113	General Physics <b>or</b>	BCH 3613	Elementary Biochemistry
PH 2213	Physics I	BIO 3103	Genetics
6 hours	Humanities Elective -See University CORE	BIO 4203	Taxonomy of Spermatophytes
3 hours	Social Science Elective		Wildlife/Veterinary Internship
CH 1213	Investigations in Chemistry	BIO 4523	Mammalogy
CH 1211	Investigations in Chemistry Lab	WF 4153	Prin Wildlife Conservation & Mgt
CH 1223	Fundamentals of Chemistry II	WF 4323	Wildlife Nutrition and Physiology
CH 1221	Experimental Chemistry Lab	BIO 4543	Ornithology
BIO 2103	Cell Biology	WF 4243	Wildlife Techniques
BIO 3304	General Microbiology	3 hours	Policy Elective
CH 4513	Organic Chemistry		
CH 4511	Organic Chemistry Lab		

**Total hours: 114**

All electives are chosen a list approved by the Department of Wildlife and Fisheries.

Mississippi State requires a minimum of 128 hours for the undergraduate degree. Therefore, to qualify for the B.S. degree in Wildlife and Fisheries Science/ Wildlife Pre-veterinary Option a student must complete the 3 years of the above listed undergraduate course work (114 hours) in the wildlife pre-veterinary program and also successfully complete the first year in the Veterinary Medicine curriculum.

### Major in FOREST PRODUCTS (FP)

Major Advisor: Professor H. Michael Barnes, Room 5102  
Office: Forest Products Laboratory, 100 Blackjack Road

The mission of the Department of Forest Products is to enhance the intellectual, cultural, social, and professional development of its students by providing them with knowledge and skills needed to utilize and conserve diverse forest resources effectively. In this regard, the department's primary teaching responsibility is to provide the high quality educational opportunities necessary to adequately prepare students for professional and scientific careers in forest products and wood science.

The State Legislature established the Forest Products Laboratory (FPL) in 1964. Its establishment culminated work by a group of Mississippians to obtain a research facility to serve the technical needs of forest-based industries and uses of wood products in the state. Five laboratory/office buildings and other special purpose buildings, with a combined floor space in excess of 54,000 square feet, comprise the Laboratory's physical plant. These buildings house the analytical and testing equipment, pilot plants, and support facilities required for a comprehensive research program involving wood and wood products.

Forest Products' graduates work in industry, higher education, trade associations and government agencies across the country. Graduates find employment in four broad areas: manufacturing, marketing, technical service, and research. Career preparation in the manufacturing and marketing of wood products and furniture, for positions requiring high level skills with a broad technical background, in processing operations, such as drying, furniture manufacturing, gluing, machining, preservation, and chemical modification is available. All Forest Products students learn the biological, physical, chemical, and mechanical properties of wood as raw material.

Forest Products provides strong career opportunities in materials science, engineering, materials processing, process design and control, marketing and business. The processing of wood into a multitude of products requires professional wood scientists and technologists trained to understand the nature of this complex material and markets in which it is sold.

The Forest Products curriculum is accredited by the Society of Wood Science and Technology. Double degree programs with the College of Business and Industry are available.

A student enrolled in the forest products major must complete a specified core curriculum and one of six academic options within the major:

- |  |                               |
|--|-------------------------------|
| 1. Wood Industries Management          | 5. Forest Products Technology |
| 2. Building and Supply Operations      | 6. Wood Materials Science     |
| 3. Forest Products Marketing           |                               |
| 4. Industrial Environmental Operations |                               |

### University Core

English Composition (6 hours)

- |         |                              |
|---------|------------------------------|
| EN 1103 | English Comp I <b>or</b>     |
| EN 1163 | Accelerated Comp I <b>or</b> |
| EN 1183 | Honors Comp I                |

- |         |                               |
|---------|-------------------------------|
| EN 1113 | English Comp II <b>or</b>     |
| EN 1173 | Accelerated Comp II <b>or</b> |
| EN 1193 | Honors Comp II                |

Public Speaking (3 hours)

- |         |   |
|---------|---|
| CO 1003 | Fundamentals of Public Speaking <b>or</b> |
| CO 1093 | Honors Oral Communication                 |

Mathematics (6 hours)

See major for specific requirements

Natural Science (9 hours)

- |                                       |               |
|---------------------------------------|---------------|
| BIO 1203                              | Plant Biology |
| See major for additional requirements |               |

Humanities (6 hours)

See University CORE and Option for requirements

Fine Arts (3 hours)

See University CORE

Social/Behavioral Sciences (6 hours)

Professional electives, computer elective, and Forest Product electives are chosen from a list approved by the Department of Forest Products.

- |                               |                                    |
|-------------------------------|------------------------------------|
| EC 2113                       | Intro to Macroeconomics <i>and</i> |
| EC 2123                       | Intro to Microeconomics <b>or</b>  |
| AEC 2713                      | Intro to Agriculture Economics     |
| For either EC 2113 or EC 2123 |                                    |

Note: Pre-requisites and co-requisites are strictly enforced in the College of Forest Resources. It is the student's responsibility to be aware of pre-requisites and co-requisites for all courses required in his of her program; pre-requisites and co-requisites are identified in the Course Description section of this Bulletin.

### Major Core

- |          |                               |
|----------|-------------------------------|
| BIO 2203 | Dendrology                    |
| FP 1103  | Wood Tech and Products        |
| FP 3012  | Intro to Forest Industries    |
| FP 4013  | Wood Anatomy                  |
| FP 4323  | Physical Properties of Wood   |
| FP 4023  | Wood Chemistry                |
| FP 4423  | Mechanical Properties of Wood |
| FP 4413  | Professional Practice         |
| FP 4313  | Environmental Principles      |
| 9 hours  | Forest Products Electives     |
| 3 hours  | Professional Electives        |
| 5 hours  | Free Elective                 |
| 3 hours  | Computer Elective             |

### Building Supply Operations Option

This option is designed to provide Forest Products students with the background to pursue careers as managers of building supplies and distribution centers. The course work is designed to train the students in the technical aspects of building material capability, interaction, and service life. Students will also receive broad training in areas such as accounting, inventory management, promotion and sales techniques. Students that successfully complete this option will have career opportunities in small town building supplies as well as major chain stores with opportunity for advancement. The selection of a Marketing minor course for 3 SCH of Professional Elective will yield a MKT minor for students pursuing this emphasis. Course requirements include:

- |              |  |                         |                                    |
|--------------|--|-------------------------|------------------------------------|
| MA 1613      | Calculus for Bus and Life Sciences <b>or</b> | CH 1043                 | General Chemistry                  |
| MA 1713      | Calculus                                     | CH 1053                 | General Chemistry II               |
| BQA 2113     | Business Statistics Methods I <b>or</b>      | CH 1051                 | Experimental Chemistry Lab         |
| IE 4613      | Engineering Statistics I <b>or</b>           | MGT 3114                | Principles of Management           |
| ST 3113      | Introduction to Statistical Inference        | ACC 2013                | Principles of Financial Accounting |
| BIS 1013     | Intro to Bus Computer Systems <b>or</b>      | MKT 3013                | Principles of Marketing            |
| CS 1013      | Basic Computer Concepts <b>or</b>            | FP 4253                 | Quan Meth Forest Prod and Furn     |
| AEC 4513     | Adv Micro Software Use in Agr Eco <b>or</b>  | FP 4353                 | Forest Prod Marketing              |
| BIS 3233     | Intro to Mgt Information Systems <b>or</b>   | MKT 4413                | Consumer Behavior                  |
| FO 3102/3101 | Comp Appl for Forest Resources               | TR 3313                 | Principles of Transportation       |
| MGT 3213     | Organizational Comm <b>or</b>                | MKT 4813                | Marketing Management               |
| AIS 3203     | Intro to Tech Writ in Agricom <b>or</b>      | MKT 3213                | Retailing                          |
| EN 3103      | Writing for Engineers <b>or</b>              | TR 4313                 | Physical Distribution Mgt          |
| BIO 3013     | Prof Writing for Biologists                  | 3 hours                 | Professional Elective              |
| PH 1113      | General Physics <b>or</b>                    | <b>Total hours: 128</b> |                                    |
| PH 2213      | Physics I                                    |                         |                                    |

Professional electives are chosen from a list approved by the Department of Forest Products.

### Forest Products Marketing Option

This option is designed to meet the needs of industry for individuals with knowledge and training in basic sciences, business management and marketing, as well as, a thorough knowledge in wood properties and manufacturing technologies. Students completing this curriculum will earn a marketing minor and can expect to begin their careers in technical and managerial positions in sales, marketing, distribution of forest products, and product devel-

opment. Employment opportunities are varied with students finding positions in industry, government agencies, and associations serving the wood-based industry. Today, marketing increasingly is being recognized and utilized as a key element in the overall business strategy of forest products firms. Students entering this field find themselves with skills to rapidly advance beyond entry level position. Students pursuing this emphasis will receive a MKT minor. Course requirements include:

MA 1613	Calculus for Bus and Life Science <b>or</b>	PH 2213	Physics I
MA 1713	Calculus	CH 1043	General Chemistry
BQA 2113	Business Statistics Methods I <b>or</b>	CH 1053	General Chemistry II
IE 4613	Engineering Statistics I <b>or</b>	CH 1051	Experimental Chemistry Lab
ST 3113	Intro to Statistical Inference	MGT 3114	Principles of Management
BIS 1013	Intro to Bus Computer Systems <b>or</b>	ACC 2013	Principles of Financial Accounting
CS 1013	Basic Computer Concepts <b>or</b>	MKT 3013	Principles of Marketing
AEC 4513	Adv Micro Software Use in Agr Eco <b>or</b>	FP 4253	Quan Meth Forest Prod and Furn
BIS 3233	Intro to Mgt Information Systems <b>or</b>	FP 4353	Forest Prod Marketing
FO 3102/3101	Comp Appl for Forest Resources	MKT 4413	Consumer Analysis and Behavior
MGT 3213	Organizational Comm <b>or</b>	3 hours	Professional Elective
AIS 3203	Intro to Tech Writ in Agricomm <b>or</b>	MKT 4813	Marketing Management
EN 3103	Prof Writing for Engineers <b>or</b>	9 hours	Marketing Electives
BIO 3013	Prof Writing for Biologists		
PH 1113	General Physics <b>or</b>		

**Total hours: 128**

The professional elective and marketing electives are chosen from a list approved by the Department of Forest Products.

### Forest Products Technology Option

This option is designed to train students for manufacturing management positions with forest products manufacturing firms. The course work provides students with a complete forest products industry background combined with industrial technology skills to allow application of these skills on the factory floor. Students who complete this curriculum will begin their careers in manufacturing management in a production environment. The addition of management and business courses provide students with skills to advance rapidly beyond the entry levels. Course requirements include:

MA 1613	Calculus for Bus and Life Science <b>or</b>	PH 2213	Physics I
MA 1713	Calculus	CH 1043	General Chemistry
BQA 2113	Business Statistics Methods I <b>or</b>	CH 1053	General Chemistry II
IE 4613	Engineering Statistics I <b>or</b>	CH 1051	Experimental Chemistry Lab
ST 3113	Intro to Statistical Inference	MGT 3114	Principles of Management
BIS 1013	Intro to Bus Computer Systems <b>or</b>	ACC 1203	Basic Industrial Accounting
CS 1013	Basic Computer Concepts <b>or</b>	FP 4233	Furniture Production II
AEC 4513	Adv Micro Software Use in Agr Eco <b>or</b>	TKI 1813	Basic Ind Electricity and Electronics
BIS 3233	Intro to Mgt Information Systems <b>or</b>	FP 4223	Furniture Production I
FO 3102/3101	Comp Appl for Forest Resources	TKI 3103	Adv Ind Elec and Elec
MGT 3213	Organizational Comm <b>or</b>	TKI 3083	Job Analysis and Rel Ind Proc
AIS 3203	Intro to Tech Writ in Agricomm <b>or</b>	TKI 4103	Ind Control System
EN 3103	Prof Writing for Engineers <b>or</b>	TKI 4223	Quality Assurance
BIO 3013	Prof Writing for Biologists	TKI 4203	Automated System
PH 1113	General Physics <b>or</b>	TKI 3363	Motion and Time Study

**Total hours: 128**

### Industrial Environmental Operations Option

This option is designed to provide Forest Products students with the background to pursue careers as environmental managers within the forest products industry. Environmental compliance is a major component of all forest products manufacturers and industry has requested that prospective employees become knowledgeable in this field. Students that successfully complete this option will have career opportunities in virtually any forest products manufacturing operation with opportunity for advancements. The course work is designed to provide students with a basic understanding of environmental science, policy and practices and to complement the knowledge and experience received in the areas of forest products science and technology and business management. Courses have been selected from such diverse fields as economics, management, forestry and sociology. The selection of an Environmental Science certificate course for 3 SCH of Professional Elective will yield a Certificate in Environmental Science for students pursuing this emphasis. Course requirements include:

MA 1613	Calculus for Bus and Life Science <b>or</b>	PH 2213	Physics I
MA 1713	Calculus	CH 1043	General Chemistry
BQA 2113	Business Statistics Methods I <b>or</b>	CH 1053	General Chemistry II
IE 4613	Engineering Statistics I <b>or</b>	CH 1051	Experimental Chemistry Lab
ST 3113	Intro to Statistical Inference	MGT 3114	Principles of Management
BIS 1013	Intro to Bus Computer Systems <b>or</b>	ENS 2102	Intro to Environmental Science
CS 1013	Basic Computer Concepts <b>or</b>	1 hour	Free Elective
AEC 4513	Adv Micro Software Use in Agr Eco <b>or</b>	FO 3123	Forest Ecology and Environment
BIS 3233	Intro to Mgt Information Systems <b>or</b>	SO 4173	Environment and Society
FO 3102/3101	Comp Appl for Forest Resources	FO 4353	Forestry Law
MGT 3213	Organizational Comm <b>or</b>	FO 4413	Natural Resource Policy
AIS 3203	Intro to Tech Writ in Agricomm <b>or</b>	ENS 4102	Practicum
EN 3103	Prof Writing for Engineers <b>or</b>	6 hours	Forest Products Electives
BIO 3013	Prof Writing for Biologists	7 hours	Professional Electives
PH 1113	General Physics <b>or</b>		

**Total hours: 128**

The professional electives and forest product electives are chosen from a list approved by the Department of Forest Products

### Wood Industries Management Option

This option is designed to provide Forest Products students with the background to pursue careers in the forest products and allied industries. The curriculum is multidisciplinary; provides a knowledge of the basic sciences, the social sciences, business, and wood science; and provides extensive training in the major wood processing operations. The abundant elective hours in this curriculum are chosen in consultation with an advisor in the Department of Forest Products and allow the student to tailor a program of study yielding a minor in General Business, Management, or other areas of business. Double degree programs with the College of Business & Industry are also available. Course requirements include:

MA 1613	Calculus for Bus and Life Science <b>or</b>	BQA 2113	Business Statistics Methods I <b>or</b>
MA 1713	Calculus	IE 4613	Engineering Statistics I <b>or</b>



ST 3113	Intro to Statistical Inference	PH 1113	General Physics <b>or</b>
BIS 1013	Intro to Bus Computer Systems <b>or</b>	PH 2213	Physics I
CS 1013	Basic Computer Concepts <b>or</b>	CH 1043	General Chemistry
AEC 4513	Adv Micro Software Use in Agr Eco <b>or</b>	CH 1053	General Chemistry II
BIS 3233	Intro to Mgt Information Systems <b>or</b>	CH 1051	Experimental Chemistry Lab
FO 3102/3101	Comp Appl for Forest Resources	MGT 3114	Principles of Management
MGT 3213	Organizational Comm <b>or</b>	24 hours	Professional Electives
AIS 3203	Intro to Tech Writ in Agricom <b>or</b>	6 hours	Forest Product Electives
EN 3103	Prof Writing for Engineers <b>or</b>		
BIO 3013	Prof Writing for Biologists		

**Total hours: 128**

The professional electives and forest product electives are chosen from a list approved by the Department of Forest Products.

#### Wood Materials Science Option

This option is designed to provide Forest Products students with the background to pursue careers in research and development or to continue their education at the graduate level. The curriculum is multi-disciplinary; provides a knowledge of the basic sciences, mathematics, and provides a strong background in wood materials science. By judicious selection of elective, students may obtain a minor in various fields. The professional electives are chosen in consultation with an advisor from a list approved by the Department of Forest Products. Course requirements include:

EN 3103	Writing for Engineers <b>or</b>	CH 1221	Investigations in Chemistry
MGT 3213	Organizational Comm <b>or</b>	PH 2213	Physics I
AIS 3203	Intro to Tech Writ in Agricom <b>or</b>	PH 2223	Physics II
BIO 3013	Prof Writing for Biologists	CH 4513	Organic Chemistry
MA 1713	Calculus	CH 4511	Organic Chemistry Lab
MA 1723	Calculus II	EM 2413	Engr Mechanics
IE 4613	Engineering Statistics	12 hours	Professional Electives
CS 1213	Computer Program with Fortran	1 hours	Free Elective
CH 1213	Fundamentals of Chemistry	6 hours	Forest Product Electives
CH 1211	Investigations in Chemistry		
CH 1223	Fundamentals of Chemistry		

**Total of hours: 128**

The professional electives and forest product electives are chosen from a list approved by the Department of Forest Products.

#### Forest Products Minor

A minor in Forest Products will provide non-major students with knowledge of wood, wood products and their use, and their importance to employers in many areas including construction, design, marketing and distribution, retail and wholesale management, sales, production, technical services and scientific fields such as chemistry, engineering, and industrial technology. This minor in Forest Products will also provide non-major students an excellent background for entering a graduate degree program in Forest Products. Academic advising is available in the Department of Forest Products at Mississippi State University located at the Forest Products Laboratory, 100 Blackjack Road. A minimum of 18 hours is required to obtain a Forest Products minor. Some choices require others as prerequisites.

##### Required Courses

FP 1103	Wood Technology
FP 4013	Wood Anatomy

##### Choose any four of the following:

FP 4113	Adhesives and Finishes for Wood	FP 4253	Quantitative Methods in FP & Furn
FP 4123	Lumber Manufacturing	FP 4313	Environmental Principles
FP 4143	Composite Wood Products	FP 4323	Physical Properties of Wood
FP 4213	Wood Deterioration & Preserv	FP 4253	Forest Products Marketing
FP 4223	Furniture Production I	FP 4423	Mechanical Properties of Wood
FP 4233	Furniture Production II		

## COLLEGE of VETERINARY MEDICINE

John U. Thomson, Dean  
Office: College of Veterinary Medicine (Wise Center)  
Telephone: (662) 325-3432  
Mailing Address: Box 9825, Mississippi State, MS 39762-9825

### GENERAL INFORMATION

The College of Veterinary Medicine was established in 1974 by an act of the Mississippi Legislature. The first class was admitted during the 1977-78 academic year and graduated in May, 1981.

The permanent College facilities, completed in the fall of 1981, include the learning resources center, the animal health center, and the research facility. College programs, faculty, students, and staff are located in these facilities.

The primary objective of the College is to serve the needs of Mississippi. In quest of this objective, the College will provide training in the sciences required for a career in veterinary medicine. The professional curriculum focuses on the skills of the veterinary practitioner who will serve the animal-owning public of Mississippi.

Students seeking a career in veterinary medicine should acquire a sound foundation in the biological and physical sciences and a general knowledge of the humanities in high school and college. Because of the increasing use of information technology in Veterinary Medicine, students are strongly encouraged to acquire familiarity with computers. They must have a demonstrated aptitude for scientific study, and, in addition, experience with animals. An awareness of the requirements and characteristics of the practice of veterinary medicine is desirable in reaching a mature decision to seek a career in veterinary medicine.

### EARLY ENTRY PROGRAM for the COLLEGE of VETERINARY MEDICINE

The Early Entry Program is offered on a competitive basis to high-school seniors who have demonstrated exceptional academic achievement. Applications are available by October 1<sup>st</sup> of each year and are due for return by January 15<sup>th</sup>. Applications may be obtained by contacting the Office of Student Affairs, College of Veterinary Medicine at 662-325-1278 or [coats@cvm.msstate.edu](mailto:coats@cvm.msstate.edu). A printable application is available at [cvm.msstate.edu](http://cvm.msstate.edu) under the "Admissions" link.

The Program is designed so an individual has the opportunity to obtain both a B.S. degree and a D.V.M. degree in a seven-year period. Those accepted into the Early Entry Program are preaccepted into the professional program at the College of Veterinary Medicine contingent upon their maintaining a 3.35 quality point average with no grade lower than a C in required courses throughout their college career and providing documentation of no less than 480 hours veterinary experience.

### TRADITIONAL ADMISSION REQUIREMENTS

Admission to the professional program of the College of Veterinary Medicine is limited, competitive, and selective. To qualify for admission, a candidate must have satisfactorily completed 67 prerequisite semester hours to include the core curriculum requirements of Mississippi State University. In order for scores earned from CLEP and Advanced Placement to be considered, students must meet score standards established by Mississippi State University.

Subjects*	Semester Credits
ENGLISH COMPOSITION .....	6
EN 1103 English Composition 1	
EN 1113 English Composition 2	
PUBLIC SPEAKING .....	3
CO 1003 Fundamentals of Public Speaking	
MATHEMATICS .....	6
MA 1313 College Algebra	
MA 1323 Trigonometry	
BIOLOGICAL SCIENCES .....	14
BIO 1504 Principles of Zoology (Vertebrate) w/Laboratory	
BIO 3304 General Microbiology	
BIO 2103 Cell Biology	
PO 3103 Genetics	
PHYSICAL SCIENCES .....	18
CH 1211 Investigations in Chemistry (Laboratory)	
CH 1213 Fundamentals of Chemistry	
CH 1221 Investigations in Chemistry (Laboratory)	
CH 1223 Fundamentals of Chemistry	
CH 4511 Organic Chemistry (Laboratory)	
CH 4513 Organic Chemistry	
BCH 3613 Elementary Biochemistry	
PH 1113 General Physics w/Laboratory	
NUTRITION .....	5

NTR 4115 Nutrition**	
Humanities/Fine Arts/Social Sciences/Behavioral Sciences***	15
TOTAL .....	67

\* All course numbers and names correspond to Mississippi State University's course listing.

\*\* A 3-5 hour introduction to principles of nutrition and the properties and functions of essential nutrients (carbohydrates, proteins, fats, minerals, vitamins, and water) may be substituted.

\*\*\* Courses that satisfy the University Core Curriculum meet these requirements

An applicant to the College of Veterinary Medicine may not use military science or correspondence courses to meet the stated course requirements.

An applicant must have a grade point average of 3.0 or above (based on a 4.0 scale) in all required sciences (including mathematics), and a cumulative grade point average of at least 2.8 in all undergraduate courses to apply. A grade below "C" is not acceptable in any required course.

### ADMISSION PROCEDURE

Applications are accepted through October 1 each year for the upcoming academic year. Admissions procedures take place in spring, with new students beginning classes at the beginning of the first summer session. All applicants apply electronically through the Veterinary Medical College Application Service (VMCAS) at [www.aavmc.org](http://www.aavmc.org). Applications are available online in August each year.

Further information may be obtained from:

Office of Student Affairs  
College of Veterinary Medicine  
Mississippi State University  
Box 6100  
Mississippi State, Mississippi 39762-6100  
662-325-1278  
[coats@cvm.msstate.edu](mailto:coats@cvm.msstate.edu)

### Problem-based learning

The professional curriculum is divided into two phases; each 5 semesters in length.

Phase 1 (DVM1 and DVM2 years) is conducted in a Problem-based learning format. Problem-based learning is an educational strategy designed to maximize active student participation in the learning process, foster student problem solving and self-education skills, enhance student self-assessment, increase student communication skills, and improve student abilities to access and utilize information resources.

Problem-based learning involves the use of clinical problems (or cases) to create an active, student-centered learning environment. Each problem stimulates small group discussion and student research of the basic and clinical sciences relevant to that problem. Since most (if not all) problems require an interdisciplinary approach, students learn the basic and clinical sciences in an integrated fashion.

Student exploration of each problem is stimulated and monitored by faculty participation as facilitators of small group discussion sessions. In each discussion session students are presented with information about the problem (case) to be studied. The student groups go through a process of determining:

1. what the history and clinical data reveal about the case (interpreting the relevant facts),
2. what they hypothesize might be causing the problem (differential rule out list),
3. what additional information they need regarding the patient (diagnostic or therapeutic plans), and
4. what additional veterinary medical information they must study to understand the problem (learning issues).

Students leave each discussion session with a list of learning issues which they must explore and be prepared to apply to the problem at the next discussion session. At each subsequent discussion session additional patient (problem) data is provided to the student and the process repeats.

Group discussions and independent student research (literature and textbook reading) become the core of the educational strategy. For each defined learning issue a decision is made regarding the most appropriate educational strategy. Lectures and/or laboratories are scheduled as student-planned correlates or supplements to the problem-based learning cases. Students are encouraged to contact faculty experts, if needed. The resultant student schedule is a blend of small group discussion sessions,

lectures, and laboratories with a significant increase in opportunities to explore special interests.

**DVM1 Courses**

DVM1 Summer  
 CVM 5026-5036 Basic Concepts in Veterinary Medicine .....12  
 DVM1 Fall  
 CVM 5049-5059 Principles of Veterinary Anatomy and Physiology .....18  
 DVM1 Spring  
 CVM 5013 Fundamentals of Clinical Science 1 .....3  
 CVM 5003 Professional Development .....3  
 CVM 5069-5079 Introduction to the Interdisciplinary Study of Veterinary Medicine .....18  
 Total Credit Hours .....54

**DVM2 COURSES**

DVM2 Fall  
 CVM 5129-5139 Interdisciplinary Study of Veterinary Medicine ...18  
 DVM2 Spring  
 CVM 5149-5159 Advanced Interdisciplinary Study of Veterinary Medicine .....18  
 CVM 5113 Fundamentals of Chemical Science 2 .....3  
 CVM 5103 Professional Development II .....3  
 Total Credit Hours .....42

**Clinical and Elective**

Phase 2, (DVM3 and DVM4 years) is conducted in a clinical and elective format. Students participate in ten required clinical rotations of two to six weeks duration each. In these rotations students actively participate in the clinical diagnosis and management of patients admitted to the Animal Health Center.

During the fourth year (DVM4) students have 9 months of elective options. The options include elective clinical rotations, externship experiences, small group or discussion based courses, and special problems (directed individual study) opportunities. In essence, each student, working closely with a faculty advisor, designs a schedule which most uniquely meets the student's needs and career preferences.

Conducted in an experiential-learning mode, the clinical rotations and many of the electives continue to make the student responsible for his or her own education. The clinical cases or elective courses provide the environment for continued student growth and development. Students must be mature and responsible learners to obtain the maximum benefit from these courses.

**DVM3 COURSES**

**Services and Practices**

DVM3  
 CVM 5214 Laboratory Services .....4  
 CVM 5224 Radiology .....4  
 CVM 5234 Anesthesiology .....4  
 CVM 5246 Community Practice .....4  
 CVM 5256 Small Animal Surgery .....6  
 CVM 5266 Equine Medicine and Surgery .....6

**ANIMAL HEALTH TECHNOLOGY  
 (Veterinary Technology)**

**Program**

The Veterinary Technology Program is a one-plus-one program offered by the Agriculture Department of Hinds Community College and the College of Veterinary Medicine of Mississippi State University. The first year of the program is taught at Hinds Community College, and the second year is taught at Mississippi State University's College of Veterinary Medicine. After successfully completing the program the student will be awarded an Associate of applied Science Degree from Hinds Community College. The program is structured to provide the successful graduate optimum employment opportunities in Veterinary Technology careers.

**Admission Requirements**

**Hinds Community College**

Individuals entering the first year of the Veterinary Technology Program must:

1. Meet admission requirements for Hinds Community College
2. Submit a completed application
3. Interview with members of the Veterinary Technology Program Advisory Committee.

Admission is granted to individuals who successfully complete the above requirements.

**MSU—College of Veterinary Medicine**

CVM 5276 Food Animal Medicine and Surgery .....6  
 Total Credit Hours .....36

**DVM4 COURSES**

DVM4  
 CVM 5000 Directed Individual Study in Veterinary Medicine 1 ...1-6  
 CVM 5302 Professional Development IV\* .....4  
 CVM 5310 Small Animal Emergency and Critical Care Medicine\* 4-6  
 CVM 5386 Small Animal Internal Medicine\* .....6  
 CVM 5392 Pharmacy\* .....2  
 CVM 5420 Advanced Rotation in Radiology .....1-6  
 CVM 5430 Advanced Rotation in Anesthesiology .....1-6  
 CVM 5444 Clinical Small Animal Practice .....4  
 CVM 5454 Advanced Rotation in Small Animal Surgery .....4  
 CVM 5464 Advanced Rotation in Equine Medicine & Surgery .....4  
 CVM 5474 Advanced Rotation in Food Animal Practice .....4  
 CVM 5484 Advanced Rotation in Sm An Internal Medicine .....4  
 CVM 5510 Animal Industry Externship 1 .....1-6  
 CVM 5520 Animal Industry Externship 2 .....1-6  
 CVM 5530 Animal Industry Externship 3 .....1-6  
 CVM 5540 Animal Industry Externship 4 .....1-6  
 CVM 5550 Animal Industry Externship 5 .....1-6  
 CVM 5560 Advanced Clinical Rotation 1 (ACR 1) .....1-6  
 CVM 5570 Advanced Clinical Rotation 2 (ACR 2) .....1-6  
 CVM 5580 Advanced Clinical Rotation 3 (ARC 3) .....1-6  
 CVM 5604 Professional Development III .....4  
 CVM 5612 Laboratory Animal Medicine .....2  
 CVM 5622 Veterinary Diagnostic Toxicology .....2  
 CVM 5632 Advanced Large Animal Techniques .....2  
 CVM 5644 Applied Gross Anatomy .....4  
 CVM 5654 Applied Veterinary Parasitology .....4  
 CVM 5662 Clinical Neurology .....2  
 CVM 5672 Veterinary Denistry .....2  
 CVM 5682 Veterinary Ophthalmology .....2  
 CVM 5694 Veterinary Cytology .....4  
 CVM 5704 Veterinary Practice Management .....4  
 CVM 5714 Advanced Small Animal Dermatology .....4  
 CVM 5724 Bovine Nutrition & Records Analysis .....4  
 CVM 5740 Wildlife Care & Management .....1-6  
 CVM 5744 Wildlife Medical Care & Rehabilitation .....4  
 CVM 5754 Advanced Small Animal Surgery .....4  
 CVM 5764 Advanced Equine Reproduction .....4  
 CVM 5774 Food Animal Production Medicine .....4  
 CVM 5784 Clinical Behavioral Medicine .....4  
 CVM 5794 Clinical Cardiology .....4  
 CVM 5804 Client Relations .....4  
 CVM 5824 Diagnostic Ultrasound .....4  
 CVM 5834 Advanced Anesthesia Techniques .....4  
 CVM 5844 Clinical Pharmacology .....4  
 CVM 5854 Aquarium Health Management .....4  
 CVM 5862 Equine Lameness .....2  
 CVM 5990 Spec Topics in Veterinary Medicine 1 .....1-6  
 Total Credit Hours Required .....48

\* Required

Students must take 30-36 hours of electives during their senior year. Electives can be selected from the above listed CVM courses or from University courses upon advisor's approval.

To be accepted for the second year of the Veterinary Technology Program, a student must:

1. Complete the first year at Hinds with a minimum GPA of 2.0 and no grade less than "C" in any technical course.
2. Be recommended by the Director of the Veterinary Technology Program at Hinds Community College.

Applications are available from Veterinary Technology Program Director, Hinds Community College, Raymond, MS 39154-0999.

**Animal Health Technology Program  
 (Veterinary Technology)**

Year 2  
 CVM 2104 Small Animal Health Techniques .....4  
 CVM 2114 Small Animal Medical Techniques .....4  
 CVM 2124 Equine Medical Techniques .....4  
 CVM 2134 Food Animal Medical Techniques .....4  
 CVM 2144 Surgical Techniques .....4  
 CVM 2154 Anesthetic Techniques .....4  
 CVM 2164 Radiologic and Imaging Techniques .....4  
 CVM 2172 Technical Laboratory Services .....2  
 CVM 2184 Techniques with Laboratory Animals .....4  
 CVM 2204 Pharmacy Techniques .....4

CVM 2212 Necropsy Techniques .....	2	CVM 2322 Veterinary Business Procedures .....	2
CVM 2302 Animal Health Technical Procedures .....	2	Total .....	48
CVM 2314 Laboratory Animal Care .....	4		

### GRADUATE PROGRAM

The College of Veterinary Medicine at Mississippi State University offers advanced graduate study leading to Master's and PhD degrees with emphasis in infectious diseases, toxicology, pharmacology, and pathology. Master's and PhD programs are administered under the Research Program of the College. The multidisciplinary composition of the Veterinary Science Program provides the unique opportunity for training in food animals with special emphasis in aquaculture and poultry. Specialized training encompassing molecular biotechnology, microbiology, immunology, virology, physiology, toxicology, pathology and biochemical approaches to solving basic and applied biomedical problems is offered. Master's and Ph.D. degrees are offered in Veterinary Medical Science and Ph.D. degree in Toxicology is also offered. A non thesis Master's option in Veterinary Medical Science is also offered with emphasis in food animal production medicine, i.e. dairy, beef, swine, poultry and aquaculture.

Research interests of the faculty include pathogenesis of viral and bacterial and environmental diseases, comparative and developmental immunology, biochemical characterization of parasites, and xenobiotic contamination of animal tissues. The multidisciplinary approach of the program is strengthened by active collaboration of faculty members with other institutional units including the Departments of Animal and Dairy Sciences, Biochemistry, Poultry Science, Wildlife and Fisheries, and Biological Science. The Veterinary Medical Science Graduate Program is firmly committed to providing trained graduates who can serve as leaders in management and research for the food animal industry.

For additional information about the Graduate Program, contact the Graduate Coordinator, Box 9825, Mississippi State, Mississippi 39762, telephone 662-325-1417.

## OFFICE of ACADEMIC AFFAIRS

Office: 608 Allen Hall  
662-325-3742  
P.O. Box BQ  
Mississippi State, MS 39759

### ENVIRONMENTAL SCIENCES CERTIFICATE PROGRAM

Any study of the human environment is by nature multi-disciplinary. Therefore, an undergraduate certificate program in Environmental Sciences (ENS) that can also serve as an academic minor has been established to serve a large student population from a variety of disciplinary majors. The intent of this program is to provide a certification track whereby a student in any given undergraduate major may strategically select elective courses within their normal program of study to additionally satisfy the requirements for a certificate and minor in Environmental Sciences. Certification is also available for the nontraditional student seeking further professional credentials for career development.

Due to the multi-disciplinary nature of the program, it structurally resides and is administered within the Office of Academic Affairs, outside of any particular college. A program coordinator is appointed by the Provost to advise Environmental Sciences students and assist departmental advisors. It is also the coordinators responsibility to perform the necessary transcript audits and formally authorize the certificates and minors.

To assist the ENS coordinator and provide a mechanism for regular review, a faculty oversight committee has been formed. The committee is composed of at least six faculty members including the ENS advisor and represents a cross-section of environmental disciplines.

For further information and enrollment forms, please contact the ENS program coordinator:

Dr. Gary B. Ervin  
Department of Biological Sciences  
213 Harned Hall  
662-325-3120  
ge14@biology.msstate.edu

### Environmental Sciences Certificate

General Requirements:

A total of 22 semester hours are required in the following four component areas with at least six hours from the social sciences and humanities and six hours from the natural sciences. Courses typically serve as electives within any traditional disciplinary major. No more than two courses can be double-counted between the ENS certificate and the student's academic major. Courses marked in **BOLD** are required of all students. It is recommended that ENS 2102 be taken as the entry-level course.

Introductory (2 hours)

#### **ENS 2102 Intro to Environmental Science**

Social Sciences and Humanities (6-12 hours)

BL 4263 Environmental Law  
SO 4173 Environment and Society  
PS 4743 Environmental Policy  
AEC 3233 Intro Environmental Economics and Policy  
AEC 4233 Advanced Topics in Environmental Economics  
GG 4523 Coastal Environments  
GR 3113 Conservation of Natural Resources  
SO 4703 Population Problems and Processes  
FO 4413 Natural Resources Policy  
FP 4313 Environmental Principles  
WF 4463 Human Dimensions of Fish & Wildlife Mgt

Capstone (2 hours)

#### **ENS 4102 Practicum (with seminar)**

Natural Sciences (6-12 hours)

BIO 2503 Environmental Quality  
BIO 3104 Ecology  
BIO 3114 Marine Biology  
BO 4213 Plant Ecology

BIO 4404 Environmental Microbiology  
CE 3824 Environmental Engineering  
CE 4843 Advance Sanitary Analysis  
CE 4873 Water and Wastewater Treatment  
CE 4893 Hazardous Waste Management  
CH 4303 Environmental Chemistry  
CHE 4613 Air Pollution Control Design  
CHE 4623 Hazardous Waste Incineration  
CVM 4513 Environmental Toxicology  
FO 3123 Forest Ecology and Global Environment  
GG 3613 Water Resources  
GG 3133 Intro Environmental Geology  
GR 4943 Air Pollution Meteorology  
GR 4613 Applied Climatology  
GR 4813 Natural Hazards and Processes  
PSS 3303 Soils  
PSS 4313 Soil Microbiology  
PSS 4333 Soil Conservation and Land Use  
ABE 3303 Biosystems Environment I  
ABE 4312 Biosystems Environment II

## INTERDISCIPLINARY STUDIES

### BACHELOR of SCIENCE in INTERDISCIPLINARY STUDIES

The Bachelor of Science in Interdisciplinary Studies is a university-wide degree coordinated through the Office of Academic Affairs by the Interdisciplinary Studies Committee. This multi-discipline academic program is appropriate for students motivated by specific interests not recognized in traditional majors and is not intended to compete with existing programs. All University requirements, including 32 hours of upper division course work and a year's residence, must be met for graduation.

The Bachelor of Science in Interdisciplinary Studies is intended to allow students maximum flexibility to custom-design a curriculum to their personal and career goals. Such a program of study must assure depth of study as well as breadth. Therefore, it must insure that students take at least 36 upper-division hours in the areas they have chosen for emphasis and that they select a minimum of 12 hours in each of three areas or 18 hours in two. Emphasis areas must be selected from at least two colleges. University core curriculum requirement (45 hours) must be met in addition to a general studies core of 15 hours.

To insure coherence in the program, the student must construct and explain in writing the rationale for the interdisciplinary studies program's direct relationship to the student's personal and career goals. Each student will be required to find advisors in the academic disciplines who will agree to sponsor the student in drawing up the proposed curriculum, formulating the rationale, and presenting the case orally and in writing to the Interdisciplinary Studies Committee. This should be done prior to the senior year.

The student, along with at least one sponsor, must meet with the Interdisciplinary Studies Committee to submit oral arguments and answer questions concerning the proposed program. If approved, the student may proceed with the curriculum. The Committee will meet during the fall, spring and summer semesters, and students must make written application by September 15, February 15 or May 15. Application for a degree must be submitted to the Office of the Registrar. For further information, contact:

The Office of Academic Affairs  
P.O. Box BQ or 608 Allen Hall Mail Stop 9723  
Mississippi State University  
Mississippi State, MS 39762 (662) 325-3742

**ACADEMIC ADVISING CENTER****UNDECLARED (UND)**

Director: Dr. David Boles

Coordinator: Wesley Ammon

Professional Academic Advisors: Jamie Inmon, Kay Nobles, Janet Odom, and Sandra Powe

Volunteer Advisors: The UAAC also utilizes the expertise of selected distinguished faculty members, staff, and MSU graduate students during peak preregistration periods to meet the needs of students served by the Center.

48 Magruder Street; Mail Stop 9729; Web site at <http://www.msstate.edu/dept/academic-advising>  
Telephone 662-325-4052; Fax 662-325-4026; P.O. Box 6117, Mississippi State, MS 39762.**UAAC Mission to UND students**

The University Academic Advising Center was established to meet the needs of those students who have competing interest in more than one major area, as well as those who are uncertain of their career and educational goals. The professional staff and volunteers at the center offer one on one advising services to traditional and nontraditional undergraduate students and provide accurate information concerning specific curriculum requirements, university policies and procedures, campus resources and various programs of study. The center is committed to assisting students with the development of educational plans consistent with their life goals, objectives and abilities. Students normally remain UND "majors" for no more than two semesters during which time advisors recommend courses that meet basic core requirements in relation to "majors of interest" for each individual student.

UAAC advisors traditionally recommend that UND students enroll in 12-18 hours each fall and spring semester with careful considerations given to courses required in each student's majors of interest. It is the goal of the center to assist each UND student in enrolling in courses that satisfy the minimum core requirements for any major the student may later choose with respect to each department's right to specify more stringent requirements than the University as a whole. However, ultimate responsibility for taking the UAAC staff's advice rests with the student.

Visits to UAAC and responses to request for information through our web site are subject to staff availability and the center's priority responsibilities during MSU's designated preregistration and orientation periods. Otherwise, UAAC urges students to make appointments with advisors at the center to establish a plan of action. The University Academic Advising Center staff encourages all UND "majors" to utilize services offered by the Career Center, the Counseling Center, the Learning Center, Student Support Services and other support programs offered by various units at MSU.

## OFFICE of GRADUATE STUDIES

William A. Person, Interim Director  
 Office: 116 Allen Hall  
 Telephone: (662) 325-7400  
 Mailing Address: Box G, Mississippi State, MS 39762-5507

### ADMINISTRATION

The Office of Graduate Studies is the administrative unit responsible for providing graduate students with enrollment services and the management of graduate student records. The Office is responsible for processing graduate assistantship paperwork; publishing the Graduate Bulletin, the Guidelines for Preparing Dissertations and Theses, and the Graduate Assistant Handbook; coordinating the Graduate Teaching Assistant Workshop; monitoring academic performance; coordinating the Graduate Work Study/Plan of Compliance Assistantship Program; monitoring and coordinating the English as a Second Language (ESL) Program for international graduate students; and conducting degree audits of students as they complete their programs of study. The Office is guided by the academic policies established by the Graduate Council. The Director of the Office reports to the Office of the Provost and Vice President of Academic Affairs.

### DEGREES

1. MASTER of ARTS
  - a. The Master of Arts degree is offered in English, foreign languages, history, political science, applied anthropology, and economics.
  - b. Two plans for the Master of Arts degree are offered. They are designated as Plan One and Plan Two. Plan Two is offered at the option of the department. Plan One requires a minimum of thirty semester hours of graduate credits with at least twenty-four hours earned as course work and at least six hours earned as thesis. Plan Two requires a minimum of thirty semester hours of graduate-level course work.
  - c. A reading knowledge of one foreign language is required of students majoring in English literature, and history (thesis option only).
2. MASTER of SCIENCE
  - a. The Master of Science degree is offered in agricultural and extension education, the physical and biological sciences, the agricultural sciences, agricultural economics, architecture, business administration, computer science, specializations in education, engineering disciplines, geosciences, information systems, mathematics, mathematics (applied math), psychology, sociology, statistics, forestry, veterinary medical science, wildlife and fisheries science, forest products, and workforce education leadership.
  - b. Two plans for the Master of Science degree are offered. They are designated as Plan One and Plan Two. Plan two is offered at the option of the department. Plan One requires a minimum of thirty semester hours of graduate credits with at least twenty-four hours earned as course work and at least six hours earned as thesis. Plan Two requires a minimum of thirty semester hours of graduate-level course work.
  - c. A reading knowledge of one foreign language is required in the physical and biological sciences and in veterinary medical science.
3. MASTER of AGRICULTURE
  - a. The Master of Agriculture degree is offered in agricultural pest management.
  - b. A minimum of thirty semester hours is required.
4. MASTER of AGRIBUSINESS MANAGEMENT
  - a. The Master of Agribusiness Management is offered in Agribusiness Management.
  - b. Courses are divided between the department of Agricultural Economics and the College of Business and Industry.
5. MASTER of PROFESSIONAL ACCOUNTANCY
 

A minimum of thirty semester hours of course work in graduate credit business courses is required. Those hours must include a minimum of

  - a. Twenty-one semester hours of accounting, and
  - b. Nine semester hours of other related business courses.
6. MASTER of BUSINESS ADMINISTRATION
  - a. The Master of Business Administration, a graduate professional degree requiring 30 hours of graduate course work, is offered with majors in business administration and a thesis is not required.
7. MASTER of PUBLIC POLICY and ADMINISTRATION
  - a. The Master of Public Policy and Administration is a graduate professional degree with admission open to students who have earned at least a B average in a relevant undergraduate major.
  - b. Forty-two semester hours, including a three-credit internship and internship paper, are required. The internship and internship paper may be waived for students with significant and relevant work experience as determined by the Department of Political Science.
8. MASTER of FINE ARTS
  - a. The Master of Fine Arts is offered in electronic visualization with emphases in computer animation and multi-media.
  - b. The degree requires a minimum of 60 graduate credits with at least six hours earned as exhibition and thesis.
9. MASTER OF LANDSCAPE ARCHITECTURE
  - a. The Master of Landscape Architecture is offered in landscape architecture with three areas of concentration: watershed planning and management; landscape planning and management; and community based initiatives.
  - b. A minimum of 36 hours is required including a six hour thesis.
10. MASTER of TAXATION
  - a. The Master of Taxation is a graduate professional degree requiring 30 hours of graduate course work.
  - b. A thesis is not required.
11. EDUCATIONAL SPECIALIST DEGREE
 

The Educational Specialist degree is offered with areas of emphasis in agricultural and extension education, school administration, elementary education, counselor education, school psychology, secondary education, special education, and technology. These programs may be completed only after the student has received the master's degree from Mississippi State University or another recognized institution. A three-hour special problem or six-hour thesis is required, upon completion of which the student will be expected to pass an oral or written comprehensive examination or both.

The Educational Specialist degree is a planned program of a minimum of thirty semester hours above the master's degree, pursued under the direction of a major advisor. It is designed to broaden leadership training by providing courses in fields and disciplines that are supplementary to the basic study in the major field. At least twenty-one of the hours must be earned on the main campus or the Meridian Center. A student completing the degree must apply for the comprehensive examination in the office of his major advisor, with notification to the Director of the Office of Graduate Studies.
12. DOCTOR of PHILOSOPHY
 

The Doctor of Philosophy degree may be pursued in agricultural economics, agronomy, animal physiology, biological sciences, business administration, chemistry, computational engineering, computer engineering, computer science, education (emphasis in agricultural and extension education, and technology), educational psychology, electrical engineering, engineering (composite major), entomology, food science and technology, forest resources, history, horticulture, nutrition, plant pathology, sociology, veterinary medical science, weed science, mathematical sciences, molecular biology, cognitive science, environmental toxicology, applied economics, biomedical engineering, public policy and administration, and community college leadership
13. DOCTOR of EDUCATION
 

The Doctor of Education degree is offered in the College of Education with an area of program emphasis in agricultural and extension education, elementary education, secondary education, school administration, counselor education, or technology, college/postsecondary student counseling and personnel services, community college leadership, counselor education/student counseling and guidance services, curriculum and instruction, elementary/middle/secondary education administration, and secondary education.

### GRADUATE COURSES

Courses numbered 8000 or higher are for graduate students only. Courses numbered 6000 and 7000 may be taken for graduate credit if approved by the Director of Graduate Studies.

### GRADUATE BULLETIN

A Graduate Bulletin is published annually. It contains more detailed statements concerning the requirements for advanced degrees at Mississippi State University, as well as other pertinent information. To secure a copy, write to the Office of Office of Graduate Studies, P.O. Box G, Mississippi State, Mississippi 39762-5507. The Graduate Bulletin and additional information relative to graduate studies may be accessed at [www.msstate.edu/dept/grad](http://www.msstate.edu/dept/grad).

## CONTINUING EDUCATION

Clayborne D. Taylor, Dean  
 Offices: Memorial Hall  
 Telephone: (662) 325-3473  
 Mailing Address: P.O. Box 5247, Mississippi State, MS 39762

### THE DIVISION of CONTINUING EDUCATION

A member of the University Continuing Education Association (UCEA), Learning Resources Network (LERN), and Association for Continuing Higher Education (ACHE)

The purpose of the Division of Continuing Education is to extend the educational services of Mississippi State University to persons who have need of non-traditional educational programming.

The various programs of the Division of Continuing Education may be classified: credit and non-credit, independent study, and the American Language and Culture/English as a Second Language Program. The credit programs, graduate and undergraduate, are offered in cooperation with the various academic colleges and schools of the University. These curricula provide sound educational programs which give the participant general as well as specialized education. The non-credit category includes courses for self-enrichment, special conferences, workshops, lectures, institutes and consultant services for a variety of professional and community needs. Independent study includes credit courses at the high school and university levels offered through correspondence. All programs are planned for individuals who have varied backgrounds, different levels of maturity and limited time to further their education.

Available services include: off-campus classes, undergraduate and graduate; in-service programs; high-school and university level independent study courses; short courses, conferences and institutes; consulting services; campus offerings in cooperation with the various colleges of the University; and distance learning education opportunities.

### Education, Training and Development Credit Programs

Duke West, Manager  
 Offices: Memorial Hall  
 Telephone: (662) 325-267

Distance learning courses, programs and degrees are offered through different delivery methods including video tape, compressed video, streaming video, and Internet along with onsite instruction.

Courses are the same as those offered on the campus of Mississippi State University and are the responsibility of the regular staff of the University.

Students enrolling must meet the prescribed prerequisites of courses.

### Independent Study

Susan Brown, Coordinator  
 Offices: Memorial Hall  
 Telephone (662) 325-2627

Through its independent study program, the Division of Continuing Education makes available University courses to individuals who are interested in studying by correspondence, by video, or by the internet. Courses are the same as those offered on the campus of Mississippi State University and are the responsibility of the regular staff of the University.

Through independent study, students may earn credits toward a bachelor's degree from Mississippi State University or another institution of higher learning. Courses may be taken for self-improvement or for certification purposes. Special courses are offered in Public Health Education. Bulletins are available upon request.

High-school courses are also available through independent study. These courses may be taken for self-improvement, to complete a high-school education, or to meet college entrance requirements.

### English as a Second Language Program

Philip Bonfanti, Manager  
 Office: 46 Morgan Street  
 Telephone: (662) 325-2648 or 325-5002

The English as a Second Language Unit is an academic unit within the Division of Continuing Education. It offers an intensive English language program (non credit) for non-admitted students as well as English Language academic support courses (credit) for admitted MSU students.

In addition to English Language courses, the ESLC offers various other programs and services designed to promote the exchange of ideas and information with other countries, such as short-term group programs and the conversation partner program, developed to introduce ESL students to American college students.

The ESLC also provides teaching observations and practicums for students enrolled in the TESL Certificate program through the English Department; assists the Graduate Office in offering the international teaching assistants workshop; and is active in bringing international and cultural programming to the MSU and Starkville communities.

### Education, Training and Development

Noncredit Programs  
 Ben Rosenkrans, Manager  
 Offices: Memorial Hall  
 Telephone: (662) 325-2658

The Department of Professional Training and Development extends the service tradition of Mississippi State University by developing and presenting programs and activities in a flexible format to meet the educational and training needs of individuals, education, business, industry, and government throughout Mississippi and the Southeast. Its mission is to deliver resources of the University to clients in our rapidly changing society. Programs for a diverse clientele are managed by the following units:

#### Office for Environmental and Safety:

The Office for Environmental and Safety provides training in the area of environmental issues as well as health and safety. These programs ranging from on-campus seminars and conferences to in-house training services, are made available to state and regional businesses, industries, governmental agencies, municipalities and defense facilities who must comply with various EPA, DOT and OSHA regulations.

#### Office for Professional Development:

The Office for Professional Development specializes in providing education and training programs in professional environments where business men and women can master management and technical skills. These training programs provide convenient scheduling and direct skills practice along with expert guidance from university faculty or practicing executives and consultants. This office also contracts with school districts and other agencies in the state to provide in-service training to meet agency needs. The activities may be multi-disciplinary in nature.

#### Office for Personal Enrichment

The Office for Personal Enrichment offers individuals opportunities to participate in leisure classes that may improve quality of life or fulfill a need in career or personal development. An array of personal enrichment, non-credit courses and seminars are designed and planned to serve the needs of individuals in the community and throughout the state.

#### Office for Conference Coordination

The office for Conference Coordination offers professional services for planning and conducting conferences of local, state, regional, and national professional organizations and societies as well as government agencies and university units. All aspects of the conference can be handled from initial planning, brochure development, mailings, online registration, publishing proceedings, onsite registration and close-out accounting.

#### Continuing Education Units

The Division coordinates the Continuing Education (CEU) program for Mississippi State University, maintaining essential materials, data and mechanisms for CEU approval, record keeping and evaluation and CEU registration.

The CEU is a nationally recognized unit of measure used to accumulate a standardized, permanent record of an individual's participation in credit-free, continuing education programs conducted under responsible sponsorship, capable direction, and qualified instruction. One CEU is awarded per every ten contact hours of classroom instruction.

### Continuing Education Conference Center

Julie Joiner, Resource and Conference Facilitator  
 Office: Memorial Hall  
 Telephone: (662) 325-2634

The Continuing Education Conference Center provides a professional environment for meetings and for conferences of local, state, regional, and national professional organizations and societies as well as government agencies and University units. The center has a modern auditorium, well-equipped meeting rooms, satellite and teleconferencing capabilities, and outdoor patio with fountains and reserved parking.



## MERIDIAN CAMPUS

Dr. Dennis J. Mitchell, Interim Dean  
1000 Hwy 19 North  
Meridian, Mississippi 39307-5799  
Telephone (601) 484-0100  
In-Wats 1-800-824-5288

Mississippi State University-Meridian Campus is a regional, upper-division, degree-granting campus of Mississippi State University. Located in east-central Mississippi, the Meridian campus is non-residential and provides site-based credit and non-credit course work, as well as classes through distance learning using resident faculty, MSU-Starkville campus faculty, and part-time adjunct instructors.

A friendly atmosphere, personal attention, a convenient location, and a diverse student population flavor the educational experience at MSU-Meridian. Through the flexibility of day and evening classes at the MSU-Meridian Campus, both nontraditional adult students and traditional college-age students are able to continue employment, maintain important roles in family life, contribute to their communities, and still obtain a quality Mississippi State University education.

Mississippi State-Meridian serves as a proud symbol of the university's heritage as "the people's university" and to its commitment of providing quality higher education through the missions of learning, research, and service.

### Location

Mississippi State University-Meridian is located on a 26-acre campus at 1000 Highway 19 North in Meridian, Miss. It is easily accessible to residents of east Mississippi and west Alabama by a short drive northwest of Exit 150, off Interstate 20/59 in Meridian.

### Facilities

Overlooking a beautiful lake, the 60,000 square-foot, two-story complex is nestled among hardwoods and loblolly pines. A 90-foot tower stands watch over the main entrance and serves as the focal point and official symbol of the Meridian Campus. The complex contains 23 classrooms and laboratories, a bookstore, academic suites, study lounges, an 800-person multi-purpose auditorium for campus and community use, and ample parking. Since it is a commuter campus which primarily serves non-traditional, working students, no dormitory facilities are available on campus. Apartments are located nearby at Meridian Community College or may be found in other Meridian locations.

### Students

Approximately one-half of the students who attend MSU-Meridian reside in Lauderdale County. The remainder commute from 34 other Mississippi counties and from Alabama, with a majority making their homes in the surrounding counties of Clarke, Jasper, Jones, Kemper, Leake, Neshoba, Newton, Scott, and Wayne. Advancements in course offerings, programs, and distance learning technology are expected to expand even further the scope of service.

### Distance Learning

Two interactive "teleclassrooms" allow students on the Meridian and Starkville campuses, and at downlink sites elsewhere in the state, to receive instruction and interact through two-way video and audio distance technologies. This greatly improves MSU-Meridian's ability to expand the scope of its service and still maintain courses of the highest quality.

The development of web-based (direct-to-desktop) delivery systems is also being utilized to facilitate the delivery of asynchronous and synchronous real time audio and video through computer based technologies and the Internet.

### Library Facilities

Meridian Campus students are authorized to use the Mitchell Memorial Library in person, or may access it and other university resources through the MSU web site.

MSU-Meridian Campus and Meridian Community College have a partnership whereby MSU-Meridian students may access the holdings in the L. O. Todd Library. The book collection contains 56,000 titles. The library also subscribes to over 600 periodical titles, including scholarly journals, magazines, and newspapers. Interlibrary loan services are provided for students and faculty.

Through an "Electronic Library Room" on the MSU-Meridian Campus, students may access many references and databases directly via computer.

### Degree Programs

Junior, senior, and graduate-level courses offered at Mississippi State-Meridian Campus enable students to fulfill requirements for bachelor's, master's, specialist's, and doctoral degrees. They may also elect to enroll in specific classes for professional or personal growth.

### Undergraduate

#### Division of Arts and Sciences

Bachelor of Arts in General Liberal Arts  
Bachelor of Arts in Psychology  
Bachelor of Science in Interdisciplinary Studies  
Bachelor of Social Work  
Bachelor of Arts in Criminal Justice (conferred by USM through cooperative program)

#### Division of Business & Industry

Bachelor of Business Administration  
Accounting  
Business Administration  
Information Systems  
Management  
Marketing

#### Division of Education

Bachelor of Science  
Elementary Education  
Secondary Education, English  
Secondary Education, Mathematics  
Secondary Education, Social Studies

#### USM-Meridian College of Nursing

Bachelor of Science in Nursing

### Graduate:

#### Division of Business and Industry

Master of Business Administration

#### Division of Education

Master of Science  
Elementary Education  
Secondary Education, English  
Secondary Education, Mathematics  
Secondary Education, Social Studies  
Counselor Education, Community Counseling  
Counselor Education, School Counseling  
Educational Leadership  
Educational Specialist  
Elementary Education  
Secondary Education, English  
Secondary Education, Social Studies  
Counselor Education, Community Counseling  
Counselor Education, School Counseling  
Educational Leadership

#### Engineering - Off-campus Graduate Program (distance learning)

Master of Science or Doctor of Philosophy  
Chemical Engineering  
Civil Engineering  
Electrical Engineering/Computer Engineering  
Industrial Engineering  
Mechanical Engineering  
Computer Science

#### USM-Meridian College of Nursing

Master of Science in Nursing

## DIVISION of ARTS and SCIENCES

Sandra Vaughn, Interim Chair  
Associate Professor Sandra S. Vaughn, Director of Social Work  
Assistant Professor & BSW Advisor Rhonda R. Goodman Carr  
Assistant Professor Marian Swindell  
Assistant Professor David Sicko  
Visiting Assistant Professor Karen Tatum

The Division of Arts and Sciences offers three degree programs, the B.A. in General Liberal Arts (GLA), the Bachelor of Social Work (BSW), and the degree in Interdisciplinary Studies. Students can also earn certification in criminal justice/corrections. The program requirements for these degrees are the same as listed elsewhere in this General Bulletin. In addition, the Division of Arts and Sciences offers many courses each semester from other departments in the College, such as Art, English, History, Political Science, Psychology, Mathematics, Sociology, etc.

**SOCIAL WORK PROGRAM**

Associate Professor & Program Director Ms. Sandra Vaughn  
 Assistant Professor & Coordinator of Field Education Ms. Rhonda R. Goodman Carr  
 Assistant Professor Marian Swindell

The Social Work Program at Mississippi State University-Meridian Campus was granted initial accreditation by the Council on Social Work Education in February 2001. The Bachelor of Social Work (BSW) degree is recognized by the profession of social work as the first practice degree. The BSW graduate is prepared to work as a generalist social work practitioner in a variety of practice settings such as child welfare service agencies, nursing homes, medical hospitals, mental health hospitals/clinics, public health clinics, industries, juvenile and family courts, shelters for battered women and children, neighborhood and community services.

The social work program integrates a liberal arts perspective into the social work curriculum. This liberal arts perspective enhances the person-in-environment focus of generalist social work practice. Mississippi State University-Meridian Campus, an upper division campus of MSU, offers courses equivalent to the third and fourth years. The social work program accepts course credit through transfer (up to 66 hours) from other accredited universities and colleges. The applicant must complete the sixty (60) semester hours of specified university/college work before applying for admission to Mississippi State University-Meridian Campus Social Work Program. The Program Director reviews all course credit transfer hours.

Although students may enroll in social work as a major, there is a formal admission process into the social work program. The criteria for admission into the program include:

1. Cumulative GPA of 2.0
  2. The following liberal arts requirements must be completed:
    - English Composition I and II
    - College Algebra
    - Introduction to Sociology
    - American Government
    - General Psychology
    - Anatomy & Physiology
    - Principles of Economics
    - Fund. of Public Speech
    - Basic Computer Concepts & Applications
    - Cultural and Racial Minorities
  3. Completion of the following social work courses with a minimum grade of "B"
    - SW 2313 Introduction to Social Work (including twenty (20) hours of volunteer experience)
    - SW 2303 Social Welfare Policy I
    - SW 3013 Human Behavior in the Social Environment I
  4. Completion of "Application for Admission to the Social Work Program"
  5. Provision of three reference letters on provided forms
  6. Complete a personal interview with social work admissions committee
  7. Admission to the Social Work Program before enrolling in further social work courses.
- The criteria for remaining in the program include:
1. Maintain an overall GPA of 2.0 with a 3.0 GPA for social work courses
  2. Earning a minimum of a "B" in each social work course before proceeding to social work courses at the next level
  3. Continue to demonstrate an aptitude for a social work career
  4. Adhere to all academic expectations of the university and the social work program
  5. Adhere to the National Association of Social Workers Code of Ethics
  6. Completion of all course work and Social Work courses before enrolling in Field Practice

**Social Work Degree (BSW)**

Required Curriculum

The required curriculum for social work is sequenced and must be completed as scheduled below. Academic credit for life experience and previous work experience will not be given, in whole or in part, in lieu of the fields practicum or of the courses in the professional foundation areas, specifically, Social Work Practice I, II, and III. With declaration of the Social Work major, all students are assigned a Social Work faculty advisor. The following program of study should begin with the student's junior standing.

SW 2313	Intro. To Social Work	3 hours	Social Science Elective
SO 2203	Cult/Racial Min	SW 3523	Social Work Practice II
ST 3113	Stat Inference	SW 3533	Social Work Practice III
SW 2303	Social Welfare Policy I	3 hours	Anthropology Core
SW 3013	Human Beh in Soc Env I	SW 4713	Senior Seminar
3 hours	Philosophy Core	SW 4916	Field Practicum/Sem
SW 2323	Social Welfare Policy II	SW 4926	Field Practicum/Sem
SW 3023	Human Behav in Soc Env II	3 hours	EN/Literature Elective*
SW 3513	Social Work Practice I	3 hours	Humanities Elective*
SW 3213	Intro Social Research		
SW 4613	Child Welfare Services		
3 hours	Social Work Elective		
3 hours	History Elective		

**Total Credit hours for BSW degree 132**

\* Courses 3000/4000 level courses approved by advisor

**DIVISION of BUSINESS and INDUSTRY**

Dr. Habib Bazyari, Professor and Chair  
 Associate Professors John Stack and Paul Allen  
 Instructors Wayne Bedford; Kevin Ennis; James S. Lawson  
 Regina Clark, Academic Advisor

The mission of the College of Business and Industry is to develop knowledge and critical skills in students, and to foster economic and professional development through teaching, research, and service.

**BACHELOR of BUSINESS ADMINISTRATION  
 (ACCOUNTING, BUSINESS ADMINISTRATION,  
 INFORMATION SYSTEMS, MANAGEMENT, or MARKETING)**

Lower division hours must be completed at another educational institution

<b>Lower Division</b>			Music—excluding one-hour courses
EN 1103	English Composition	6 hours	Mathematics
EN 1113	English Composition		MA 1313 College Algebra
3 hours	History (any history qualifies)		MA 1463 Finite Mathematics
Humanities			(or MA 1713 Calculus satisfies 6 hours in MA)
3 hours	Literature Elective	PS 1113	American Government
3 hours	Fine Arts - Elect from the following:	6 hours	Science—BIO, GG, CH, or PH
	Art		(with laboratory)

3 hours Math/Science Elective\*  
 CO 1003 Fundamentals of Public Speaking  
 3 hours Behavioral Science (Elect one)  
 Introduction to Psychology  
 Introduction to Sociology  
 Introduction to Anthropology  
 ACC 2013 Principles of Accounting  
 ACC 2023 Financial Management  
 BL 2413 The Legal Environment of Business  
 EC 2113 Principles of Economics  
 EC 2123 Principles of Economics  
 7 hours Electives

**Total lower division hours 61**

**Upper Division**

BIS 3233 Intro to Mgt Info Systems  
 BIS 3713 Electronic Information Systems  
 3 hours International Elective

BQA 3113 Intro to Business Statistical Methods  
 BQA 3123 Business Statistical Methods II  
 FIN 3113 Financial Systems  
 FIN 3123 Financial Management  
 MGT 3114 Principles of Management & Production  
 MGT 3213 Organizational Communications I  
 MKT 3013 Principles of Marketing  
 GB 4853 Business Policy (Senior course)  
 18 hours Major\*\*  
 15 hours Electives\*\*\*

**Total - Minimum for B.B.A. Degree 128**

- \* If MATH, must elect from courses beyond MATH 1313 College Algebra. If SCIENCE, must elect from any course with BIO, GG, CH, or PH. This science does not require a lab.
- \*\* Accounting and Information Systems majors require twenty-one (21) hours. Business Administration major requires twenty-four (24) hours.
- \*\*\* By consent of advisor.

**DIVISION of EDUCATION**

Judith H. Miller, Interim Chair  
 Professors Gary J. Benton and George Thomas  
 Associate Professor Laura Bryan  
 Assistant Professors Scott Glass;  
 Linda Walker; Julia Porter; and Romily Ehochs  
 Instructor Monica Riley

The Division of Education offers degree programs in areas previously listed. Education programs offered at the Meridian Campus parallel those offered through the College of Education. Specific degree program requirements may be obtained by referencing the College of Education section in this Bulletin.

Degree requirements not listed in this section may be found by referencing the corresponding degree program located within this general bulletin.

## RESERVE OFFICERS' TRAINING CORPS

Lieutenant Colonel W. Logan Hickman, Jr.  
 Professor of Military Science  
 Office: 1st Floor, Middleton Hall  
 Telephone: (662) 325-3503  
 www.msstate.edu/dept/militaryscience/info  
 Mailing Address: P.O. Box 5447, Mississippi State, MS 39762

Colonel Marlon W. Yankee  
 Professor of Aerospace Studies  
 Office: 2nd Floor, Middleton Hall  
 Telephone: (662) 325-3810  
 Mailing Address: P.O. Drawer AF, Mississippi State MS 39762

The Reserve Officers' Training Corps is under the administrative and academic supervision of the College of Arts and Sciences. Army ROTC (Military Science) courses are indicated by the prefix MS; Air Force ROTC (Aerospace Studies) courses are indicated by the prefix AS. All ROTC courses are bona fide University courses. The total number of ROTC hours allowed as elective credit toward a specific degree varies. Most schools and colleges at the University accept six (6) or more hours of ROTC courses offered toward degrees conferred. The advanced ROTC courses are options for meeting social/behavioral science core requirements. A student should contact the appropriate college, school, or department to determine allowable ROTC course credit toward a particular degree.

### PURPOSES and OBJECTIVES

The general objective of the Reserve Officers' Training Corps is to develop in each student: (1) a basic understanding of associated professional knowledge necessary to be an officer in the US Armed Forces; (2) a strong sense of personal integrity, individual responsibility and honor; and, (3) an appreciation of the requirements of national security.

The Army ROTC Basic Course is designed to give the first and second year ROTC student an introduction to the Army and its career opportunities without incurring any obligation on the part of the student. The Advanced Course (third and fourth years) stresses the military skills and knowledge, and interpersonal skills required of commissioned officers of the Active Army, Army Reserve, or Army National Guard.

The Air Force ROTC General Military Course (GMC) is a two-year course normally taken during the freshman and sophomore years. The course covers two main themes - the development of air power and the contemporary Air Force in the context of military organization. A student can enroll in the GMC without military obligation (unless on an AFROTC Scholarship). The Professional Officer course (POC) is a two-year course of instruction, normally taken during the junior and senior years. The curriculum covers Air Force leadership and management and American Defense Policy. A minor in Aerospace Studies is available to students completing the specified requirements in Air Force ROTC.

### Army Program

**Army Program.** The Basic and Advanced Courses consist of 4 semesters each as shown below. See the "Description of Courses" section of this catalogue for further information.

#### Basic Course

MS 1112 Leader Development 1 .....	2
MS 1122 Leader Development 2 .....	2
MS 2112 Leader Development 3 .....	2
MS 2122 Leader Development 4 .....	2
Total .....	8

#### Advanced Course

MS 3113 Advanced Military Skills I .....	3
MS 3123 Advanced Military Skills II .....	3
MS 4113 Leader's Responsibilities .....	3
MS 4123 Professional Development of the Leader .....	3
Total .....	12

**Professional Military Education (PME).** In addition to the above, each cadet must complete, as a minimum, one university approved course in each of the following subject areas; Written Communication Skills, Human Behavior, Military History, Computer Literacy, and Math Reasoning. The PME requirement is normally achieved by the cadet as part of a normal course of study. Students should coordinate with a Military Science instructor to determine a course of action to complete the PME requirement.

Requirements for commissioning as a Second Lieutenant in the United States Army include thirty-two days at Advanced Camp (normally be-

tween the junior and senior years), completion of the Advanced Course, satisfactory academic progress, and the recommendation of the Professor of Military Science (PMS).

### ENTRANCE REQUIREMENTS

**Basic Course.** The Army Basic Course is an elective course requiring only that the individual be a full time student and a legal U. S. citizen. ROTC credit hours earned at other universities are transferable.

**Advanced Course.** Entrance into the Advanced Course is on a selective and competitive basis. The primary requirements for entry into the advance program are satisfactory completion of the basic course or equivalent, good academic standing, demonstrated leadership ability, an approved physical examination and completion of 54 semester hours of college credit.

**Two-Year Program.** Equivalent credit for the basic course may be obtained by students with 54 semester hours of college credit or more for direct enrollment in the advanced course, based on any one of the following.

- (a) Satisfactory completion of the five weeks Basic Summer Camp. This basic summer camp is primarily intended for students who could not obtain the basic ROTC course during the freshman and sophomore years.
- (b) At least 180 days of honorable service or active duty for training with the U.S. Armed Forces or Coast Guard.
- (c) Substitute credit, which in varying amounts may be derived from attendance at service academies, junior ROTC courses, and National Defense Cadet Corps training.
- (d) Successful completion of Basic Combat Training with the Army Reserve or the National Guard.

Interested students should consult the PMS during their first sophomore semester but not later than their junior year. Graduate students should apply prior to starting graduate work.

**Simultaneous Membership program (SMP).** Students who are members of a National Guard or Army Reserve unit may qualify for direct entry into the Army ROTC Advanced Course. Consult the PMS for additional information concerning the financial benefits of this program.

### Summer Camps

#### MS 2256 Introductory Leadership Course

The Army Leader's Training Course can be used by students desiring to enter the Advanced Course who are not eligible for advanced placement under any other process (eg. Basic Course, veteran, four years of junior ROTC, completion of Basic Training, etc). The course is five weeks long and incurs no military obligation for attendance. The course is a substitute for the two year Basic Course. Students attending may compete for Army scholarships.

#### MS 3376 Advanced Leadership Course

The five-week Army Advanced Camp is required of all students enrolled in the Advanced Course and is normally attended between the junior and senior year.

### Uniforms and Equipment

Uniforms and textbooks are issued without cost to students. However, all equipment and textbooks must be returned to the ROTC Department upon departure of the student, and any such article lost or damaged other than by fair wear and tear, must be paid for by the students. Each student enrolled in ROTC is responsible for the maintenance of his/her uniform. Students who fail to clear their accounts before leaving the institution will have their academic records withheld.

### Pay and Allowances

**At School.** Each student enrolled in the Army Advanced Course is paid a monthly subsistence allowance by the Federal Government of \$200.00 per month.

**At Camp.** While at the Army Basic Camp, the student receives pay at the rate of the first enlisted grade with less than four months service (approximately \$726.00 per month). Students attending Army Advanced Camp receive pay equal to one-half the pay of a second lieutenant with less than two years service (approximately \$752.00 per month)

### Army ROTC Scholarship Program

The Army awards ROTC scholarships to outstanding students each academic year. Army ROTC scholarships are for periods of either two, three, or four years. They pay tuition, fees, books, and laboratory expenses incurred by the cadet and provide up to \$400.00 per month subsistence allowance to the cadet for the duration of the scholarship (except during the summer). Additionally, 4YR Scholarship Winners and 3YR Designees that attend MSU may receive (CASH AWARDS) for room and board. The amount of the award depends on the number of scholarship winners and designees that attend MSU. All contracted cadets can compete for a scholarship. Both men and women are eligible to apply for these scholarships.

High-school students should consult their guidance counselors early in September or October of their senior year to apply for the four year scholarship. College sophomores with a 2.5 GPA & greater who otherwise qualify may be eligible for a 2 year scholarship.

### Obligations

Accepting a commission as a 2nd Lieutenant in the U.S. Army incurs a service obligation of 8 years. This period may be served in a variety of ways to include:

Active Duty, Reserves, National Guard, Individual Ready Reserve or a combination of these.

## AIR FORCE PROGRAM

**Air Force Course Program.** The General Military Course (GMC) and the Professional Officer Course (POC) consist of four semesters as shown below. See the "Description of Courses" section of this catalog for further information. Each course has a mandatory laboratory.

### General Military Course (GMC)

AS 1012 The AF Today I, fall semester .....	2
AS 1022 The AF Today II, spring semester .....	2
AS 2012 The Development of Air Power I, fall semester .....	2
AS 2022 The Development of Air Power II, spring semester .....	2
Total .....	8

### Professional Officer Course (POC)

AS 3013 AF Leadership & Management I, fall semester .....	3
AS 3023 AF Leadership & Management II, spring semester .....	3
AS 4013 National Security Forces in Contemporary Society I, fall semester .....	3
AS 4023 National Security Forces in Contemporary Society II, spring semester .....	3
Total .....	12

Requirements for commissioning as a USAF Second Lieutenant include completion of a degree according to the university's rules and regulations, completion of the Professional Officer Course, completion of AFROTC Field Training (normally during the summer between the sophomore and junior years), and approval of the Professor of Aerospace Studies. Officer candidates must be between 18 and 31 years of age for commissioning.

### Entrance Requirements

**GMC:** To enter the GMC, a student must be full-time, be a U.S. citizen, be in good physical condition, and be of good moral character.

**POC:** In addition to the GMC requirements, POC cadets must have passed the AFROTC Physical Fitness Test and the Air Force Officer Qualifying Test. They must be interviewed, selected by a board of USAF Officers, and have completed a four - or five-week field training encampment.

While Aerospace Studies courses are designed to prepare eligible students for commissioning as Second Lieutenants in the USAF, the AS academic courses are open to all interested students, even those who do not meet GMC or POC entry requirements. There is no armed forces service obligation for joining the GMC. AFROTC detachment personnel will ex-

plain any commitments associated with POC entry for AFROTC scholarships.

**Field Training:** AFROTC cadets who have completed the GMC course work and meet other requirements for POC entry will normally attend the four-week USAF field training encampment between their sophomore and junior years. There are five-week encampments for students seeking POC entry who have not previously completed GMC requirements. Cadets report individually to selected Air Force bases. Field Training is a mentally and physically demanding period of concentrated USAF training.

**Uniforms and Equipment:** AFROTC issues uniforms and textbooks without cost to students. However, all equipment and textbooks remain property of AFROTC and must be returned before departure. Each student is responsible for the maintenance of his/her uniform.

**Pay and Allowances:** Each student enrolled in the POC is paid a monthly subsistence allowance of at least \$350 while enrolled in the POC (maximum of 600 days). While at Field Training, students are paid at a rate of approximately \$20 per day.

### IN-COLLEGE SCHOLARSHIP PROGRAM

Full-time students are eligible to apply for Air Force ROTC three-or two-year scholarships. The majority of scholarships pay full college tuition, laboratory and incidental fees, book costs, plus at least \$250 per month, depending on academic year. Applicants are selected on the basis of college grade point average. Air Force Officer Qualifying Test scores, and a recommendation from the Professor of Aerospace Studies. Final selection is made by a Central AFROTC selection board which considers qualified applicants nationwide. There is no maximum number of scholarships for any one school. Students who are not presently taking AFROTC courses may still apply for the in-college scholarships.

Inquiries about AFROTC scholarships may be made directly to the Admissions Officer, AFROTC Detachment 425, DRAWER AF, Mississippi State, MS 39762.

**Active Duty Obligations:** Individuals who complete the AFROTC program and are commissioned a Second Lieutenant incur an active duty service commitment of four years.

## ROTC EXTRACURRICULAR ACTIVITIES

**Cadet Military Societies.** Chapters of the Scabbard and Blade (Army and Air Force), Arnold Air Society (Air Force), and the Society of American Military Engineers (Army and Air Force) are chartered by appropriate national organizations. Selected Basic cadets with scholarships and Advanced cadets are eligible for membership in the Scabbard and Blade, and the Arnold Air Society, while the Society of American Military Engineers is open to all ROTC cadets and engineering students.

**Drill Teams.** The Blue Knights is a precision military drill team, composed of selected cadets from Air Force ROTC. The drill team participates in university and community events, as well as in state-wide competitions.

**Lee's Rangers.** The Army ROTC Lee's Rangers is made up of selected volunteers from the Army. This unit participates in extra training in small unit tactics and leadership under simulated combat conditions. Emphasis is placed on maintaining a high level of physical conditioning and developing self-confidence. Participants must be enrolled in Army ROTC. The Lee Ranger Company sponsors the ranger challenge team.

**Army "Blades".** The "Blades" were established in March 1969 to formalize the women's auxiliary of the Army ROTC Cadet Corps. These outstanding coeds serve the University and Cadet Corps as hostesses at social functions and in other ways to promote citizenship and interest in the Army ROTC program. They also undertake various service projects.

**Silver Wings.** Silver Wings is a nationwide honorary organization of college students dedicated to the interests of the United States Air Force and Air Force ROTC. Silver Wings evolved from the previously all-female auxiliary of the cadet corps, Angel Flight. Silver Wings exists to further the cause of the United States Air Force by promoting the interest of college men and women in the Air Force ROTC program. Members of Silver Wings are considered associated members of Arnold Air Society. Participation in worthwhile projects such as the Red Cross blood drives and orphanage parties, as well as hosting at Air Force ROTC functions makes these students an outstanding asset to the campus.

**Bulldog Battery.** The Army ROTC's Bulldog Battery exists to support military ceremonies and athletic events.

**Color Guard.** Both the Air Force and Army Programs have Color Guards. The cadets present the Colors at home football and SEC home basketball games. They also participate in various community events.

### III. DESCRIPTION of COURSES

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## COURSE NUMBERING SYSTEM

Courses are listed alphabetically by course symbol. Each department entry contains a list of **faculty members**, including designation of the **department head**, and a description of the courses.

### System of Course Numbers

All course numbers consist of four digits, of which the first (left) digit indicates the level of preparation required and the fourth (right) digit indicates the number of semester hours. The two middle digits are reserved for the departments to distinguish one course from another. A fourth digit of zero (0) means that credit is variable to be fixed in consultation with the professor: example, **ACC 4000, Directed Individual Study**.

Courses that are in close sequence, such as two semesters of a survey course or a sequence of numbers for a seminar in a particular field may be listed with a hyphen (-) between the two four digit numbers: example, **PSS 4711-4731. Seminar**.

Where the same course is offered on both undergraduate and graduate levels, two numbers are used to designate the two levels of credit; example, **HI 4703/6703. England to 1485**. Students enrolled for graduate credit will be required to complete assignments above and beyond those students enrolled for undergraduate credit.

### Course Numbers

1001-2999

3001-4999

4000

5011-5999

6011-6999

8011-8999

9011-9999

7000

8000-8009

9000-9009

### Level of Credit\*

Lower division courses  
Undergraduate credit only  
Upper division courses  
Undergraduate credit only  
Directed Individual Study  
Undergraduate credit only  
Fifth year undergraduate  
or Professional courses  
Courses for graduate credit  
only

Directed Individual Study  
Graduate credit only  
Master's level research and  
thesis  
Doctor's level research and  
dissertation

\* Courses numbered 2000 or higher were upper division courses until Spring semester 1996.

## COURSE DESCRIPTIONS in ALPHABETICAL ORDER by COURSE SYMBOL

### Department of AGRICULTURAL and BIOLOGICAL ENGINEERING

Office: 100 Agricultural and Biological Engineering Center

Professors Gilbert (Head), Cathcart, Pote, and Smith;  
Associate Professors To and Thommason;  
Assistant Professor Elder

#### Biological Engineering

**ABE 1911. Engineering in the Life Sciences. (1)** (Open to freshmen and sophomores or first-semester transfer students only). One hour lecture. Introduction to agricultural and biological engineering; survey of the engineering profession; elementary analysis of biological systems; creative engineering and design and synthesis.

**ABE 2421. Analytical Methods. (1)** (Prerequisite: MA 1613). Two hours laboratory. The application of biostatistics to real experimental problems with emphasis on experimental design, sampling distribution, statistical hypotheses and decision rules.

**ABE 2990. Special Topics in Agricultural and Biological Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ABE 3303. Transport in Biological Environment. (3)** (Prerequisite: PH 2233 and CS 1213 or equivalent). Three hours lecture. Principles of steady state and unsteady state energy and mass transfer as applied to biological systems.

**ABE 3413. Bioinstrumentation I. (3)** (Prerequisites: ABE 3813). Two hours lecture. Two hours laboratory. Applied circuit analysis, electrodes and transducers, stress and strain, temperature measurements, human physiology, digital and programmable instrumentation.

**ABE 3813. Biophysical Properties of Materials. (3)** (Prerequisite: PH 2213). Two hours lecture. Two hours laboratory. Physical properties of biological products and materials. Primary emphasis on measurement and evaluation of dimensional, mechanical, rheological, transport, thermal, electrical, and optical properties.

**ABE 4000. Directed Individual Study.** Hours and credits to be arranged.

**ABE 4111/6111. Biological Engineering Principles Laboratory. (1)** (Corequisite: ABE 4812). Three hours laboratory. The theory and practice of applying engineering principles and approaches for solving problems in the design of biological systems. The student develops a design for a project in biological engineering.

**ABE 4122/6122. Biological Engineering Practices Laboratory. (2)** (Corequisite: ABE 4821/6821). Six hours laboratory. The student constructs, tests, and evaluates a biological engineering design.

**ABE 4313. Biological Treatment of Nonpoint Source Pollutants. (3)** Three hours lecture. Fundamental principles and design of biologically based treatment systems used to remove pollutants and protect receiving waters from agricultural and urban/suburban storm water runoff.

**ABE 4323. Physiological Systems in Biomedical Engineering. (3)** Three hours lecture. (Prerequisites: BIO 1504 or equivalent; EM 3313

or equivalent; ABE 3813; ABE 4803 or equivalent). Mathematical description and modeling of the behavior of physiological systems significant to biomedical engineers.

**ABE 4413/6413. Biological Control Systems. (3)** (Prerequisites: ABE 4312, MA 3253). Two hours lecture. Two hours laboratory. Dynamic response and mathematical modeling of biological systems (organismic and ecosystems). Control applications using operational transfer functions and transient and frequency response characteristics.

**ABE 4423/6423. Bioinstrumentation II. (3)** (Prerequisite: ABE 3413 or graduate standing). Two hours lecture. Two hours laboratory. Theory; application of automated measuring and control systems in biological sciences. Includes design/use of transducer interfaces; electronic signal conditioning; data logging; microprocessor based systems.

**ABE 4483/6483. Introduction to Remote Sensing Technologies. (3)** (Prerequisite: Senior or graduate standing, or consent of instructor). Three hours lecture. Electromagnetic interactions, passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR Lidar, digital image processing, natural resource applications. (Same as ECE 4423/6423 and PSS 4483/6483).

**ABE 4513/6513. Dynamics of Aging. (3)** (Prerequisite: BIO 1123). A broad based systematic, quantitatively oriented introduction to the dynamics of aging. Systems physiology of aging in relation to biomedical engineering.

**ABE 4523/6523. Biomedical Materials. (3)** (Prerequisites: One of the following: ABE 3813, or CHE 3413, or ME 3403). Three hours lecture. Emphasis is on applications, composition, testing, and biocompatibility of biomedical materials used in implant devices. This course may be used for honors credit.

**ABE 4533/6533. Rehabilitation Engineering (3)** (Prerequisites: Senior standing in College of Engineering). Three hours lecture. An introduction to rehabilitation engineering emphasizing applications of technology in prosthetics; orthotics, mobility, and sensory augmentation. This course may be used for honors credit.

**ABE 4613/6613. Biomechanics. (3)** (Prerequisites: EM 2413 and EM 2433). Three hours lecture. Force, motion, and deformation analysis of organisms and biological structures. Mechanical modeling techniques unique to biological materials.

**ABE 4624/6624. Experimental Methods in Materials Research. (4)** (Prerequisites: CHE 3413 or ABE 3813). Three hours lecture, three hours laboratory. Introduction to research methodologies commonly used in the evaluation of materials. Emphasis is on electron microscopy/spectroscopy techniques, surface analyses and treatments, and mechanical testing. (Same as CHE 4624/6624).

**ABE 4803/6803. Biosystems Simulation. (3)** Three hours lecture. Spring semester. Application of engineering analysis, modeling and simulation to biological systems.

**ABE 4812/6812. Principles of Engineering Design. (2)** (Prerequisite: senior standing in engineering). Two hours lecture. Emphasizing the use of mathematics, mechanics, and systems analysis in the design of engineering systems in agricultural, biomedical, food processing and forestry areas.

**ABE 4911. Engineering Seminar. (1)** (Prerequisite: Consent of instructor). One hour lecture. Discussion of current engineering developments and their relation to agriculture and the life sciences.

**ABE 4990/6990. Special Topics in Agricultural and Biological Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ABE 7000. Directed Individual Study.** Hours and credits to be arranged.

**ABE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**ABE 8213. Soil and Water Conservation Engineering. (3)** (Prerequisite: ABE 4121/6121). Two hours lecture. Two hours laboratory. A study of the theories required for the design of water control systems for erosion, flood, drainage, and irrigation.

**ABE 8314. Corrosion of Biomedical Implants. (4)** (Prerequisite: Graduate Standing). Three hours lecture & three hours laboratory. Basic concepts of electronics, especially related to corrosion. Development of corrosion mechanisms and evaluation of corrosion susceptibility of implant metals/alloys in dentistry and orthopaedics.

**ABE 8324. Failure Analysis of Metallic Medical Implants. (4)** (Prerequisites: a course in materials science, knowledge of scanning microscopy, and consent of instructor). Two hours lecture. Six hours laboratory. Instrumentation and failure mechanisms with emphasis on relationship of metallurgical, mechanical, and biological conditions will be presented for failed implanted metallic devices.

**ABE 8501-8531. Journal Reviews in Biomedical Engineering. (1)** One hour lecture. Current Journal articles relevant to Biomedical Engineering topics are read and reviewed.

**ABE 8801. Clinical Experience for Biomedical Engineering. (1)** (Prerequisites: Graduate standing in the Biomedical Program and permission of the instructor. Three hours experiential learning. This course will provide graduate students with exposure, understanding and insight into the clinical environment and/or treatment modalities of clinical (human and/or animal) patients.

**ABE 8813. Similitude in Research. (3)** (Prerequisites: MA 3253, or consent of instructor). Two hours lecture. Two hours laboratory. Theory of similitude and its use in planning, conducting, and analyzing physical experiments and models in engineering and biological sciences.

**ABE 8911-8931. Agricultural and Biological Engineering Seminar. (1)** Discussion of research needs, review of literature, and development of research work plans.

**ABE 8990. Special Topics in Agricultural and Biological Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ABE 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

### Agricultural Engineering Technology and Business

**ABE 1062. Shop Procedures. (2)** Four hours laboratory. Fundamentals of agricultural shop tools, equipment and materials; metal working and welding practices and processes; and manufacturing processes.

**ABE 1073. Agricultural Mechanics. (3)** One hour lecture. Four hours laboratory. Developing skills in hot and cold metal work; welding, carpentry practices, painting and finishing wood, concrete and concrete masonry; and basic electric wiring.

**ABE 1863. Engineering Technology in Agriculture. (3)** Three hours lecture. Introductory course emphasizing use of fundamentals for solving problems related to soil and water management, electrical power and control, agricultural machinery, and environmental control.

**ABE 2063. Introduction to Agricultural Engineering Technology. (3)** (Prerequisite or corequisite: MA 1313. Open to freshman or first-semester transfer students only). Three hours lecture. Curricula and career objectives. Quantitative and analytical assessment of the physical system in agriculture and natural resources.

**ABE 2173. Internal Combustion Engine Technology. (3)** Two hours lecture. Three hours laboratory. Principles of operation of gasoline, diesel and LP gas engines; engine types; ignition, fuel, valve, and cooling systems; transmission; power trains; power measurement; and tune-up.

**ABE 2263. Agricultural Surveying and Drainage. (3)** Two hours lecture. Three hours laboratory. Basic surveying measurements and equipment use. Surveys for drainage and erosion control measures, principles of water control for soil conservation and drainage.

**ABE 2873. Land Surveying. (3)** (Prerequisite: MA 1323 or equivalent). Two hours lecture. Three hours laboratory. Fundamentals of measurements and traverse computations. Public land surveys. Surveying practice in traverse and topographic surveys.

**ABE 3513. The Global Positioning System and Geographic Information Systems in Agriculture and Engineering. (3)** (Prerequisite: MA 1313 and MA 1323, or equivalent). Two hours lecture. Four hours laboratory. Basic theory and hands-on application of global positioning system (GPS) technology/hardware, and geographic information systems (GIS) software, for precise positioning in agriculture and engineering.

**ABE 3700. Internship in Gin Management and Technology. (1-6)** (Prerequisite: Minimum of junior standing or permission of instructor). Credits to be arranged. Work experience in approved cotton gins for Agricultural Engineering Technology and Business majors with an emphasis in Gin Management and Technology.

**ABE 4163/6163. Machinery Management for Agro-Ecosystems. (3)** (Prerequisites: ABE 1863 or equivalent). Two hours lecture. Two hours laboratory. Basic principles of operation and management of agricultural, landscape, and turf power machinery; selection of machinery based on power requirements, economy, and suitability for Agro-Ecosystems.

**ABE 4263/6263. Soil and Water Management. (3)** (Prerequisite: ABE 2873. Students with credit in ABE 2263 will not receive credit in this course). Two hours lecture. Three hours laboratory. Introduction to soil and water management principles; elementary hydrology, basic fundamentals of erosion control, surface and subsurface drainage, and water control for irrigation.

**ABE 4373/6373. Agricultural Structures. (3)** (Prerequisite: EG 1143). Two hours lecture. Three hours laboratory. Environmental and structural requirements for animal housing and agricultural product storage.

**ABE 4383/6383. Building Construction. (3)** (Prerequisites: EG 1143, junior standing.) Three hours lecture. An introduction to building terms, construction materials, structural components, construction methods, and mechanical systems pertaining to residential and commercial structures.

**ABE 4453/6453. Cotton Ginning Systems and Management. (3)** Three hours lecture. An in-depth exposure to the modern cotton ginning industry, including the basics of the operation of a cotton gin and management of the ginning process.

**ABE 4473/6473. Electrical Applications. (3)** Two hours lecture. Two hours laboratory. Fundamental electricity, wiring, and control of agricultural operations. Includes use of computer tools, instruments, safety, and hardware.

**ABE 4483/6483. Introduction to Remote Sensing Technologies. (3)** (Prerequisite: Senior or graduate standing, or consent of instructor). Three hours lecture. Electromagnetic interactions, passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR Lidar, digital image processing, natural resource applications. (Same as ECE 4423/6423 and PSS 4483/6483).

**ABE 4863/6863. Seed Conditioning Machinery. (3)** Two hours lecture. Two hours laboratory. Introduction to the methods of cleaning and separating seeds. Principles of operation of the various machines used for cleaning, separating, handling, drying, and packaging seeds. (Same as PSS 4233/6233).

**ABE 4961. Seminar. (1)** (Prerequisite: Consent of instructor). One hour lecture. Review of current literature dealing with the technical problems in the agricultural industry.

**ABE 8863. Seed Processing Plant Design and Management. (3)** (Prerequisite: ABE 4863/6863). Two hours lecture. Two hours laboratory. Design of seed processing facilities for efficient operation, network flow analysis, and management with emphasis on cost of processing, inventory, quality control and case studies.



**SCHOOL of ACCOUNTANCY**

Office: 381 McCool Hall

Professors Hollingsworth (Director), Daughtrey, McNair and Milam;  
Associate Professors Addy, Herring, and Rigsby;  
Assistant Professors Boone, Lehman, and Stammerjohan.

**ACC 1203. Basic Industrial Accounting. (3)** Three hours lecture. Emphasis on the fundamentals of financial and cost accounting essential for interpreting accounting reports. Designed primarily for engineering students. (Not open to students who have had 3 semester hours in accounting or who are accounting or business majors.)

**ACC 2013. Principles of Financial Accounting. (3)** Three hours lecture. Financial accounting fundamentals including accounting cycle, accounting systems, cash flow, assets, liabilities, equity, and forms of business organizations.

**ACC 2023. Principles of Managerial Accounting. (3)** (Prerequisite: ACC 2013). Three hours lecture. Managerial accounting fundamentals including interpretation and use of management reports, cost behavior, cost accumulation, budgeting, financial statement analysis, responsibility accounting.

**ACC 2083. Honors: Accounting Principles I. (3)** (Prerequisite: Open through invitation only). Honors section of ACC 2013.

**ACC 2093. Honors: Accounting Principles II. (3)** (Prerequisite: Open through invitation only). Honors section of ACC 2023.

**ACC 2990. Special Topics in Accounting. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ACC 3003. Accounting Information Systems I. (3)** (Prerequisite: ACC 2023). Three hours lecture. Using computerized information systems, including word processing, spreadsheet, database, network, and internet software. Documenting accounting information system processes and establishing effective internal controls.

**ACC 3013. Cost Accounting. (3)** (Prerequisite: ACC 3003). Three hours lecture. Cost accounting principles and techniques as applied to job order and continuous process types of industry; determination of unit costs; preparation of cost reports.

**ACC 3023. Intermediate Accounting I. (3)** (Prerequisite: ACC 2023). Three hours lecture. Financial accounting and reporting related to the development of accounting standards, financial statements, income measurement, cash, receivables, inventory, property, plant, and equipment, intangibles, and investments.

**ACC 3033. Intermediate Accounting II. (3)** (Prerequisite: ACC 3023). Financial accounting and reporting related to liabilities, leases, pensions, income taxes, stockholder's equity, accounting changes, errors, cash flows, and earnings per share.

**ACC 3053. Accounting Information Systems II. (3)** (Prerequisite: ACC 3003). Three hours lecture. Designing and using accounting information systems in both computerized general ledger and database processing environments.

**ACC 3203. Financial Statement Analysis. (3)** (Prerequisite: ACC 2031 or equivalent, ACC 2023). Three hours lecture. For non-accounting majors. A study of financial statements from an external users perspective; an analysis of statements for purposes of determining loan and investment potential.

**ACC 4000. Directed Individual Study.** (Prerequisites: ACC 2023 and consent of Director of School of Accountancy). Hours and credits to be arranged.

**ACC 4013. Income Tax I. (3)** (Prerequisite: ACC 2013). (Not open to PACC students). Three hours lecture. An analysis of the Federal Income Tax Law with emphasis on its application to the individual taxpayer.

**ACC 4023/6023. Advanced Accounting. (3)** (Prerequisite: ACC 3033). (Not open to PACC students). Three hours lecture. Financial accounting and reporting related to consolidations, partnerships and international business issues.

**ACC 4033. Auditing. (3)** (Prerequisite: ACC 3053). (Not open to PACC students). Three hours lecture. Fundamentals of auditing, including evaluating controls, assessing risk, designing audit programs, statistical sampling, professional ethics, and collecting evidence for financial, internal, operational, and compliance audits.

**ACC 4043/6043. Municipal and Governmental Accounting. (3)** (Prerequisite: ACC 2023). (Not open to PACC students). Three hours lecture. Accounting theory and practice applied to governmental units, state operated schools and colleges; classification and use of funds; fiscal procedures; budgetary control; financial statements; reports.

**ACC 4053/6053. International Accounting. (3)** (Prerequisite: ACC 2023). (Not open to PACC students). Three hours lecture. A study of the international dimension of accounting as it relates to multinational corporations and the international environment.

**ACC 4063/6063. Income Tax II. (3)** (Prerequisite: ACC 4013). (Not open to PACC students). Three hours lecture. Discussion of the Federal Income Tax treatment of taxpayers other than individuals and the treatment of property transfers which are subject to Federal and State gift and death taxes.

**ACC 4203/6203. Accounting Internship. (3)** (Prerequisites: Senior standing and approval by the Internship Director prior to the internship). A minimum of eight consecutive weeks consisting of forty hours per week of professional experience in audit, tax and other accounting related areas.

**ACC 4990/6990. Special Topics in Accounting. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ACC 7000. Directed Individual Study.** Hours and credits to be arranged.

**ACC 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**ACC 8013. Seminar in Financial Accounting Theory. (3)** (Prerequisite: ACC 4023). Examination of the theoretical concepts, definitions, and models espoused in the accounting literature and relevant to analyzing various contemporary issues in financial accounting and reporting.

**ACC 8023. Advanced Managerial Accounting. (3)** (Prerequisite: ACC 3013). Three hours lecture. The study of theoretical conceptual and technical issues in planning, control and decision making.

**ACC 8033. Business Assurance Services. (3)** (Prerequisite: ACC 4033). Three hours lecture. Financial statement auditing practices, including professional standards, ethical responsibilities, legal liability, and reporting requirements.

**ACC 8043. Information Technology Auditing. (3)** (Prerequisite: ACC 3053 and ACC 4033). Three hours lecture. Developing and executing a program of procedures to assess the reliability of information generated by computerized accounting systems.

**ACC 8053. Professional Accounting Policy and Research. (3)** (Prerequisites: ACC 3033). Three hours lecture. Integrative course examining recent trends and developments in public accounting. Various problems and cases in financial reporting issues, ethics, and other accounting topics.

**ACC 8063. Research in Tax Practice and Procedures. (3)** (Prerequisite: ACC 4013). Three hours lecture. Preparation of tax protests, tax planning; use of tax services; client representation; structure of Internal Revenue Service; and research problems in taxation.

**ACC 8073. Taxation of Corporations and Shareholders. (3)** (Prerequisite: ACC 4013). Examination of federal income tax laws as applied to corporations and shareholders with an emphasis of how research issues deal with these topics.

**ACC 8083. Federal Estate and Gift Taxation. (3)** (Prerequisite: ACC 4013). An examination of the Federal Estate and Gift tax laws with an emphasis on how to research issues dealing with these topics.

**ACC 8093. Taxation of Partnerships, S Corporations, Trusts, and Estates. (3)** (Prerequisite: ACC 4013). Three hours lecture. An examination of the income taxation of partnerships, S corporations, trusts, and estates with an emphasis on how to research issues dealing with these topics.

**ACC 8103. Income Taxation of Natural Resources. (3)** (Prerequisite: ACC 4013). Three hours lecture. An examination of federal income tax laws as applied to oil and gas, solid minerals, timber, and selected topics in farming.

**ACC 8112. Financial Statement and Management Accounting Report Analysis for Decision Making. (2)** (Prerequisite: ACC 8303 or equivalent). Two hours lecture. Analysis of financial statements and internal accounting reports to help management make decisions.

**ACC 8113. Advanced Individual Taxation. (3)** (Prerequisite: ACC 4013 or consent of instructor). Three hours lecture. An in-depth analysis of taxation of individuals with an emphasis on how to research issues dealing with these topics.

**ACC 8203. Advanced Accounting Analysis for Decision Making. (3)** (Prerequisite: ACC 2023). Three hours lecture. Application of accounting principles and concepts to alternative business possibilities as an aid to management decision making.

**ACC 8213. Financial Statement Analysis. (3)** (Prerequisite: ACC 8203 or equivalent). Three hours lecture. Focuses on understanding fi-

financial statements and the methods by which they are analyzed and interpreted. (Not open to students with undergraduate degree in Accounting.)

**ACC 8303. Survey of Accounting. (3)** Prerequisite: Graduate Standing. Three hours lecture. Introduction to financial and managerial accounting: including accounting process, cash flow, elements, business organizations, analysis of management reports and financial statements, cost planning and control.

**ACC 8990. Special Topics in Accounting. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ACC 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**ACC 9013. Seminar in Financial Accounting. (3)** (Prerequisite: ACC 8013). Review and analysis of historical and current research in financial accounting theory. Emphasis on developing critical analytical skills for evaluating financial accounting research.

**ACC 9023. Seminar in Management Accounting Research. (3)** (Prerequisite: ACC 8023.) Three lecture/discussion. A survey of the theory and practice of management accounting research.

**ACC 9033. Seminar in Accounting Research. (3)** (Prerequisite: Consent of the instructor) Evaluation and analysis of academic research strategies and methodologies, emphasis on (1) understanding and evaluating empirical research results and (2) formulating and writing research proposals.

## Department of ANIMAL and DAIRY SCIENCES

Office: 4025 Wise Center

Professors Althen, Boyd, Kiser, and Rogers;

Assistant Professors Evans, Fairbrother, Nicodemus, Rude, Ryan, A. Smith, T. Smith, St. Louis, and Willard

Instructor Shields

**ADS 1114. Animal Science. (4)** Fall and spring semester. Three hours lecture. Two hours laboratory. Fundamental principles and practical application of livestock, dairy, and poultry science.

**ADS 1132. Western Equitation. (2)** Fall and spring semester. One hour lecture. Two hours laboratory. Principles of horsemanship and management and training of western pleasure horses.

**ADS 2102. Equine Conformation and Performance Evaluation. (2)** Spring Semester. Four hours laboratory. Individual evaluation of horses with an in-depth study of anatomy and its relationship to function, plus methods used in evaluating performance classes.

**ADS 2122. Advanced Equine Evaluation. (2)** Fall Semester. (Prerequisite: ADS 2102 or consent of instructor). Four hours laboratory. Advanced evaluations of equine conformation and performance classes. Develop more extensive oral reason presentations to defend conformation and performance placings.

**ADS 2211. Equine Behavior and Training. (1)** (Prerequisite: ADS 1132 and consent of instructor). Two hours laboratory. Equine behavior and application of psychology principles for training horses. Systematic approaches to horse training emphasizing learning principles and training methods for specific equine activities.

**ADS 2990. Special Topics in Animal and Dairy Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ADS 3142. Meats Judging I. (2)** Spring semester. Four hours laboratory. Grading and judging meat carcasses and cuts, study of packing house operation. (Same as FST 3142)

**ADS 3213. Performance Analysis of Meat Animals. (3)** Fall Semester. One hour lecture. Four hours laboratory. Productive evaluation of livestock as meat animals directly related to carcass value and economics of production.

**ADS 3232. Horse Science. (2)** Spring semester. Two hours lecture. Breeding, feeding, management, and training of horses.

**ADS 3233. Introduction to Therapeutic Riding. (3)** (Prerequisite: ADS 1132 or consent of instructor). Three hours lecture. An introductory course to therapeutic horseback riding discussing the therapeutic riding team, facilities and equipment, standards and accreditation, and special needs of the rider.

**ADS 3312. Livestock Management Practices. (2)** Fall and spring semester. (Prerequisites: ADS 4123, ADS 4113, ADS 4323 or current semester enrollment). Four hours laboratory. Modern techniques used in proper vocational management of beef cattle, sheep, swine, and horses.

**ADS 3412. Selection, Evaluation, and Use of Meats. (2)** Fall semester. One hour lecture. Two hours laboratory. Identification, selection, cutting, grading, care, storage and cooking cuts of meat. (Same as FST 3412).

**ADS 3803. Science of Producing and Processing Milk and Milk Products. (3)** Three hours lecture. Science of breeding, feeding and management of dairy cattle for quality milk production; processing of milk and milk products and the relationship to human nutrition.

**ADS 3813. Dairy Cattle Appraisal. (3)** One hour lecture. Four hours laboratory. Phenotypic appraisal; breed programs; performance record systems.

**ADS 4000. Directed Individual Study.** Hours and credits to be arranged. Approval by Department Head only.

**ADS 4113/6113. Swine Science. (3)** Fall semester. (Prerequisites: ADS 4213, ADS 4613 and ADS 4123). Three hours lecture. Feeding, management, breeding, production, and marketing of swine.

**ADS 4123/6123. Animal Breeding. (3)** Fall semester. (Prerequisite: PO 3103). Three hours lecture. The basis for genetic improvement of livestock, including the study of variation, heritable characteristics, mating systems and methods of estimating breeding values. (Same as GNS 6123.)

**ADS 4132. Meats Judging II. (2)** Fall semester. (Prerequisite: ADS 3142). Four hours laboratory. Advanced study of grading and judging meat carcasses and cuts, Institutional Meat Purchase Specifications (IMPS) and a field trip to study packing house operations.

**ADS 4212/6212. Livestock Evaluation. (2)** Spring semester. (Prerequisite: ADS 3213). Four hours laboratory. Evaluation of individuals and representative groups of livestock from the standpoint of the breeder, the market, and the consumer.

**ADS 4213/6213. Livestock Nutrient Requirements and Formulation of Rations. (3)** Fall semester. Application of knowledge of feedstuffs and nutrient requirements in ration formulation for all classes of livestock.

**ADS 4221. Animal and Dairy Sciences Senior Seminar. (1)** Fall semester. One hour lecture. Review and oral presentation of animal science research and related production problems.

**ADS 4222/6222. Sheep Science. (2)** Fall semester. (Prerequisite: Junior or senior standing). Two hours lecture. Breeding, feeding, management, and marketing of sheep for lamb and wool production.

**ADS 4232/6232. Advanced Livestock Evaluation. (2)** Fall semester. (Prerequisite: ADS 4212/6212). Four hours laboratory. Advanced study of animal evaluation in functional efficiency.

**ADS 4243/6243. Composition and Chemical Reactions of Foods. (3)** Spring semester. (Prerequisites: CH 1053 and CH 2503 or equivalent). Three hours lecture. Nature and chemical behavior of food constituents including proteins, lipids, carbohydrates, minerals, water, enzymes and pigments; properties of food systems as related to commercial preparation. (Same as FST 4243/6243.)

**ADS 4314/6314. Meats Processing. (4)** Spring semester. Three hours lecture. Two hours laboratory. Survey of the meat industry with emphasis on slaughtering, cutting, curing, cooling, care, storage and manufacturing meats and meat products. (Same as FST 4314/6314.)

**ADS 4323/6323. Beef Cattle Science. (3)** Spring semester. (Prerequisites: ADS 4213, ADS 4613 and ADS 4123). Three hours lecture. Breeding, feeding, management, and marketing of beef cattle.

**ADS 4333/6333. Equine Exercise Physiology. (3)** (Prerequisite: ADS 3232). Three hours lecture. Evaluation of research in equine exercise science. Physical, physiologic, metabolic, behavioral and locomotive adaptations of the equine athlete to athletic training.

**ADS 4412. Managing Livestock Sales I. (2)** (Fall Semester) (Prerequisites: Instructor approval. Course must be taken in consecutive semesters with ADS 4421.) Four hours laboratory. Course in preparation, structure and management of livestock sales. Emphasis will be on cattle and horse sales. Students will prepare for and conduct sale.

**ADS 4421. Managing Livestock Sales II. (1)** (Spring Semester) (Prerequisites: Instructor approval. Course must be taken in consecutive semesters with ADS 4412.) Two hours laboratory. A course in preparation, structure and management of livestock sales. Emphasis will be on sheep sale. Students will prepare for and conduct sale.

**ADS 4423. Animal and Dairy Sciences Internship. (3)** (Prerequisite: Consent of instructor). Individual work experience with the farm animal species either in animal production, meat production or product

promotion with an industry commodity representative under faculty supervision.

**ADS 4611/6611. Practices in Physiology of Reproduction. (1)** (Prerequisite: VS 3014 or BIO 1504). Three hours laboratory. Artificial insemination and rectal palpation of reproductive organs of cattle; semen collection, evaluation, processing and handling. (Same as PHY 7611).

**ADS 4613/6613. Physiology of Reproduction. (3)** (Prerequisite: BIO 3504 or VS 3014.) Three hours lecture. Anatomy and physiology; reproductive cycles; production, evaluation and preservation of gametes; gestation; endocrine regulation; managed reproduction. (Same as PHY 7613.)

**ADS 4623/6623. Physiology of Lactation. (3)** (Prerequisite: VS 3014 or BIO 1504). Two hours lecture. Two hours laboratory. Anatomy, physiology, and pathology of the mammary gland; nervous and hormonal control of lactation, theories of milk secretion, modern methods of milking, factors affecting lactation. (Same as PHY 6623.)

**ADS 4812. Dairy Cattle Judging. (2)** (Prerequisite: Consent of instructor). Four hours laboratory. Practical work in judging dairy cattle and giving oral reasons.

**ADS 4814/6814. Dairy Farm Management. (3)** (Prerequisites: ADS 3813, ADS 4123/6123, ADS 4623/6623, ADS 4611/6611, ADS 4613/6613 and NTR 4115/6115). Two hours lecture. Three hours laboratory. Planning and integrating dairy farm operations; management principles applied to dairy herd operations.

**ADS 4990/6990. Special Topics in Animal and Dairy Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ADS 7000. Directed Individual Study.** Hours and credits to be arranged.

**ADS 8233. Advanced Breeding. (3)** Fall semester. (Prerequisites: ADS 4123/6123 or PO 4303/6303, ST 8114). Three hours lecture. Describing, measuring and partitioning phenotypic variances and covariances. Estimating parameters, predicting response, systems of breeding, and methods of selection. (Same as GNS 8233.)

## Department of AGRICULTURAL ECONOMICS and AGRIBUSINESS

Office: 300 Lloyd-Ricks Building

Professors Herndon (Interim Head), Allen, Beaulieu, Laughlin, Parvin, Reinschmiedt, and Spurlock;

Associate Professors Forrest, Little; Assistant Professors Coble, Hudson, Hanson and Wolfe

**AEC 1223. Computer Applications for Agriculturists and Life Scientists. (3)** Two hours lecture. Two hours laboratory. Basic agricultural microcomputer applications and computing logic; creating reports using word processors; developing presentations on agricultural subjects using multimedia software; and agricultural calculations using spreadsheets.

**AEC 2611. Seminar I. (1)** One hour lecture. Planning and preparing for careers in agricultural economics and agribusiness.

**AEC 2713. Introduction to Agricultural Economics. (3)** Three hours lecture. Each semester. Prerequisite to other Agricultural Economics courses. Economic principles applied to production, value, prices, credit, taxation, land tenure, marketing, international trade, and related problems affecting agriculture.

**AEC 2990. Special Topics in Agricultural Economics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AEC 3113. Introduction to Quantitative Economics. (3)** (Prerequisites: AEC 2713, MA 1613 or MA 1463). Three hours lecture. Each semester. Introduction to techniques and procedures for the quantitative analysis of economic problems related to the production and distribution of agricultural products.

**AEC 3133. Introductory Agribusiness Management. (3)** Three hours lecture. Study of marketing, production, risk, and financial management in agribusiness firms. Emphasis on application of economic principles to management of agrimarketing and farm supply firms.

**AEC 3213. International Trade in Agriculture. (3)** (Prerequisites: AEC 2713 or EC 2123 or consent of instructor). Three hours lecture. Examination of the importance of international agricultural trade, the economic basis of trade, and the policies affecting agricultural trade.

**AEC 3233. Introduction to Environmental Economics and Policy. (3)** (Prerequisites: AEC 2713 or EC 2123). Three hours lecture. Examines how economic forces, in concert with other processes, influence environmental quality through private markets and public policy.

**AEC 3413. Principles of Agricultural Marketing. (3)** (Prerequisites: AEC 2713 or EC 2123). Three hours lecture. Describes the principles

**ADS 8243. Advanced Physiology of Reproduction. (3)** (Prerequisite: ADS 4613/6613 or its equivalent). Three hours lecture. An advanced study of the reproductive process with emphasis on reproductive endocrinology and the physiology of germ cells. (Same as PHY 8243.)

**ADS 8423. Meat Science. (3)** Summer semester. (Prerequisites: CH 4513/6513 or equivalent and BIO 3304 or equivalent). Three hours lecture. Basic study of the value of meat and how this information is applied to the evaluation, processing and preservation of meat, meat products and meat by-products. (Same as FST 8423.)

**ADS 8433. Bone, Muscle and Fat Deposition in Animals. (3)** (Prerequisite: BCH 4613/6613). Fall semester. Three hours lecture. Study of deposition of various tissues from embryonic differentiation through maturity of animals. (Same as PHY 8433.)

**ADS 8453. Statistical Genetics. (3)** Spring semester. (Prerequisites: ST 8114, ADS 4123/6123). Three hours lecture. Probability and its application to genetics; partitioning of genotypic variance; covariances among relatives; regression and correlation; linear functions, variances; the analysis of variance. (Same as GNS 8453.)

**ADS 8633. Homeostatic Regulation and Physiological Stress. (3)** (Prerequisites: PHY 6514 and PHY 8131, 8133 or consent of instructor). Three hours lecture. An integration of the physiological mechanisms involved in the control of homeostasis in mammals is emphasized with discussion of the effect of specific stressors on these mechanisms. (Same as PHY 8633.)

**ADS 8811-8821-8831. Advanced Seminar. (1)** Review of literature of assigned and chosen topics in the respective field; preparation, organization, and presentation of papers.

**ADS 8833. Dairy Farm Management. (3)** (Prerequisites: Graduate standing and ADS 1114). Two hours lecture. Two hours laboratory. Feed crops, feeding, breeding, herd management, sanitation, and marketing of milk. (Offered only on weekend basis and as a Summer Short Course).

**ADS 8990. Special Topics in Animal and Dairy Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AEC 4000. Directed Individual Study.** Hours and credits to be arranged.

**AEC 4113/6113. Agribusiness Firm Management. (3)** (Prerequisites: EC 3123 or EC 3333). Three hours lecture. Examination and study of the organization, management, and operation of agricultural business with special reference to the application of managerial principles for effective decision-making.

**AEC 4123/6123. Commodity Futures Marketing. (3)** (Prerequisite: AEC 3113). Three hours lecture. Discussion of the purpose, function, mechanics, analysis, and application of commodity futures markets in pricing and hedging opportunities.

**AEC 4133/6133. Agricultural Marketing and Price Analysis. (3)** (Prerequisites: AEC 3113 and EC 3123). Three hours lecture. Application of economic theory to agricultural prices and agricultural markets in price estimation, discovery, and determination. Emphasis on marketing management and pricing in agricultural firms.

**AEC 4233/6233. Advanced Topics in Environmental Economics. (3)** (Prerequisites: AEC 3233 and EC 3123) Three hours lecture. Identifies topics lying on the frontier of environmental economics; demonstrates contributions that economics can make in understanding the problems and in providing guidance on solutions.

**AEC 4333/6333. Economics of Aquaculture. (3)** (Prerequisite: AEC 2713 or consent of instructor). Three hours lecture. Application of economic principles to understand aquacultural production systems, with emphasis on farm management, resource allocation, industry market structure, food safety and environmental issues.

**AEC 4343/6343. Advanced Farm Management. (3)** (Prerequisite: Senior standing, EC 3123, and AEC 4523). Three hours lecture. Techniques and procedures used for decision-making in the farm business as related to the determination of optimum enterprise choice and resource combination in both a static and dynamic framework.

**AEC 4413/6413. Public Problems of Agriculture. (3)** (Prerequisite: Senior standing and EC 3123 and AEC 3113). Three hours lecture. Major public and private problems of agriculture policies and action programs of government and individuals to deal with them; limitations encountered; appraisal of results.

**AEC 4513/6513. Advanced Microcomputer Software Usage in Agricultural Economics. (3)** (Prerequisite: CS 1223 or equivalent, or graduate standing and consent of the instructor.) Two hours lecture. Two hours laboratory. A working knowledge of microcomputer software used in agriculture, including operating systems, in-house software, Lotus 1, 2, 3, SC3, Microstat, SAS and other commercial software.

**AEC 4523/6523. Farm Financial Management. (3)** (Prerequisites: ACC 2023, AEC 3113 and AEC 3133). Three hours lecture. Financial analysis and decision making, including farm records, marginal analysis and enterprise budgeting, financial statement analysis, capital budgeting, and financial intermediation in agriculture.

**AEC 4530/6530. Agribusiness Management Internship. (1-6)** (Prerequisite: Consent of instructor). Individual work experience with approved agribusiness companies for agricultural economics or agribusiness students.

**AEC 4611. Seminar II. (1)** (Prerequisite: Senior standing). One hour lecture. Discussion of current agricultural economics and agribusiness developments and their relation to the food and fiber sector.

**AEC 4623/6623. Economics of Export and Import Traffic Management in Agriculture. (3)** (Prerequisites: Senior-Graduate level standing or consent of instructor). Examination of the ocean shipping industry, import-export agricultural traffic management techniques, government regulations, documentation, and financial considerations. Spring semester.

**AEC 4713/6713. Quantitative Economics. (3)** (Prerequisites: AEC 3113, EC 3113, and EC 3123). Three hours lecture. Investigation of the basic mathematical methods and techniques currently used to analyze economic problems.

**AEC 4723/6723. Modeling for Agricultural Management. (3)** (Prerequisite: AEC 3113). Three hours lecture. Application of mathematical programming techniques to problems confronted by firms and industries involved in the production, processing, and marketing of agricultural commodities.

**AEC 4733/6733. Econometric Analysis in Agriculture Economics. (3)** (Prerequisite: AEC 3113) Three hours lecture. Applications of single-equation estimation techniques to problems in agriculture.

**AEC 4990/6990. Special Topics in Agricultural Economics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AEC 4711. Agri-Marketing Practicum. (1)** Two hours laboratory. Design and preparation of marketing plan for presentation at National Agri-Marketing Association meeting. Development of plan includes market research, budgeting, and advertising layouts.

**AEC 7000. Directed Individual Study.** Hours and credits to be arranged.

**AEC 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**AEC 8122. Agribusiness Strategy Field Study. (2)** (Prerequisite: MGT 8121 or equivalent). A group project-based, field study of strategic issues currently facing a participating agribusiness organization.

**AEC 8123. Market Organization and Structure. (3)** Three hours lecture. Spring semester. Analysis of the conduct and performance of agricultural firms under imperfect market conditions. Sources of imperfections, managerial strategies and welfare considerations under imperfect market conditions.

**AEC 8143. Agricultural Production Economics. (3)** (Prerequisites: EC 3123 or EC 3333 and AEC 4343/6343). Three hours lecture. Theory of production as related to agricultural production and resource use. Emphasis upon optimal organization of agricultural firms.

**AEC 8153. Research Philosophy and Methodology in Economics. (3)** (Prerequisite: Graduate standing or consent of instructor). Three hours lecture. A study of undergirding philosophies and important methodologies in applied economic research. Case studies will focus on implications for conduct, review, and evaluation of research.

**AEC 8163. Consumers, Producers, and Markets. (3)** (Prerequisite: EC 3123). Three hours lecture. Focuses on economic theory related

to production, consumption, and markets for products. Extension into market structure, welfare economics, and non-market goods will also be discussed.

**AEC 8312. Economic and Social Environment of the Agribusiness Firm. (2)** (Prerequisites: EC 8103 or equivalent). Two hours lecture. The course focuses on the economic, social/political and legal forces which shape the environment in which agribusiness firms compete.

**AEC 8413. Quantitative Economic Analysis. (3)** (Prerequisite: MA 1613). Three hours lecture. A mathematical exploration of model building in economics and derivation of refutable hypotheses using comparative statics analysis.

**AEC 8522. Decision Modeling for Agribusiness Management. (2)** Two hours lecture. Application of models for improving managerial decision making. Emphasis on problem formulation and identification, solution procedures, and interpretation of results.

**AEC 8532. International Agricultural Trade and Policy. (2)** (Prerequisite: EC 8163). Two hours lecture. Examination of international trade theories, policies affecting agriculture, international trade, world trade negotiations, barriers to trade, and the role of agricultural trade in economic development.

**AEC 8542. Agribusiness Risk Management. (2)** (Prerequisite: EC 8103 or equivalent). A review of risk management concepts and techniques for managing risks faced by agribusiness firms, with emphasis on futures and options.

**AEC 8611. Research Seminar I. (1)** Selection of the research topic, development of the research proposal. Each semester.

**AEC 8621. Research Seminar II. (1)** Final preparation of the research proposal and presentation of the proposal. Each semester.

**AEC 8712. Topics in Applied Economics: Production and Supply. (2)** (Prerequisites: EC 8163 and EC 8133, or consent of instructor). Two hours lecture. Focuses on applying microeconomic theory to applied production-oriented problems. Emphasis is placed on using analytical tools to empirical data and reporting results.

**AEC 8722. Topics in Applied Economics: Marketing and Demand. (2)** (Prerequisites: EC 8163 and EC 8133, or consent of instructor). Two hours lecture. Focuses on problem-solving skills using economic simulation techniques. Emphasis is placed on stochastic and/or dynamic applications.

**AEC 8733. Topics in Applied Economics: Welfare and Policy Analysis. (3)** (Prerequisites: AEC 8712 and AEC 8722, or consent of instructor). Three hours lecture. Focuses on problem-solving skills using applied econometrics. Emphasis is placed on applications of welfare economics.

**AEC 8813. Advanced Production and Risk Analysis. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Economic theory and research applications related to production problems with emphasis on risk.

**AEC 8823. The International Economy. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Economic theory and analysis of government policies related to international trade with emphasis on the causes and consequences of globalization.

**AEC 8833. Environmental and Resources Economics. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Economic theory and analysis of government policies related to natural resources and the environment with emphasis on institutional frameworks within which policy decisions are made.

**AEC 8843. Survey Design and Experimental Economics. (3)** (Prerequisite: Consent of instructor). Three hours lecture. An exploration of economists' use of data collection techniques, such as surveys and experiments, with emphasis on analysis of non-market valuation problems.

**AEC 8990. Special Topics in Agricultural Economics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AEC 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of AGRICULTURAL INFORMATION SCIENCE and EDUCATION

Office: 200 Ballew Hall

Professors: Deeds, Gerard and Taylor (Head);  
Associate Professors Browning, Jackson, Newman, Raven and White;  
Assistant Professors Swartzel

**AIS 2613. Introduction to Information and Decision Science in Agro-ecosystems. (3)** Three hours lecture. Introductory course to the science of helping people learn how to access, analyze, apply and amend information to solve problems in agriculture.

**AIS 2990. Special Topics in Agricultural and Extension Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AIS 3203. Introduction to Technical Writing in Agricomunication.** (3) Three hours lecture. Basic principles of and techniques in communicating information relevant to agriculture/agribusiness, natural resources, and home economics.

**AIS 3303. Youth Organizations.** (3) Three hours lecture. Survey and analysis of youth organizations involved in Agricultural and Extension Education. Procedures involved in developing and implementing informal educational programs for youth.

**AIS 3324. Management of Agricultural Learning Systems.** (4) (Prerequisite: AIS 2163). Three hours lecture. Three hours laboratory. Planning instruction; selecting techniques of teaching; developing lesson plans; teaching agricultural topics using the problem-solving approach; using instructional technologies; and evaluating learner progress.

**AIS 3500. Internship in Agricultural Information Science.** (1-6) (Hours and credit to be arranged and shall not exceed a total of six hours). Supervised field experiences shall center around experiences related to participation in professional activities relating to problems, methods, and skills basic to agricultural and extension education.

**AIS 3803. Leadership Development in Agriculture and Life Sciences.** (3) Three hours lecture. Fall semester. Dynamic interactions of personal characteristics, knowledge and expertise; interpersonal influence; professional commitment; organizational planning and goals; and power for effective leadership in agricultural professions.

**AIS 4000. Directed Individual Study.** Hours and credit to be arranged.

**AIS 4103/6103. Objectives and Procedures of Programs in Agricultural Information Science and Education.** (3) (Prerequisite: Junior standing). Three hours lecture. Identification and development of objectives; techniques used in Agricultural and Extension educational procedures; relationships with U.S.D.A., experiment stations, and other agricultural agencies.

**AIS 4203/6203. Applications of Computer Technology to Agricultural Information Science and Education.** (3) (Prerequisites: CS 1013 or BIS 3713 or equivalent). Two-hours lecture and two-hours laboratory. Application of microcomputer technology in agricultural and extension education; data storage and retrieval; and use of canned computer programs in agricultural and educational settings.

**AIS 4303/6303. Applications of Information Technologies in Agricultural Learning Systems.** (3) (Prerequisites: AIS 4203/6203 or consent of instructor). Two hours lecture. Three hours laboratory. Advanced applications of computer and related information technologies in agricultural learning systems; designing and developing hypermedia-based materials for formal and nonformal agricultural instructional programs.

**AIS 4443/6443. Vo-Ed Curricula and Techniques of Teaching the Rural Disadvantaged.** (3) Organizing training programs in agricultural occupations for rural disadvantaged persons; developing teaching techniques adaptable to such programs and persons. Occupational opportunities for the rural disadvantaged.

**AIS 4453/6453. Cooperative Programs in Occupations Served by Agricultural Information Science.** (3) Procedures and techniques in organizing and coordinating cooperative vocational education programs in agricultural occupations; application at the local level.

**AIS 4873. Professional Seminar in Agricultural Information Science and Education.** (3) (Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. Legal, professional, administrative and curricular issues in agricultural and extension education. Includes needs assessment, community involvement and problem solving to plan formal and informal programs.

**AIS 4886, 4896. Student Teaching in Agriculture Information Science and Education(6,6)** (Both courses to be taken concurrently). (Prerequisites: Admission to Teacher Education and senior standing). Supervised observation and directed teaching in respective field of endorsement.

**AIS 4990/6990. Special Topics in Agricultural Information Science and Education.** (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AIS 7000. Directed Individual Study.** Hours and credits to be arranged.

**AIS 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**AIS 8103. International Agricultural Education.** (3) Three hours lecture. Examination of formal and non-formal agricultural education systems and related situations and processes which influence agricultural development in developing countries.

**AIS 8203. Advanced Communication in Agricultural Information Science and Education.** (3) Two hours lecture. (1 1/2 hours each). Updating of principles of communicating information in the fields of agriculture/agribusiness, natural resources, and home economics; review and updating of communications techniques.

**AIS 8243. Administration and Supervision in Agricultural Information Science and Education.** (3) Three hours lecture. Principles in developing and administering programs in agricultural and extension education with attention to federal-state-local relationships and supervisory procedures.

**AIS 8263. Public Relations in Agricultural Information Science and Education.** (3) Three hours lecture. Publics to be dealt with, public relations media; methods and techniques of establishing and maintaining desirable public relations.

**AIS 8303. Development of Youth Programs.** (3) (Prerequisite: AIS 3303 or consent of instructor). Three hours lecture. Needs and interests of youth; developing, managing, and evaluating informal youth education programs; volunteer and paraprofessional staff development; securing and developing supportive resources.

**AIS 8403. Directing Learning Experiences in Agricultural Information Science and Education.** (3) Two hours lecture. Two hours laboratory. Theory and practice in directing learning activities. Using instructional technology. Delivering instruction for formal and non-formal groups.

**AIS 8503. Program Planning and Development in Agricultural Information Science and Education.** (3) Three hours lecture. Principles, theory, and practice in developing local and state programs of vocational, technical, and extension education.

**AIS 8523. Teaching Out-of-School Groups in Agricultural Information Science and Education.** (3) Three hours lecture. Organizing, planning, and instructing out-of-school groups in agricultural and extension education; identifying and assessing needs of clientele; and evaluating effectiveness.

**AIS 8533-8543. Workshop in Agricultural Information Science and Education.** (3-3) (A total of six semester hours may be earned in AIS 8533-8543). One hour lecture. Four hours laboratory. Studying current problems in agricultural and extension education; investigating and analyzing problems; preparing comprehensive reports on problems; planning for local application.

**AIS 8593. History, Philosophy, and Policy of Agricultural Information Science and Education.** (3) Three hours lecture. Philosophy, history, and development of Agricultural and Extension Education; implications, influences, and evaluation of forces and policies impacting Agricultural and Extension Education.

**AIS 8606. Student Teaching in Agricultural Information Science and Education.** (6) (Prerequisites: Admission to the graduate certification program, teacher education and student teaching). Supervised observation and directed teaching in Agricultural Information Science and Education.

**AIS 8703. Evaluation of Agricultural Information Science and Education Programs.** (3) Three hours lecture. Evaluation principles and procedures used in developing and analyzing vocational, technical, and extension education programs.

**AIS 8803. Applying Research Methods to Agricultural Information Science and Education.** (3) Three hours lecture. Principles and techniques for planning, conducting, and reporting research; development of effective design of research problems; emphasis on understanding and evaluating scientific reports.

**AIS 8990. Special Topics in Agricultural Information Science and Education.** (1-9) Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AIS 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**ANTHROPOLOGY**

Office: 206 Cobb Institute of Archaeology

Professor Rafferty; Associate Professors Hogue  
Assistant Professors Loewe, and Peacock.

(For departmental information, see SOCIOLOGY, ANTHROPOLOGY and SOCIAL WORK.)

**AN 1103. Introduction to Anthropology. (3)** Three hours lecture. The fields, theories, and methods of anthropology; man's biological and cultural development; survey of technological, economic, political, social, religious, and linguistic systems.

**AN 1143. Introduction to Cultural Anthropology. (3)** Three hours lecture. Introduction to the study of social, political, and economic organization, magic and religion, personality, and art.

**AN 1173. Introduction to Gender Studies. (3)** Three hours lecture. An introduction to theoretical concepts in Gender Studies. This course will examine the influence of the women's movement on the academic development of Gender Studies (Same as WS 1173 and SO 1173).

**AN 1343. Introduction to Biological Anthropology. (3)** Three hours lecture. The biological nature of man; study of human origins; fossil evidence; genetic mechanism; cultural association; comparative primate anatomy and behavior; concepts of race. **Note:** Unacceptable for Natural Science requirement in Arts and Sciences.

**AN 1543. Introduction to Archaeology. (3)** Three hours lecture. A survey of early cultural development throughout the world; emphasis on archaeological techniques, interpretations and theories of development.

**AN 2203. Cultural and Racial Minorities. (3)** (Prerequisite: Three hours in an introductory social science). Three hours lecture. Origins of minority groups and racial attitudes. Biological and cultural concepts of race and minority groups; problems of adjustment in interracial and multiethnic societies. (Same as SO 2203).

**AN 2510. Archaeological Field Methods: Survey. (1-6)** Credit to be arranged. Archaeological surface survey methods in field setting, including map-reading, shovel-testing, collection techniques, controlled surface collection, artifact recognition.

**AN 2990. Special Topics in Anthropology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AN 3113. Societies of the World. (3)** (Prerequisite: AN 1103 or its equivalent or consent of instructor). Three hours lecture. A survey of principal culture types and their distribution.

**AN 3123. North American Indians. (3)** (Prerequisite: AN 1103 or consent of instructor). Three hours lecture. Ethnographic survey of the Indians of North and Mesoamerica.

**AN 3133. Anthropology of Latin America. (3)** Three hours lecture. A survey of societies in Latin America with an emphasis on indigenous peoples, their relationship to contemporary social and economic development.

**AN 3153. African Art and Culture. (3)** (Prerequisite: AN 1103 or consent of instructor). Three hours lecture. An examination of the role of traditional art in the beliefs and customs of representative African cultures. (Same as ART 3153).

**AN 3323. Contemporary Woman. (3)** Three hours lecture. Introductory course for the Concentration in Women's Studies. Major topics are women's heritage, identity, culture, and vulnerabilities. (Same as SO 3323).

**AN 3333. Primate Behavior. (3)** Three hours lecture. In-depth study of non-human primate evolution, social behavior, and communication. Field studies and conservation efforts will be examined.

**AN 3510. Archaeological Field Methods: Excavation. (1-6)** Credit to be arranged. Excavation methods in field setting, including mapping, recording, recovery and proveniencing techniques, field research strategies.

**AN 3513. Artifact Analysis. (3)** Two hours lecture. Two hours laboratory. Introduction to artifact recognition and analysis, focusing on prehistoric and historic ceramics, stone tools and debris, glass, nails, animal bones, shell, and environmental indicators.

**AN 3523. North American Archaeology. (3)** (Prerequisite: AN 1103 or consent of instructor). Three hours lecture. A survey of the prehistoric cultures of North America including the influences of the high civilizations of Mesoamerica.

**AN 3533 Rise of Civilization. (3)** Three hours lecture. Survey of prehistoric cultures and their contributions to the rise of civilizations in Latin America, China, Africa, India and the Middle East.

**AN 3540. Archaeological Travel and Participation Program. (1-6)** Participation in excavations in the Near East and related lecture program. (Same as REL 3540).

**AN 3553. Near Eastern Archaeology. (3)** Three hours lecture. Introduction to the contributions made by archaeological research to an-

cient Near Eastern history and prehistory, with special emphasis on the Syro-Palestinian area. (Same as REL 3553).

**AN 4000. Directed Individual Study.** Hours and credits to be arranged.

**AN 4123/6123. Anthropological Theory. (3)** (Prerequisite: AN 1103 or its equivalent or consent of instructor). Three hours lecture. A history of the development of anthropological theory; an analysis of contemporary theoretical formulations and approaches.

**AN 4133/6133. Medical Anthropology. (3)** (Prerequisite: AN 1103 or consent of instructor). Three hours lecture. The cross-cultural study of health, sickness, and medicine from a holistic perspective emphasizing interactions between culture and biology and between biomedicine and local healing traditions.

**AN 4143/6143. Ethnographic Methods. (3)** (Prerequisites: AN 1103 or AN 1143 or consent of instructor). Three hours lecture. An overview of methods and techniques for conducting ethnographic research.

**AN 4163/6163. Anthropology of International Development. (3)** (Prerequisite: Senior standing or consent of instructor). Three hours lecture. Role of anthropology in international development including origins of the Third World, development theory, current issues in international development, case studies.

**AN 4173/6173. Environment and Society. (3)** (Prerequisite: AN 1103, SO 1003 consent of instructor). Three hours lecture. A study of the interaction between human society and the environment including the social aspects of environmental problems. (Same as SO 4173/6173).

**AN 4303/6303. Human Variation and Origins. (3)** Three hours lecture. An examination of human origins, genetics, and other principal factors that contribute to physical variation within and between human populations.

**AN 4313/6313. Human Identification. (3)** Two hours lecture and three hours laboratory. Identification of each human bone and its fragments. Sex differences, age changes in bone and dentition, dermatoglyphics, blood group systems, and paleopathology will be studied.

**AN 4403/6403. Introduction to Linguistics. (3)** (Prerequisite: AN 1103 or its equivalent or consent of instructor). Three hours lecture. The descriptive and historical study of language; linguistic analysis and comparison; language classification; language in its social and cultural setting. (Same as EN 4403/6403).

**AN 4503. Introduction to Method and Theory in Archaeology. (3)** (Prerequisite: AN 1103 or consent of instructor). Three hours lecture. An introduction to the history of and interrelationship between theory and method in archaeology with emphasis on recent advances.

**AN 4523/6523. Public Archaeology. (3)** (Prerequisite: AN 1543 or consent of instructor). Three hours lecture. Survey of cultural resource management practices, Federal and State historic preservation laws, research proposal design, significance assessments, professional ethics, employee/client relationships, and public education.

**AN 4623/6623. Language and Culture. (3)** (Prerequisite: AN 1103 or consent of instructor). Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as EN 4623/6623 and SO 4623/6623).

**AN 4633/6633. Sociolinguistics. (3)** (Prerequisites: AN 1103, or consent of instructor). Three hours lecture. Examination of relationship between language and society, and how, when, and why people in speech communities use language varieties. (Same as EN 4633/6633 and SO 4633/6633).

**AN 4990/6990. Special Topics in Anthropology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AN 7000. Directed Individual Study.** Hours and credits to be arranged.

**AN 8000. Thesis Research and Thesis.** Hours and credits to be arranged.

**AN 8103. Applied Cultural Anthropology. (3)** (Prerequisites: AN 1103 or AN 1143 or consent of instructor). Three hours lecture. An overview of the application of anthropological theory and method of contemporary social problems.

**AN 8203. Reading and Research in Applied Anthropology. (3)** Three hours lecture. An overview of sub-disciplines within applied an-

thropology, including medical anthropology, development, forensics, education and cultural resource management.

**AN 8216. Internship in Applied Anthropology. (6)** A minimum of nine weeks of supervised professional anthropology experience in an appropriate setting.

**AN 8303. Seminar in Bio-archaeology. (3)** Three hours lecture. Overview of applications in bio-archaeology, including paleodemography, paleopathology, and paleonutrition.

**AN 8513. Southeastern Archaeology. (3)** Three hours lecture. Prehistory of Southeastern U.S. from entry of first people to European contact. Changes in technology, settlement, subsistence, demography, and environment examined using archaeological evidence.

**AN 8523. Environmental Archaeology. (3)** Three hours lecture. Coverage of method and theory in environmental archaeology, includ-

ing elements of palynology, geoarchaeology, floral and faunal analysis, landscape ecology, historical ecology, cultural ecology, and taphonomy.

**AN 8533. Readings in Archaeology: Theory. (3)** Three hours lecture. Archaeological theory and its implications for practice, focusing on evolutionary archaeology but also including culture history, processual, reconstructionist, and post-processual approaches.

**AN 8553. Readings in Archaeology: Applications. (3)** Three hours lecture. Review of literature related to materials science in archaeology, including thin-sectioning and petrography, raw material sourcing, organic residues, dating techniques, and preservation technology.

**AN 8990. Special Topics in Anthropology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## AGRICULTURAL PEST MANAGEMENT

(For departmental information, see Department of ENTOMOLOGY and PLANT PATHOLOGY.)

**APM 2990. Special Topics in Agricultural Pest Management. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**APM 4013-4023. APM Internship. (3)** (Prerequisite: Approval of APM Internship Committee). Designed to provide APM students with field experience in disease, insect and weed management through a working relationship with pest management professionals.

**APM 4021. APM Senior Seminar. (1)** (Prerequisite: APM 4013 or 4023 or current enrollment in APM 4013 or 4023). One hour lecture. Fall semester. Review and discussion of internship experiences. Includes dis-

ussion of contemporary topics in pest management and development of professional skills.

**APM 4990/6990. Special Topics in Agricultural Pest Management. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**APM 8990. Special Topics in Agricultural Pest Management. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## School of ARCHITECTURE

Professors James West (Dean) and Fazio;

Associate Professors Barrow, Berk, Buege, Greenwood, Lewis, McCann, and Perkes;

Assistant Professors Brown, Corroto, Monson and Poros;

Visiting Associate Professor Clarke

**ARC 1013. Architectural Appreciation. (3)** Three hours lecture. Illustrated study of architecture's role in shaping the quality of man's environment. Architectural history, design theory, and process as it affects daily life. Intended for non-majors.

**ARC 1536-1546. Architectural Design I-A and I-B. (6,6)** (Prerequisites: Letters of Acceptance into design studio and consent of Associate Dean of Architecture). Two hours lecture. Ten hours studio. Introduction to creative process, design principles and methods. Design projects emphasize verbal and visual communication; observing, analyzing, representing, and making of form, space, materials.

**ARC 1586-1596. Honors Architectural Design 1-A and 1-B. (6,6)** (Prerequisites: Letter of Acceptance into design studio and consent of Associate Dean of Architecture). Two hours lecture. Ten hours studio. Independent investigation and presentation of an approved research topic in addition to the content described under ARC 1536-1546.

**ARC 2313. History of Architecture I. (3)** Three hours lecture. A survey of man's effort to mold his environment from prehistory through the Early Middle Ages.

**ARC 2536-2546. Architectural Design II-A and II-B. (6,6)** (Prerequisite: ARC 1546 or equivalent or consent of the dean). One hour lecture. Eleven hours studio. Introduction to fundamental aspects of building including structural-spatial ordering systems. Projects emphasize linkages between people and spaces through investigation of perceptual-conceptual issues.

**ARC 2586-2596. Honors Architectural Design II-A and II-B. (6,6)** (Prerequisite: ARC 1546 or 1596). One hour lecture. Eleven hours studio. Independent investigation and presentation of an approved research topic in addition to the content described in ARC 2536.

**ARC 2713. Passive Building Systems. (3)** (Prerequisite: For architecture majors- ARC 1546 and PH 1123; for non-architecture majors- consent of instructor). Three hours lecture. Investigation of the morphological impacts of various environmental energies on building forms and systems. Included are light, climatic, structural, and ecological factors.

**ARC 2723. Materials. (3)** (Prerequisites: ARC 2536 and ARC 2713). Three hours lecture. Analyzing how materials and systems are designed to respond to both environmental energies and needs. Included are soils, concrete, wood, masonry, and metals.

**ARC 2990. Special Topics in Architecture. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ARC 3313. History of Architecture II. (3)** (Prerequisite: ARC 2313). Three hours lecture. Survey of major developments in architecture and city planning from the Fourteenth through the Eighteenth Centuries.

**ARC 3323. History of Architecture III. (3)** (Prerequisite: ARC 3313). Three hours lecture. Survey of major developments in American architecture and survey of major developments in European architecture during the Nineteenth and Twentieth Centuries.

**ARC 3333. Ancient Greek Architecture. (3)** (Prerequisite: ARC 2313 or consent of instructor). Three hours lecture. Investigations of the architecture, construction techniques, design theory, and planning principles for Greek architecture of the sixth, fifth, and fourth centuries B.C.

**ARC 3343. The Architecture of Housing. (3)** Three hours lecture. An historical, social, and typological investigation of the evolution of housing as an architectural and cultural phenomenon.

**ARC 3353. History and Theory of Urban Form. (3)** (Prerequisite: Junior standing or consent of instructor). Three hours lecture. Investigation of the forces that influence urban form, tracing the resultant developments from the cities of classical antiquity through Western Europe to America's "edge cities."

**ARC 3536-3546. Architectural Design III-A and III-B. (6,6)** (Prerequisite: ARC 2546 or equivalent or consent of the dean). One hour lecture. Eleven hours laboratory. The development of building design as a synthesis of environmental concerns, behavioral responses, functional requirements, and technical systems. Studies using small and intermediate scale projects.

**ARC 3553. Environmental Education in the Schools. (3)** Two hours lecture; one field visit. This course involves teaching concepts about design and environment awareness to grade school children.

**ARC 3556-3566. Accelerated Studies in Architectural Design III-A and III-B. (6,6)** (Prerequisite: ARC 2546 or equivalent or consent of dean). One hour lecture. Eleven hours studio. Individualized studies in architectural design for students enrolled in Accelerated Studies Program.

**ARC 3573. The Art/Architecture of Packaging. (3)** Three hours lecture. Investigations into theories, techniques, and procedures of packaging (with emphasis on portfolio design) through traditional, mechanical, and digital means.

**ARC 3583. Architectural Drawing and Representation. (3)** (Prerequisite: ARC 2546 or equivalent and consent of instructor). Two hours lecture. Three hours laboratory. Advanced course in architectural

drawing and visualization that builds upon the students developing skills in graphics, modeling, and digital media.

**ARC 3713. Assemblages. (3)** (Prerequisites: ARC 2546 and ARC 2723). Two hours lecture and one field study. Fabrication and construction are explored in the relationship between nature of materials and methods of assembly.

**ARC 3723. Active Building Systems. (3)** (Prerequisites: ARC 3536 or ARC 3566 and ARC 3713 or for non-architecture majors- consent of instructor). Three hours lecture. Concentrates on defining the mechanical and electrical (active) techniques available to architects for integrating thermal comfort and life safety into the built form.

**ARC 3904. Architectural Structures I. (4)** (Prerequisite: MA 1463 or MA 1613 and ARC 2546). Three hours lecture. Three hours laboratory. Principles of statically determinate structures and strength of materials relating to architectural construction. Wood is used as the primary construction material.

**ARC 3913. Structures II. (3)** (Prerequisite: ARC 3904). Three hours lecture. Continuation of structural principles relating to architectural construction. Analysis of indeterminate structures, deflection, and lateral loading. Structural steel is the primary material.

**ARC 4000. Directed Individual Study.** Hours and credits to be arranged with approval of School of Architecture Dean.

**ARC 4313. Architectural Theory. (3)** (Prerequisite: ARC 3323 or ARC 3313 and consent of instructor). Three hours lecture. A critical investigation of writings that have shaped architectural theory.

**ARC 4523/6523. Introduction to Virtual Interface Systems. (3)** One hour lecture. Four hours laboratory. Introduction to the theories and realities of virtual interface systems. Application of VIS technology in architectural settings.

**ARC 4533. Accelerated Studies in Architectural Design IV-C. (3)** One hour lecture. Eleven hours studio. Individualized studies in architectural design for students enrolled in Accelerated Studies Program.

**ARC 4536-4546. Architectural Design IV-A and IV-B. (6,6)** (Prerequisite: ARC 3546 or equivalent or consent of dean). One hour lecture. Eleven hours laboratory. Design of architectural elements integrating building systems, social concerns, and environmental factors. Studies involve intermediate to large scale projects in realistic architectural situations.

**ARC 4543. Accelerated Studies in Architectural Design IV-D. (3)** One hour lecture. Eleven hours studio. Individualized studies in architectural design for students enrolled in Accelerated Studies Program.

**ARC 4733. Site Planning for Architects. (3)** (Prerequisite: ARC 2546). Three hours lecture. Introduces the natural ecological systems as they relate to human's impact on them, along with the natural systems' resistance to human's impact.

**ARC 4903. Structures III. (3)** (Prerequisite: ARC 3913). Three hours lecture. Continuation of structural principles relating to architectural construction. Soil mechanics, reinforced concrete design, footings and foundations, masonry construction, and precast concrete design.

**ARC 4990/6990. Special Topics in Architecture. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ARC 5353. Philosophy of Architecture. (3)** Three hours lecture and field visits. The philosophical issues of meaning, appreciation, and the distinctive characteristics of the artistic creation.

**ARC 5383. Legal Aspects of Architecture. (3)** Three hours lecture. Investigation and research regarding architectural issues including architectural law, contracts, litigation, case studies and other topical issues.

**ARC 5443. Thesis Programming. (3)** One hour lecture. Six hours laboratory. Advanced study of analytical and intuitive methods of programming, leading to development of thesis program to be used in ARC 5589.

**ARC 5493. Architectural Practice. (3)** Three hours lecture. Investigation into issues facing the graduate architect including: responsibilities to the community and the profession; project and business management; client relations; and delivery of services.

**ARC 5523. Architects Teaching Architecture. (3)** Two hours lecture. Three hours field visit. Students teach architecture and environmental quality to fourth-and-fifth grade Jackson Public School students.

**ARC 5576. Architectural Design V-A. (6)** (Prerequisite: ARC 4546). One hour lecture. Fifteen hours laboratory. Theory and application of architectural problems at urban scale. Investigation of social, economic, political issues effecting architectural programming and design.

**ARC 5589. Architectural Thesis V-B. (9)** (Prerequisite: ARC 5576). Two hours lecture. Twenty hours laboratory. Development of ar-

chitectural project of complex and comprehensive nature. Emphasis upon thorough examination of all aspects of building.

**ARC 5623. Studies in the Theory and Practice of Urban Design. (3)** Three hours lecture. General introduction into field of urban design. Course divided into two areas of theory and practice as they relate to contemporary urban development.

**ARC 5733. Process. (3)** Three hours lecture, field visits. Intangible values in building and construction as arising from the nature of materials and methods of work.

**ARC 7000. Directed Individual Study.** Hours and credits to be arranged.

**ARC 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**ARC 8013 Seminar in Visualization Theory. (3)** (Prerequisite: Consent of the instructor). One hour lecture. Four hours laboratory. Lectures and presentation of student papers and projects related to a selected specialized topic.

**ARC 8023 Seminar in Digital Design Applications. (3)** (Prerequisite: Consent of the instructor). One hour lecture. Four hours laboratory. Lectures and presentations of student papers and projects related to a selected specialized topic in digital design applications.

**ARC 8113 Digital Design I. (3)** One hour lecture. Four hours laboratory. Application of high-performance computers and existing software in the design environment. Exploration of design processes through studies of modeling, motion, and lighting.

**ARC 8123. Digital Design II. (3)** (Prerequisite: ARC 8113). One hour lecture. Four hours laboratory. Customization of 3D-animation software. Emphasis on procedural modularity and automation to reduce the tedium of the modeling process and increase the attention given to design.

**ARC 8133 Articulated Motion. (3)** One hour lecture. Four hours laboratory. Application of existing software to generate motion studies of animate subjects and examinations of gaits. Integration of animated objects into designed settings.

**ARC 8143 Physically-Based Modeling. (3)** One hour lecture. Four hours laboratory. Applications of existing software to generate motion studies of dynamic and physically based phenomena. Simulation of these events in a 3D-computing environment.

**ARC 8213 Illumination I. (3)** One hour lecture. Four hours laboratory. In-depth exploration of color and light theory as a basis for exploring existing software illumination models. Customization of existing illumination models and creation of new models.

**ARC 8223 Illumination II. (3)** (Prerequisite: ARC 8213). One hour lecture. Four hours laboratory. Application of existing software to create advanced illumination models for lighting and rendering systems to meet design specifications.

**ARC 8233. Computational Media I. (3)** Three hours studio. Application of the design process to the creation of interactive computational artifacts with an emphasis on visual literacy, aesthetics and communication theory.

**ARC 8243. Computational Media II (3)** Three hours studio. Continuation of ARC 8233. Emphasis is placed upon the creation of web-based 'interactive illustrations', narrative form, and VRML/QTVR artifacts.

**ARC 8433 Digital Compositing. (3)** (Prerequisite: ARC 8513). One hour lecture. Four hours laboratory. Study of digital compositing and image processing, using software-based editing packages. Concepts of video editing and post production in a software computing environment.

**ARC 8443 Interactive Multimedia Authoring. (3)** (Prerequisites: ARC 8113, ARC 8213, ARC 8533). One hour lecture. Four hours laboratory. Study of techniques and methods of planning, writing, mastering, and debugging multimedia titles.

**ARC 8463 Story Telling in Computer Animation. (3)** (Prerequisite: Consent of the instructor). One hour lecture. Four hours laboratory. Customization of existing software/production tools for the transformation of a script into computer graphics imagery.

**ARC 8513 Digital Input Devices I. (3)** One hour lecture. Four hours laboratory. Input of empirical digitized data and integration into a 3D-computing environment. Exploration of rotoscoping, human-motion digitization, motion control camera synchronization, 3D-model digitizers, and peripheral devices.

**ARC 8523 Digital Input Devices II. (3)** (Prerequisite: ARC 8513). One hour lecture. Four hours laboratory. Use of software tools and computer animation to research, design, and develop a new digital input device.

**ARC 8533 Graphic Libraries I. (3)** One hour lecture. Four hours laboratory. Application of graphic libraries on high-performance computing platforms. Emphasis on the conversion of passive serial 3-D ani-



mations into interactive real-time animation titles for education and entertainment.

**ARC 8543 Graphics Libraries II. (3)** (Prerequisite: ARC 8533). One hour lecture. Four hours laboratory. Advanced graphics library topics. Authoring of interactive-3D titles for high-performance computing platforms.

**ARC 8643 Problem Solving in Virtual Space. (3)** (Prerequisite: ARC 4523/6523). One hour lecture. Four hours laboratory. Use of virtual environment technology to solve architectural problems. Investigations of architectonic form, space, lighting, and acoustics through class research projects.

## Department of ART

Office: 102 Freeman Hall

Professors Bartlett, Funderburk, Gootee, Mixon, and Seckinger;  
Associate Professors Chupa, De Marshe (Head) and Long;

Assistant Professors Elsea, Haupt, Livingston, Miller, McCourt, Ngoh and Runnells;  
Instructor Luck; Lecturers: Andrews, Faley, Knukson, Pagliaro, Poole, Sewell, and Stelioes-Wills;

**ART 1003. The Idea of Art. (3)** (Prerequisite: Art majors only or consent of instructor). Three hours lecture. An introduction to the process, concepts, media, and history of the visual arts, including contemporary issues, idea generating, and the language of visual form.

**ART 1013. Art History I. (3)** Three hours lecture. The study of art from prehistoric times to the Renaissance through the architecture, sculpture, painting and minor arts of the western world.

**ART 1023. Art History II. (3)** Three hours lecture. Art from the Renaissance to the present studied chronologically through the architecture, painting, sculpture, and minor arts of the western world.

**ART 1113. Art Appreciation. (3)** Three hours lecture. An illustrated lecture course dealing with periods, styles, and personalities in painting, sculpture, and architecture.

**ART 1123. Design I. (3)** Six hours studio. A basic study of the fundamental elements and principles of design with an emphasis on composition.

**ART 1133. Design II. (3)** (Prerequisite: ART 1123). Six hours studio. A continued study of the fundamental elements and principles of design with an emphasis on the theory and application of color.

**ART 1153. Three-Dimensional Design. (3)** (Prerequisites: ART 1123 or ARC 2536). Six hours studio. A study of the organization of the principles and elements of art as they apply to three-dimensional artwork.

**ART 1193. Honors in Art Appreciation. (3)** (Prerequisite: Open through invitation only). Three hours lecture. A critical study of periods, styles and personalities in painting, sculpture and architecture.

**ART 1213. Drawing I. (3)** Six hours studio. A freehand drawing course for students interested in visual arts. Basic vocabulary for graphic notation as explored utilizing observation, black and white media, and perspective.

**ART 1223. Drawing II. (3)** (Prerequisite: ART 1213). Six hours studio. A continuation of ART 1213 further developing conceptual and perceptual use of drawing tools, processes and materials. Black and white, and color media explored.

**ART 1303. Ceramic Art I. (3)** Six hours studio. Introduction to the processes of ceramic art including hand built forms, wheel thrown pottery and glazing.

**ART 2013. Painting I. (3)** (Prerequisites: ART 1123 and ART 1213). Six hours studio. The fundamentals of oil paintings and composition.

**ART 2023. Painting II. (3)** (Prerequisite: ART 2013). Six hours studio. A study of mediums and techniques in painting in continuation of ART 2013.

**ART 2033. Painting III. (3)** (Prerequisite: ART 2023). Six hours studio. Intermediate painting with further emphasis on the skills and techniques of painting.

**ART 2043. Painting IV. (3)** (Prerequisite: ART 2033). Six hours studio. A continuation of ART 2033 to further develop skill in the use of the medium and formal organization of subject matter in painting.

**ART 2163. History of Photography. (3)** Three hours lecture. The examination of the use of photography as an art form from 1850 to the present.

**ART 2203. Rendering. (3)** (Prerequisite: Sophomore Standing). Six hours studio. A course dealing with the concepts, techniques, and media used in executing interior and exterior renderings.

**ART 2213. Life Drawing I. (3)** (Prerequisites: ART 1213 and ART 1223). Six hours studio. A drawing class with emphasis on the basic forms and proportions of the human figure.

**ART 2223. Life Drawing II (3)** (Prerequisite: ART 2213). Six hours studio. Further study in rendering the human figure.

**ARC 8723. History and Philosophy of Digital Design Technology. (3)** Three hours lecture. Introduction to the field of visualization as it applies to visual design. Discussion of information technologies and their applications in the design fields.

**ARC 8990. Special Topics in Architecture. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ART 2233. Drawing III. (3)** (Prerequisite: ART 1223). Six hours studio. A continuation of ART 1223 to develop further drawing skills, use of mixed-media, surface variety and explorative concepts for advanced students.

**ART 2303. Printmaking I. (3)** (Prerequisites: ART 1123, ART 1133 and ART 1223). Six hours studio. Introduction to the basic techniques and concepts of lithography, relief printing-woodcut and linocut.

**ART 2313. Ceramic Art II. (3)** (Prerequisite: ART 1303). Six hours studio. Elementary glaze formulation, surface decoration, kiln firing, wheel thrown and hand built form.

**ART 2403. Sculpture I. (3)** (Prerequisite: ART 1123 and ART 1153 or permission of instructor). Six hours studio. Introduction to the basic concepts, materials, and processes of sculpture by exploring modeling, casting, carving and constructing.

**ART 2803. Introduction to Computing for Art. (3)** (Prerequisites: ART 1133 and Art 1223 or permission of instructor). One hour lecture. Four hours studio. Introduction to desktop computer hardware, operating systems, and application software in the visual arts and design.

**ART 2990. Special Topics in Art. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ART 3053. Watercolor Painting. (3)** (Prerequisites: ART 1133 and ART 1223). Six hours studio. The technique and use of various water-soluble painting mediums.

**ART 3103. Photography I. (3)** (Prerequisites: ART 1123 and ART 1213). One hour lecture. Four hours studio. The fundamentals and aesthetics of black and white photography relating to graphic design and the fine arts.

**ART 3143. Italian Renaissance Art History. (3)** Three hours lecture. The history of art in Italy in the fifteenth and sixteenth centuries, emphasizing the religious monuments of the period. (Same as REL 2143).

**ART 3153. African Art and Culture. (3)** (Prerequisite: AN 1103 or consent of instructor). Three hours lecture. An examination of the role of traditional art in the beliefs and customs of representative African cultures. (Same as AN 2153)

**ART 3303. Printmaking II. (3)** (Prerequisite: ART 2303). Six hours studio. Continued exploration of the print as a medium of creative expression.

**ART 3313. Graphic Art Design I. (3)** (Prerequisites: ART 1123, ART 1213 and ART 1223). Six hours studio. Introduction to the processes and techniques of commercial art. Beginning lettering and layout.

**ART 3323. Graphic Art Design II. (3)** (Prerequisite: ART 3313). Six hours studio. The execution of a series of design projects promoting an awareness of different forms of printed visual communication.

**ART 3423. Color Photography I. (3)** (Prerequisite: ART 3103 or permission of the instructor). One hour lecture. Four hours studio. The techniques and aesthetics of basic photographic processes in color.

**ART 3443. Illustration. (3)** (Prerequisites: ART 2013 and ART 3053). Six hours studio. A course introducing issues and instrumentalizations related to standards in the professional field of illustration emphasizing mixed-media processes.

**ART 3513. Sculpture II. (3)** (Prerequisite: ART 2403). Six hours studio. Further exploration of concepts and processes of sculpture, including mold making and armature building. Beginning development of personal language of expression.

**ART 3603. Directed Writings in Modern Art History. (3)** (Prerequisites: ART 1013 and ART 1023). Three hours lecture. History of 20th Century art with emphasis on scholarly writing, reading, and analysis of contemporary models and varieties of writing.

**ART 3703. Jewelry/Metals. (3)** Six hours studio. Introduction to the materials and techniques used in the design and execution of jewelry and associated metalwork.

**ART 3803. Gallery Management. (3)** (Prerequisite: ART 1123 and ART 1213). One hour lecture. Four hours laboratory. The study of gallery operations, techniques of curation, artists ethics, installation procedures and gallery management of an art gallery.

**ART 3873. Digital Photography. (3)** (Prerequisites: ART 3103 and ART 3423 or permission of instructor). Six hours studio. The techniques and aesthetics of digital imagery emphasizing the use of traditional photographic input and output processes.

**ART 4000. Directed Individual Study.** Hours and credits to be arranged.

**ART 4013/6013. Advanced Painting. (3)** (Prerequisite: ART 2043). Six hours studio. Advanced study in painting with emphasis on the student's personal needs and interests.

**ART 4083. Senior Honors Research in Art. (3)** (Prerequisites: Senior standing, and consent of instructor). The application of research methods for the fine artist in contemporary society.

**ART 4093. Senior Honors Thesis in Art. (3)** (Prerequisites: ART 4083, or consent of instructor). (Co-requisite: enrollment in studio emphasis course). The proposal, development and execution of a project or exhibition.

**ART 4103/6103. The Art of Typography and Layout I. (3)** Six hours studio. The art and process of presenting written communication in graphic form.

**ART 4113/6113. The Art of Typography and Layout II. (3)** (Prerequisite: ART 4103/6103). Six hours studio. Advanced problems in presenting written communication in graphic form. Advanced problems as well as additional projects will be required for graduate credit.

**ART 4133/6133. Watercolor II. (3)** (Prerequisite: ART 3053). Six hours studio. Further investigation of ideas, techniques, instrumentations and watermedia history introduced in ART 3053 with emphasis on non-brush/multi-media approaches. Graduate level requires additional and advanced projects.

**ART 4203/6203. Photography II. (3)** (Prerequisite: ART 3103 or permission of instructor). One hour lecture. Four hours studio. Advanced techniques of photographic processes in black and white with emphasis on aesthetics.

**ART 4223/6223. Photography III. (3)** (Prerequisite: ART 3103 or permission of the instructor). One hour lecture. Four hours studio. Alternative photographic processes in black and white with emphasis on aesthetics.

**ART 4343/6343. Drawing IV. (3)** (Prerequisite: ART 2233 at both levels and consent of instructor for 6343). Six hours studio. A continuation of ART 2233 to develop further skills for advanced students.

**ART 4403/6403. Advertising Design I. (3)** (Prerequisite: ART 3323, ART 4103/6103, and consent of instructor). Six hours studio. Course requiring ideational, image making, graphic design and typographic skills to meet rigorous conceptual/visual standards pertinent to creating a brand of a company's identity.

**ART 4413/6413. Advertising Design II. (3)** (Prerequisite: ART 4403/6403 and consent of instructor). Six hours studio. An advanced course requiring interaction on a professional level, working with realistic agency-client situations in order to develop efficient, distinguishable and competitive promotional campaigns.

**ART 4433/6433. Color Photography II. (3)** (Prerequisite: ART 3423 or permission of the instructor). One hour lecture. Four hours studio. Advanced techniques of photographic processes in color with emphasis on aesthetics.

**ART 4443/6443. Alternative Color. (3)** (Prerequisites: ART 3103 and ART 3423 and permission of instructor). One hour lecture and four hours studio. Advanced problems in color photography utilizing the dye transfer and polaroid processes. Additional projects for graduate credit.

**ART 4523/6523. Internship in Graphic Art Design. (3)** (Prerequisites: ART 3313, senior standing and consent of the instructor). Supervised instruction in graphic design. Advanced problems will be required for graduate credit.

**ART 4533. Ceramic Art III. (3)** (Prerequisites: ART 2313). Six hours studio. Advanced problems in glaze formulation, kiln technology and wheel thrown and hand built forms.

**ART 4543/6543. Art and Architecture of Japan. (3)** (Prerequisite: ART 1113, 1013, 1023, or consent of instructor). Three hours lecture. Discussion of the major developments in the art and architecture of Japan.

**ART 4563/6563. Art of India and Southeast Asia. (3)** (Prerequisite: One of the following: ART 1113, 1013, 1023, HI 1163, REL 1103, 3453). Three hours lecture. Discussion of the major developments in the art and architecture of India and Southeast Asia, 200 B.C. to 1200 A.D.

**ART 4573/6573. Critical Issues in Recent Art. (3)** (Prerequisite: ART 3603 or an equivalent course on 20th century art and consent of the instructor). Three hours lecture. Discussion of major developments and issues in contemporary art, focusing on the period 1980 to present.

**ART 4603/6603. Advanced Studio - Drawing. (3)** May be taken for credit more than once. (Prerequisites: ART 4343 and permission of instructor). Six hours studio. Advanced study in drawing. Further development of studio skills. Course encourages analysis and criticism, development of personal aesthetic, and further exploration of content and expression.

**ART 4613/6613. Advanced Studio - Painting. (3)** May be taken for credit more than once. (Prerequisite: consent of instructor). Six hours studio. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues.

**ART 4623/6623. Advanced Studio - Printmaking. (3)** May be taken for credit more than once. (Prerequisite: consent of instructor). Six hours studio. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues.

**ART 4633/6633. Advanced Studio - Sculpture. (3)** May be taken for credit more than once. (Prerequisite: ART 3513). Six hours studio. Further development of a personal sculptural aesthetic through media of choice.

**ART 4643/6643. Advanced Studio - Graphic Design. (3)** May be taken for credit more than once. (Prerequisite: consent of instructor). Six hours studio. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues.

**ART 4653/6653. Advanced Studio - Ceramics. (3)** May be taken for credit more than once. (Prerequisite: consent of instructor). Six hours studio. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues.

**ART 4663/6663. Advanced Studio - Photography. (3)** May be taken for credit more than once. (Prerequisite: Consent of instructor). Six hours studio. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues.

**ART 4673/6673. Advanced Art History. (3)** May be taken for credit more than once. (Prerequisite: consent of instructor). Three hours lecture. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues.

**ART 4693/6693. Internship in Fine Art. (3)** May be taken for credit more than once. (Prerequisite: Consent of department head). Six hours laboratory. Supervised instruction and experience for professional art practice.

**ART 4813/6813. Introduction to Multimedia I Design and Authoring. (3)** (Prerequisite: Consent of instructor). One hour lecture, five hours laboratory. The design and authoring of interactive multimedia for fine and applied arts using desktop computers. Course encourages analysis and criticism of aesthetic and related issues.

**ART 4823/6823. Multimedia II and Electronic Publishing. (3)** (Prerequisite: ART 4813/6813 and consent of instructor). Six hours laboratory. Interactive multimedia and electronic publication for fine and applied arts using desktop computers. Course encourages analysis and criticism of aesthetic, social, ethical and related issues.

**ART 4833/6833. Computer Animation I. (3)** (Prerequisite: Consent of instructor). Six hours lecture and laboratory. An introduction to Computer Animation. Basic concepts in the building of 3D objects, color, texture mapping, lighting, ray-tracing, and the writing of motion data.

**ART 4843/6843. Computer Animation II. (3)** (Prerequisite: ART 4833/6833) Six hours lecture and lab. Advanced techniques and special effects: customizing directory structures in the unix environment, complex modeling techniques, animation of object attributes, and creation of motion data.

**ART 4853/6853. Electronic Imaging. (3)** (Prerequisites: ART 1213 and ART 1223 or equivalent). Six hours lecture and lab. Instruction in the automation of traditional illustration techniques. Both raster and vector files are created and used with a variety of hardware peripherals. Fall Semester.

**ART 4863/6863. Advanced Studio - Computer Art and Design. (3)** May be taken for credit more than once. (Prerequisite: Consent of instructor). Six hours laboratory. This course develops advanced studio skills and professional practice. Course encourages analysis and criticism of aesthetic, social, ethical and related issues.

**ART 4873/6873. Digital Imaging I. (3)** (Prerequisite: ART 3103 and ART 2803, or consent of instructor) Six hours laboratory. Application of computer software to generate electronic images captured by tra-

ditional photographic means. Advanced problems and additional projects will be required for graduate credit.

**ART 4990/6990. Special Topics in Art. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ART 6683. Introduction to Animation/Multimedia. (3)** (Prerequisite: Acceptance into the MFA program in Art or the MS program in Architecture, or consent of instructor). One hour lecture. Five hours studio. Introduction to basic animation and multimedia principles and practice.

**ART 6763. Sequential Art I. (3)** Six hours studio. Readings on sequential art and the history of traditional and computer animation inform students working in traditional forms and techniques of temporal composition.

**ART 7000. Directed Individual Study.** Hours and credits to be arranged.

**ART 8013. Computer Animation III. (3)** (Prerequisite: ART 6833 and ART 6843). Six hours studio. Image processing, compositing, and managing complexity with basic programming techniques for computer-generated images and animations.

**ART 8023. Computer Animation IV. (3)** (Prerequisites: ART 6833, ART 6843, and ART 8013). Six hours studio. Based upon readings within the historical, critical, philosophical and applied contexts of computer graphics, animation and art, students focus on content development in their work.

**ART 8033. Experimental Animation. (3)** (Prerequisites: ART 6873, ART 6763, ART 8043 or consent of instructor). One hour lecture. Four hours laboratory. Course exercises and individual projects extend the technical palette and visual vocabulary of the experimental animator, with emphasis on the maturation of personal vision/aesthetic.

**ART 8043. Seminar in Electronic Visualization I. (3)** Six hours studio. Seminar in contemporary issues critical to electronic visualization and digital media.

**ART 8073. Advanced Studio: Computer Art and Design. (3)** (Prerequisite: ART 6863. Must be taken with co-requisite, ART 6823, ART 6843, ART 8013, ART 8023, or ART 8103). Class assignments for this course will coincide with those assigned for Animation II, Animation III, Animation IV, Multimedia II, Multimedia III. This class will serve as a laboratory for these classes.

**ART 8083. Theory of Visual Communication. (3)** Three hours lecture. Study of the theories of sign and visual communication.

**ART 8103. Multimedia III. (3)** (Prerequisite: ART 6813 and ART 6823 or permission of the instructor). Two hours lecture. Four hours studio. Independent assignments in interactive multimedia authoring incorporating multiple elements: content development, graphic design, image editing and compositing, digital video, sound editing.

**ART 8123. Multimedia Installation and Performance. (3)** (Prerequisite: ART 8103 or consent of instructor). One hour lecture. Five hours studio. Coursework relates advanced interactivity concepts in computer-based multimedia to the broader context of performance art and installation for alternate as well as gallery settings.

**ART 8163. Advanced Digital Imaging. (3)** Six hours studio. Application of existing software to generate electronic images captured by traditional and non-traditional photographic means.

**ART 8603. Advanced Figurative Studio. (3)** (Prerequisite: Six hours undergraduate life drawing courses or consent of instructor). Six hours studio. An advanced studio course in drawing, painting, and/or digital media utilizing the human figure as subject.

**ART 8990. Special Topics in Art. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## AIR FORCE AEROSPACE STUDIES

Office: Second Floor, Middleton Hall

Col Yankee, Capt Peachey, and Capt Shapleigh

**AS 1012. The Air Force Today-I. (2)** Fall semester. One hour lecture. One hour practicum. Surveys Air Force's role in contemporary world. Emphasis on strategic offensive and defensive forces.

**AS 1022. The Air Force Today-II. (2)** Spring Semester. One hour lecture. One hour practicum. A continuation of AS 1012 with emphasis on general purpose and support forces.

**AS 2012. The Development of Air Power-I. (2)** Fall semester. One hour lecture. One hour practicum. Study of air power development and employment in support of national objectives and an examination of the evolution of air power concepts and doctrine.

**AS 2022. The Development of Air Power-II. (2)** Spring semester. One hour lecture. One hour practicum. A continuation of AS 2012 with emphasis on air power since WWII.

**AS 2990. Special Topics in Aerospace Studies. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**AS 3013. Air Force Leadership Studies-I. (3)** (Prerequisites: AS 1012, AS 1022, AS 2012, and AS 2022 or permission of instructor). Fall semester. Three hours lecture. Two hours practicum. An integrated management course emphasizing leadership/management concepts and skills. Examines motivational and behavioral processes, leadership com-

munication, decision making, ethics, organizational power, and managerial strategy.

**AS 3023. Air Force Leadership Studies-II. (3)** (Prerequisites: AS 1012, AS 1022, AS 2012, AS 2022, and AS 3013 or permission of instructor). Spring semester. Three hours lecture. Two hours practicum. A continuation of AS 3013.

**AS 4013. National Security Affairs and Preparation for Active Duty-I. (3)** (Prerequisites: AS 1012, AS 1022, AS 2012, AS 2022, AS 3013, and AS 3023 or permission of instructor). Fall semester. Three hours lecture. Two hours practicum. Study of U.S. National Security Policy. Examines formulation, organization, and implementation of national security. Includes ethics, civil-military interaction, technology, and Laws of War.

**AS 4023. National Security Affairs and Preparation for Active Duty-II. (3)** (Prerequisites: AS 1012, AS 1022, AS 2012, AS 2022, AS 3013, AS 3023, and AS 4013 or permission of instructor). Spring semester. Three hours lecture. Two hours practicum. A continuation of AS 4013.

**AS 4990. Special Topics in Aerospace Studies. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Department of AEROSPACE ENGINEERING

Office: 330 Walker Engineering Laboratories

Professors Edwards, Koenig, Lawrence, Newman, Jr., Rais-Rohani, Thompson;  
Associate Professors Bridges, Cinnella, Gatlin (Interim Head), Janus, Newman III;  
Assistant Professor King;  
Instructor Hannigan

**ASE 1013. Introduction to Aerospace Engineering. (3)** (Prerequisite: credit or co-registration in MA 1713). Three hours lecture. Three hours laboratory. Historical perspectives of aerospace engineering and fundamentals of aerodynamics, the standard atmosphere, computer modeling and manufacturing, information technology, programming environments, computational tools.

**ASE 1023. Introduction to Flight Mechanics. (3)** (Prerequisite: ASE 1013). Three hours lecture. Three hours laboratory. Introduction to airfoils, wings, and other aerodynamic shapes, elements of airplane performance, principles of stability and control, applications of computer modeling, computational tools, historical perspectives.

**ASE 2013. Astrodynamics, Propulsion and Structures. (3)** (Prerequisite: ASE 1023). Three hours lecture. Three hours laboratory.

Introduction to space flight (astronautics), propulsion, flight vehicle structures and materials, and hypersonic vehicles, applications of computer modeling, computational tools, with historical perspectives.

**ASE 2113. Flight Mechanics I—Performance. (3)** (Prerequisite: EM 2413). Three hours lecture. Introduction to general aerodynamics, propulsive and structural considerations of flight mechanics, quasi-steady flight; non-steady flight; maneuvering flight; high performance vehicles.

**ASE 2990. Special Topics in Aerospace Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ASE 3123. Static Stability and Control. (3)** (Prerequisites: ASE 2013, EM 2433). Three hours lecture. Longitudinal, directional, and lateral static stability and control; related aerodynamics; maneuvering flight; introduction to dynamic stability and control analysis methods; general equation of unsteady motion.

**ASE 3213. Aircraft Structures I. (3)** (Prerequisite: EM 3213). Three hours lecture. Introduction to structural materials and loads. Deflection analysis using energy methods, flexibility-based matrix method, and the finite element method. Influence of design on deflection and vice versa.

**ASE 3223. Aircraft Structures II. (3)** (Prerequisite: EM 3213). Three hours lecture. Stress analysis of elastic and inelastic structures under different loading conditions. Shear flow distribution in thin-wall structures. Influence of design on stress and shear flow distributions.

**ASE 3313. Incompressible Aerodynamics. (3)** (Prerequisite: EM 3313). Three hours lecture. Potential theory of bodies; airfoil theory and applications; finite wing theory and applications; introduction to Navier-Stokes equations; laminar boundary layers; turbulent boundary layers.

**ASE 3333. Gas Dynamics. (3)** (Prerequisites: MA 2733, PH 2213). Three hours lecture. Energy; First and Second Laws of Thermodynamics; Entropy; Properties of Ideal Gases; One-dimensional Compressible Flow; Normal Shocks; Reactive Mixtures.

**ASE 4000. Directed Individual Study.** Hours and credits to be arranged.

**ASE 4113. Aerospace Engineering Laboratory I. (3)** (Prerequisites: Credit or registration in EM 3413 and ECE 3283). Six hours laboratory. Experimental techniques used in aerospace engineering; course requirements include individual research and formal research papers.

**ASE 4123. Dynamic Stability and Control. (3)** (Prerequisite: ASE 3123). Three hours lecture. Methods of dynamic analysis; stability of steady flight; response to actuation of the controls (open loop); closed-loop control; human pilots and handling qualities.

**ASE 4133/6133. Automatic Control of Aerospace Vehicles. (3)** (Prerequisite: ASE 4123). Three hours lecture. Optimization techniques; structural flexibility effects; statistical design; sample-data control systems.

**ASE 4143. Astrodynamics I. (3)** (Prerequisites: EM 2433, MA 3253). Three hours lecture. Particle mechanics; Keplerian mechanics; geometry of spatial orbits; orbit determination; orbits determined from relative velocity; elements of analytical dynamics.

**ASE 4153/6153. Advanced Performance. (3)** (Prerequisite: ASE 2013). Three hours lecture. Performance methods used for current aeronautical vehicles. Configurations considered are sailplanes, V/STOL aircraft, subsonic/supersonic transports, and fighters.

**ASE 4233/6233. Structural Dynamics. (3)** (Prerequisite: EM 3413). Three hours lecture. Influence coefficients; matrix methods; Lagrange's equations of motion; divergence of an airfoil; introduction to flutter.

**ASE 4243/6243. Astrodynamics II. (3)** (Prerequisite: ASE 4143). Three hours lecture. Orbital mechanics, orbit determination, perturbations and numerical integration. Global positioning system, launch performance, and optimization.

**ASE 4333/6333. Helicopter Aerodynamics and Performance. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Aerodynamics of hovering, vertical, and forward flight. Momentum and blade element methods. Performance analysis, power losses, and drag in hover, climb, and cruise.

**ASE 4343. Compressible Aerodynamics. (3)** (Prerequisites: ASE 3333, EM 3313). Three hours lecture. Equations of motion for multidimensional flow; oblique shock waves; Prandtl Meyer flow; internal flow; method of characteristics; linearized flows; compressible wing theory; compressible boundary layers.

**ASE 4413. Aerospace Propulsion. (3)** (Prerequisites: ASE 3333 and ASE 4343). Three hours lecture. Aerothermodynamics of aircraft and rocket engines; propellers; nozzles; engines; turbines; compressors; diffusers; liquid propellants, solid propellants, rocket engine design.

**ASE 4423/6423. Introduction to Computational Fluid Dynamics. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Elementary aspects of computational fluid dynamics (CFD); review of numerical analysis and fluid mechanics as pertinent to CFD; numerical solution of selected fluid dynamic problems.

**ASE 4433/6433. Fundamentals of Numerical Grid Generation. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Discret representation of partial differential equations and applications of grid generation in their computer-oriented solutions; coordinate transformations, computer geometry design techniques.

**ASE 4613. Systems Design. (3)** (Prerequisites: ASE 4343, ASE 4123, ASE 3213). Two hours lecture, three hours laboratory. Problem synthesis; layout; weight analysis; aerodynamics; parameters; thermal

environment; propulsion analysis; human factors; structural analysis; system optimization; cost effectiveness.

**ASE 4623. Aircraft Structures III. (3)** (Prerequisite: ASE 3223). Three hours lecture. Principles of design and manufacture of aircraft structures. General theories of stability and failure with applications. Design optimization, fabrication, and testing of structural members.

**ASE 4713/6713. Engineering Acoustics. (3)** (Prerequisite: EM 3413 or consent of instructor). Three hours lecture. Sonics, ultrasonics, wave equation, plane and spherical waves, wave propagation in air, liquids, elastic solids, reflection phenomena, absorption, scattering, acoustic sources and sensors, engineering applications.

**ASE 4721. Aerospace Engineering Laboratory II. (1)** (Prerequisite: ASE 4113). Three hours laboratory. Experimental techniques used in aerospace engineering.

**ASE 4990/6990. Special Topics in Aerospace Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ASE 7000. Directed Individual Study.** Hours and credits to be arranged.

**ASE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**ASE 8113. Advanced Guidance and Control of Vehicles. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Trajectory aspects of guidance; sensors for aerospace vehicle guidance; satellite dynamics; passive and active satellite control; boost glide and re-entry guidance and control.

**ASE 8123. Optimization of Performance and Controls. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Theory of optimal control: optimum flight paths; direct and indirect methods of the calculus of variations. Numerical methods.

**ASE 8313. Advanced Compressible Aerodynamics I. (3)** (Prerequisite: ASE 4343 or equivalent). Three hours lecture. Derivation of complete equations for compressible fluid flow; unsteady one-dimensional flows; method of characteristics; flow about two-dimensional, and axis-symmetric shapes; integral methods.

**ASE 8323. Advanced Compressible Aerodynamics II. (3)** (Prerequisite: ASE 8313). Three hours lecture. Perturbation theory for wings and bodies; optimum wing and body shapes; wing-body interference; transonic flows, hypersonic flows.

**ASE 8333. Physical Gasdynamics. (3)** (Prerequisites: ASE 4343 and consent of instructor). Three lecturers. Real gas effects, equilibrium and non-equilibrium processes in fluid dynamics. Elements of chemical thermodynamics, kinetic theory, statistical mechanics, hypersonic gasdynamics.

**ASE 8343. Incompressible Viscous Laminar Flow. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Incompressible Navier-Stokes equations; properties and exact solutions; laminar boundary layer equations; two- and three-dimensional solutions; time-dependent solutions; approximate solutions; boundary layer control.

**ASE 8353. Turbulent Flow. (3)** (Prerequisite: ASE 8343). Three hours lecture. Origins of turbulence; stability statistical theory of turbulence; isotropic and non-isotropic turbulence; equations of turbulent flow; turbulent boundary layer; free turbulent flow.

**ASE 8363. Computational Heat Transfer. (3)** (Prerequisite: Consent of Instructor). Three hours lecture. Application of numerical techniques to elliptic and parabolic problems in engineering heat transfer and fluid flow. Discretization techniques; linearization; stability analysis. (Same as ME 8363).

**ASE 8413. Computational Fluid Dynamics I. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Review of relevant numerical analysis; one dimensional methods; compressible inviscid methods, Euler Equation methods, inviscid-viscous interaction methods; current literature.

**ASE 8423. Computational Fluid Dynamics II. (3)** (Prerequisite: ASE 8413 or equivalent). Three hours lecture. Compressible viscous methods; Navier-Stokes equation methods; turbulence models; incompressible methods; panel methods; finite element methods, current literature.

**ASE 8533. Advanced Numerical Grid Generation. (3)** (Prerequisite: ASE 4433/6433 or consent of instructor). Three hours lecture. Structured-unstructured hybrid composite grid configurations, truncation error analysis, direct-indirect grid generation methods, grid refinement, adaptive gridding.

**ASE 8990. Special Topics in Aerospace Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ASE 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of **BIOCHEMISTRY** and **MOLECULAR BIOLOGY**

Office: 402 Dorman Hall

Professors Boyle (Head), Luthe, Ma, Reichert, Wilson and Wood;  
Associate Professor Willeford; Assistant Professors Jung and Peng

**BCH 1001. Introduction to Biochemistry. (1)** One hour lecture. A course to acquaint the beginning students with the overall concepts of biochemistry and molecular biology. Current research will be described. Offered every year.

**BCH 2990. Special Topics in Biochemistry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BCH 3613. Elementary Biochemistry. (3)** (Prerequisite: CH 2503). Three hours lecture. A terminal course which deals with a study of the structural and metabolic relationships of carbohydrates, lipids, protein, nucleic acids, enzymes, and vitamins.

**BCH 3901. Senior Seminar. (1)** (Prerequisite: BCH 4613/6613). Each student will prepare and present a formal paper based on independent study of the literature and undergraduate research investigations.

**BCH 4000. Directed Individual Study.** Hours and credits to be arranged.

**BCH 4414/6414. Radioisotope Techniques I. (4)** Two hours lecture. Four hours laboratory. Characteristics of radioisotopes; detection and counting techniques and instrumentation; tracer techniques; health and safety systems.

**BCH 4603-4613/6603-6613. General Biochemistry. (3-3)** (Prerequisites: CH 4523/6523 or consent of instructor). Three hours lecture. BCH 4603/6603 must be completed before student may enroll in BCH 4613/6613. Detailed studies of the structure and metabolism of carbohydrates, lipids, proteins, nucleic acids, enzymes, and coenzymes.

**BCH 4623/6623. Biochemistry of Specialized Tissues. (3)** (Prerequisite: Coregistration in BCH 4613/6613). A continuation of BCH 4613/6613 to include a study of specialized tissues, hormones, acid-base balance in animals and other physiological parameters of biochemistry.

**BCH 4713/6713. Molecular Biology (3)** (Prerequisite: Coregistration in BCH 4613/6613). Three hours lecture. A study of basic molecular process such as synthesis of DNA, RNA, and protein in both prokaryotic and eukaryotic cells. Offered fall semester. (Same as GNS 6713).

**BCH 4805/6805. Biochemical Methods. (5)** (Prerequisite: Coregistration in BCH 4613/6613). One hour lecture. Eight hours laboratory. A comprehensive course to teach the student the modern methods of biochemistry including molecular biology. (Same as GNS 6805).

**BCH 4990/6990. Special Topics in Biochemistry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses.

**BCH 7000. Directed Individual Study.** Hours and credits to be arranged.

**BCH 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**BCH 8101. Seminar. (1)** Review of current literature; individual presentation of research or classical topics.

**BCH 8133. Biochemical Oxidations and Bioenergetics. (3)** (Prerequisite: BCH 4613/6613). Three hours lecture. A comprehensive examination of oxidative processes in bacterial plant and animal systems resulting in the generation of energy needed in metabolism.

**BCH 8243. Molecular Biology of Plants. (3)** (Prerequisite: Coregistration in BCH 4613/6613). Three hours lecture. A study of plant development at the molecular level. Emphasis will be placed on the influence of nucleic acid metabolism on plant development.

**BCH 8613. Membrane Biochemistry. (3)** (Prerequisite: BCH 4603/6603). Three hours lecture. Advanced coverage of current knowledge pertaining to biological membrane structure, function, and chemistry.

**BCH 8623. Physical Biochemistry. (3)** (Prerequisites: CH 4423/6423 and Coregistration in BCH 4613/6613). Three hours lecture. Principles of thermodynamics, hydrodynamics, spectroscopy, NMR, X-ray diffraction, and sequence determination are applied to soluble and crystalline biological macromolecules and systems.

**BCH 8633. Enzymes. (3)** (Prerequisites: BCH 4613/6613). Three hours lecture. A study of enzymes; their purification, classification, kinetics and mechanisms.

**BCH 8643. Molecular Genetics. (3)** (Prerequisites: PO 3103, or BIO 3103, and Coregistration in BCH 4613/6613). Three hours lecture. Study of the gene and its expression with emphasis on structure and function in higher organisms. (Same as GNS 8643).

**BCH 8654. Intermediary Metabolism. (4)** (Prerequisite: BCH 4613/6613). Four hours lecture. An advanced in-depth study of anabolic and catabolic pathways involved in cellular metabolism. Bioenergetics and control mechanisms will be emphasized.

**BCH 8990. Special Topics in Biochemistry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BCH 9000. Dissertation Research/Dissertation. (1-9)** Hours and credit to be arranged.

## Department of **BIOLOGICAL SCIENCES**

Office: 130 Harned Biology Building

Professors Altig, Brown, Buddington, Chambers\*, Champlin, Diehl, Dorough, Downer (Head), McDaniel, St. Cyr Coats, Sullivan, and Wise;

Associate Professors Thibaudeau and Williams

Assistant Professors Courcelle, Pinchuk, Price, Rooney, Taylor, and Welborn

Instructors Fuquay, Holder and Williamson.

**BIO 1001. Biology Laboratory. (1)** Three hours laboratory. Accompanies BIO 1033. May be used also as AP credit to satisfy one hour Biology, Botany, or Zoology laboratory. Selected exercises to illustrate fundamental concepts of biology.

**BIO 1004. Anatomy and Physiology. (4)** Three hours lecture. Two hours laboratory. For non-science majors. The structure and function of the human body with special emphasis on the muscular, nervous, circulatory, respiratory, digestive, urinary and reproductive systems. (Fall and Spring).

**BIO 1023. Plants and Humans. (3)** Two hours lecture. Two hours laboratory. For non-science majors. Students may not have credit for both BIO 1023 and BIO 1203 nor for both **BIO 1023** and BIO 1033, nor for both BIO 1023 and general biology courses transferred from other institutions. A survey of botany intended to introduce students to the world of plants, particularly emphasizing their relationships with humans and society. (Fall and Spring).

**BIO 1033. Biological Science. (3)** Three hours lecture. Students may not have credit for both BIO 1033 and BIO 1023, nor for both BIO 1033 and BIO 1123. Basic principles and modern concepts pertaining to levels of biological organization from cell to biosphere and life forms of biological kingdoms.

**BIO 1053. Introduction to Natural History. (3)** Two hours lecture. Three hours laboratory. For Elementary Education majors. Introduction to the ecosystems and ecological processes while learning to identify plants and animals of Mississippi.

**BIO 1063. Natural History of Coastal Environments. (3)** Two hours lecture. Three hours laboratory. Introduction to the flora and fauna of coastal areas and interactions between living and non-living components of the ecosystem.

**BIO 1073. Biology of Human Reproduction. (3)** Three hours lecture. A study of human reproduction. Principles of human reproductive anatomy and physiology, endocrine functions, pregnancy, contraception, sexually transmitted disease and human genetics.

**BIO 1123. Animal Biology. (3)** Two hours lecture. Two hours laboratory. For non-science majors. Students may not have credit for both BIO 1123 and BIO 1504. Basic understanding of life processes, diversity, inheritance, reproduction, ecology, and evolution. (Fall and Spring).

**BIO 1143. Community Health. (3)** Three hours lecture. An in-depth study of factors affecting community health including disease, drugs, pollution, immunity, nutrition, heredity and socioeconomic conditions.

**BIO 1203. Plant Biology. (3)** Two hours lecture. Three hours laboratory. (Students may not have credit for both BIO 1023 and BIO 1203.) An introduction to the biology of flowering plants. Topics include plant physiology, anatomy and morphology, development, genetics and evolution. (Offered each semester).

**BIO 1213. Survey of Plant and Fungi Kingdoms. (3)** Two hours lecture. Three hours laboratory. A survey of algae, bryophytes, vascular plants, and fungi, with emphasis on morphology, internal anatomy, life cycles, fossil record, and evolutionary relationships. (Spring).

**BIO 1301. Perspectives in Medical Technology. (1)** One hour lecture. A survey of all aspects of medical technology. (Fall).

**BIO 1504. Principles of Zoology. (4)** Three hours lecture. Three hours laboratory. For science majors. Students may not have credit for both BIO 1123 and BIO 1504. Introduction to animal biology, including genetics, embryology, physiology, cell biology, ecology and behavior. (Fall and Spring).

**BIO 2004. Human Anatomy. (4)** Three hours lecture. Three hours laboratory. The study of the structure of the human body. The gross and microscopic anatomy of each organ system will be presented. (Fall and Spring).

**BIO 2014. Human Physiology. (4)** Three hours lecture. Three hours laboratory. Survey of physiological systems and principles and their interrelationship in humans. Designed for paramedical and pre-nursing students and dietetic majors. (Spring).

**BIO 2101. Cell Biology Laboratory. (1)** (Prerequisites: Sophomore standing and credit for concurrent enrollment in BIO 2103). Two hours laboratory. Laboratory to accompany BIO 2103.

**BIO 2103. Cell Biology. (3)** (Prerequisites: 6 hours of biology, CH 1223). Three hours lecture. A comparative study of cell structure among plant, animal and bacterial systems. (Fall/Spring).

**BIO 2213. Survey Plant Kingdom. (3)** Two hours lecture. Two hours laboratory. A survey of algae, bryophytes, vascular plants, and fungi, with emphasis on morphology, internal anatomy, life cycles fossil record, and evolutionary relationships. (Spring).

**BIO 2503. Environmental Quality. (3)** (Prerequisite: One course in biology). Three hours lecture. Relevance of ecological principles to environmental problems and relationships of humans with their environment with emphasis on preservation of environmental quality. (Fall)

**BIO 2990. Special Topics in Biology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BIO 3013. Professional Writing for Biologists. (3)** (Prerequisite: Junior/Senior standing in BIO, MIC, or MDT, or consent of instructor). Three hours lecture. Refinement of writing skills for more effective communications. Assignments to include routine and specialized correspondence, technical reports, and speech preparation and delivery. (Fall/Spring).

**BIO 3103. Genetics I. (3)** (Prerequisites: MA 1313. BIO 1504 or BIO 1203, or equivalents). (Same as PO 3103 and GNS 3103).

**BIO 3104. Ecology. (4)** (Prerequisite: BIO 1504). Three hours lecture. Three hours laboratory. A general survey of ecological principles and concepts pertaining to plants and animals with reference to ecosystem structure and function, and interactions among ecosystem components. (Fall).

**BIO 3113. Marine Biology. (3)** (Prerequisite: BIO 1504 or equivalent.) Three hours lecture. An introduction to marine environments, the diversity of life in the different marine habitats and human utilization of marine resources. (Spring)

**BIO 3303. Parasitology. (3)** (Prerequisite: BIO 1504 or equivalent). Two hours lecture. Three hours laboratory. A survey of parasitology to include parasites of importance to the health of humans and domestic animals. (Fall).

**BIO 3304. General Microbiology. (4)** (Prerequisites: CH 1053 or CH 1223). Two hours lecture. Four hours laboratory. For science majors. Fundamentals; techniques in staining and culture of microorganisms. (Fall/spring).

**BIO 3403. Parasitology. (3)** (Prerequisite: BIO 1504 or equivalent). Two hours lecture. Three hours laboratory. A survey of parasitology to include parasites of importance to the health of humans and domestic animals. (Same as BIO 3303). (Fall).

**BIO 3404. Bacterial Cultivation. (4)** (Prerequisites: BIO 3304 and CH 4513 or coregistration in CH 4513). Two hours lecture. Four hours laboratory. A continuation of 3304. General principles of microbiology with emphasis on cultivation of bacteria. (Fall/Spring).

**BIO 3504. Comparative Anatomy. (4)** (Prerequisite: BIO 1504). Two hours lecture. Six hours of laboratory. The vertebrate animals; relationships of organs and systems; and their phylogenetic significance. (Fall).

**BIO 3514. Invertebrate Zoology. (4)** (Prerequisite: BIO 1504). Three hours lecture. Three hours laboratory. Invertebrate organisms with emphasis on structure, function, taxonomy, phylogeny and life histories. (Spring, odd years).

**BIO 3524. Biology of Vertebrates. (4)** Two hours lecture, three hours laboratory. Evolution, systematics, ecology and behavior of vertebrates. Laboratory includes classification of major groups, identification of species, field trips, and experiments in behavior and physiological ecology. (Spring).

**BIO 4000. Directed Individual Study.** Hours and credits to be arranged.

**BIO 4011. Senior Thesis in Biological Sciences. (1)** (Prerequisites: BIO 4013 with a grade of B or better and consent of department head and thesis committee). Writing of the undergraduate thesis under the direction of the major advisor.

**BIO 4013. Senior Research in Biological Sciences. (3)** (Prerequisites: Senior standing, consent of department head, 3.00 GPA in biology courses, and major in biological sciences). Conduct original research for eventual writing of undergraduate thesis.

**BIO 4100. Med Tech Clinicals. (3-19)** (Prerequisite: consent of instructor). Medical Technology Clinical Internship.

**BIO 4103/6103. Experimental Genetics. (3)** (Prerequisites: BIO 3103 or consent of instructor). Six hours laboratory. Mechanisms of transmission of genetic information with first-hand experience in inducing such mechanisms from experimental data. Emphasis is on lab. (Fall/Spring).

**BIO 4113/6113. Evolutionary Biology. (3)** Three hours lecture. Historical development of evolutionary theory; variation and natural selection in populations; speciation; current concepts of phylogeny and systematics. (Fall).

**BIO 4114/6114. Cellular Physiology (4)** (Prerequisites: Seven hours of zoology and two semesters of organic chemistry). Three hours lecture. Three hours laboratory. A study of the morphology and function of the cell. (Fall). (Same as PHY 6114).

**BIO 4133/6133. Human Genetics. (3)** (Prerequisite: BIO 1504 or consent of instructor). Three hours lecture. Principles of Mendelian and molecular genetics as applied to humans. Description and causes of human genetic diseases and other anomalies. (Same as GNS 4133/6166).

**BIO 4163/6163. Bryology. (3)** (Prerequisites: BIO 1203 and BIO 2213). One hour lecture. Four hours laboratory. Taxonomy of bryophytes: collection and identification of local hepatics and mosses. (Spring, even years).

**BIO 4203/6203. Taxonomy of Spermatophytes. (3)** (Prerequisites: BIO 1203 and BIO 2213). Two hours lecture. Three hours laboratory. Classification and nomenclature of seed plants; introductory methods of collection; laboratory studies of representative plant families. (Fall/Spring).

**BIO 4204/6204. Plant Anatomy. (4)** (Prerequisites: BIO 1203 and BIO 2213). Two hours lecture. Four hours laboratory. Structure and development of cell types, tissues, roots, stems, leaves, flowers, and fruits of seed plants, with emphasis on angiosperms. (Fall, even years).

**BIO 4213/6213. Plant Ecology. (3)** (Prerequisite: BIO 4203). Two hours lecture. Three hours laboratory. Plant behavior in relation to environment; developmental variations; successional trends; stabilization of plant communities. (Fall).

**BIO 4214/6214. General Plant Physiology. (4)** (Prerequisites: BIO 1203 and CH 1213). Three hours lecture. Three hours laboratory. Chemical and physical activities of the plant; absorption; transpiration; mineral nutrition; photosynthesis; translocation; growth processes. (Fall).

**BIO 4223/6223. Freshwater Algae. (3)** (Prerequisites: BIO 1203). Two hours lecture. Three hours laboratory. Cytology, morphology, physiology, reproduction and ecology of major groups of freshwater algae; laboratories emphasize identification of common freshwater algal genera.

**BIO 4303/6303. Bioinstrumentation. (3)** (Prerequisite: BIO 4304/6304). Two hours lecture. Two hours laboratory and demonstrations. Theory and practical application of electrical, optical and other instruments employed in microbiology and medical technology. (Spring).

**BIO 4304/6304. Quantitative Methods I. (4)** Three hours lecture. Two hours laboratory. Application of mathematical and statistical techniques to problem solving in the laboratory. (Fall).

**BIO 4314/6314. Quantitative Methods II. (4)** (Prerequisite: BIO 4304/6304). Two hours lecture. Four hours laboratory. Theory and application of selected clinical laboratory methods. (Spring).

**BIO 4324/6324. Soil Microbiology. (4)** (Prerequisite: BIO 3304). Three hours lecture. Three hours laboratory. Soil microorganisms and their importance in ammonification, nitrification, and other biological processes. (Spring). (Same as PSS 4314)

**BIO 4403/6403. Anaerobic Microbiology. (3)** (Prerequisite: BIO 3304). One hour lecture. Four hours laboratory. A study of the physiology and ecology of anaerobic microorganisms. Primary focus will be on the theory and practice of isolating, cultivating, and studying anaerobes.

**BIO 4404/6404. Environmental Microbiology. (4)** (Prerequisite: BIO 3304). Two hours lecture. Four hours laboratory. Terrestrial, aquatic, and subsurface microbial ecosystems. Microbiology of water and wastewater treatment, solid waste disposal, land farming, impact of hazardous waste, and environmental reclamation. Spring/odd years.

**BIO 4405/6405. Pathogenic Microbiology. (5)** (Prerequisite: BIO 3304). Three hours lecture. Four hours laboratory. The microorganisms producing disease in man and lower animals; means of transmission; protection against disease. (Fall/Spring).

**BIO 4413/6413. Immunology. (3)** (Prerequisite: BIO 3304 and CH 4513). Three hours lecture. Survey of the functions of the immune system. Emphasis on mammalian immunology, including T- and B-cell interactions in humoral and cell mediated immunity. (Fall).

**BIO 4414/6414. Microbiology of Foods. (4)** (Prerequisite: BIO 3304). Two hours lecture. Four hours laboratory. Isolation and classification of the microorganisms associated with spoilage of commercial and domestic preserved foods. Same as FST 4414/6414. (Spring).

**BIO 4433/6433. Principles of Virology. (4)** (Prerequisites: BCH 4603 and BIO 3103 or equivalents). Three hours lecture. Principles of viral infectivity, multiplication, and chemical constitution.

**BIO 4443/6443. Bacterial Genetics. (3)** (Prerequisites: BCH 4603, BIO 3304 or consent of instructor). Three hours lecture. The genetics of bacteria and their viruses including: replication, rearrangement, repair, transfer, regulation, and methods of manipulation and analysis of DNA. (Fall)

**BIO 4453/6453. Petroleum Microbiology. (3)** (Prerequisite: BIO 3304). Two hours lecture. Two hours laboratory. Geomicrobiological prospecting, desulfurization of oil, disposal of refinery wastes, conversion of oil to other products, secondary recovery and petroleum origin.

**BIO 4463/6463. Bacterial Physiology. (3)** (Prerequisites: BIO 3404 and BCH 4603). Three hours lecture. Structure and function relationships and major aerobic and anaerobic metabolic pathways in microorganisms. (Fall).

**BIO 4502/6502. Toxicology. (2)** (Prerequisite: 8 hours biological sciences and 8 hours chemistry [cell biology/physiology and biochemistry recommended]). Two hours lecture. An introduction to the field of toxicology, including discussion of absorption, metabolism mode of action (acute and chronic), environmental effects, and toxicity testing.

**BIO 4503/6503. Vertebrate Histology. (3)** (Prerequisite: BIO 1504). Two hours lecture. Three hours laboratory. Study of the microscopic anatomy, structure, and function of major cell types and tissues. (Fall).

**BIO 4504/6504. Comparative Vertebrate Embryology. (4)** (Prerequisite: BIO 1504). Two hours lecture. Six hours laboratory. The embryology of the vertebrates; the fertilization of the egg; stages of cleavage and the development of organs and systems. (Spring).

**BIO 4513/6513. Ichthyology. (3)** (Prerequisite: BIO 1504 or equivalent). Two hours lecture. Three hours laboratory. Structure, evolution, classification, and life histories of fishes of the world with emphasis on North American freshwater forms. (Fall).

**BIO 4514/6514. Animal Physiology. (4)** (Prerequisites: Ten hours of zoology and organic chemistry). Three hours lecture. Three hours laboratory. Function and interrelationship of the systems of the body. (Spring). (Same as PHY 6514).

**BIO 4523/6523. Mammalogy. (3)** (Prerequisite for undergraduates: BIO 3524 or equivalent). Two hours lecture. Three hours laboratory. Evolution, systematics, and ecology of mammals, with emphasis on North American groups. (Fall).

**BIO 4533/6533. Animal Behavior. (3)** (Prerequisites: Twelve hours of biology and junior or senior standing). Three hours lecture. A comprehensive approach to the study of behavior with emphasis on concepts, mechanisms and evolutionary principles. (Spring, even years).

**BIO 4543/6543. Ornithology. (3)** (Prerequisites: Eight hours of zoology). Two hours lecture. Three hours laboratory. Recent and fossil avifauna of the world; its origin, distribution, classification, and biology. (Spring).

**BIO 4703/6703. Field Zoology for Teachers. (3)** (Prerequisite: 6 hours of biology). Two hours lecture. Three hours laboratory. A survey of the diversity of animals and field techniques for studying them; emphasis include southeastern fauna and use of animals in the classroom. (Summer). Note: Will not satisfy any Arts and Sciences core requirement.

**BIO 4713/6713. Field Botany for Teachers. (3)** (Prerequisite: Three hours of biology). Two hours lecture. Three hours laboratory. Plants in their natural habitats with emphasis on identification, ecological associations, life histories and importance to man and other organisms.

(Summer). Note: Will not satisfy any Arts and Sciences core requirement.

**BIO 4990/6990. Special Topics in Biology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BIO 8011. Seminar. (1)** One hour. Required once of each on-campus M.S. or Ph.D. student. Formal oral presentation of current topics in biology.

**BIO 8013. Scientific Writing for Biological Scientists. (2)** Three hours lecture. Preparation of the journal article, thesis, and dissertation; searching the literature; scientific illustration; oral presentation of a scientific paper. (Spring).

**BIO 8022. Practical Research Practices. (2)** Two hours lecture. Preparation of proposals for research grants and contracts; business management, fiscal considerations, patents. (Spring, even years).

**BIO 8044. Transmission Electron Microscopy. (4)** (Prerequisite: Consent of instructor). One hour lecture. Six hours laboratory. Introduction to the transmission electron microscope, tissue preparation, ultra-microtomy, and associated techniques. (Same as EPP 8144).

**BIO 8103. Advanced Ecology. (3)** (Prerequisite: Bio 3104). Two hours lecture. Three hours laboratory. Selected topics with special references to bioenergetics, population and human ecology; with student research project. (Fall, odd).

**BIO 8104. Experimental Molecular Biology. (4)** (Prerequisite: Consent of instructor). One hour lecture. Six hours laboratory. Practical experience with the molecular analysis of gene function.

**BIO 8113. Biogeography. (3)** Three hours lecture. Study of the geographic distribution of life. Emphasis placed on climatic, geologic, and human influence, dispersal mechanisms and evolutionary history. (Fall, even years).

**BIO 8123. Physiological Ecology. (3)** (Prerequisite: One semester of physiology or consent of instructor). Three hours lecture. An advanced study of physiological and metabolic adaptations of animals to variable factors in the environment. (Spring, even years).

**BIO 8133. Advanced Cell Biology. (3)** (Prerequisite: BIO 4114/6114 or equivalent). Three hours lecture. A discussion of cell cycle and division, meiosis, cytoskeleton, motility, membrane potentials, excitability, intercellular communication, cellular recognition and adhesion, and cellular evolution. (Spring, odd years.)

**BIO 8203. Embryology of Seed Plants. (3)** (Prerequisites: BIO 1203 and BIO 2213). Two hours lecture. Three hours laboratory. Development of pollen, ovules, embryos, endosperm; pollination and fertilization, incompatibility, and fruit development. (Spring, even years).

**BIO 8213. Plant Water and Mineral Relations. (3)** (Prerequisite: BIO 4214). Three hours lecture. Membrane structure and functions; plant and soil water relationships; absorption; translocation; transpiration; iron transport and mineral nutrition. (Spring).

**BIO 8214. Advanced Taxonomy. (4)** (Prerequisites: BIO 4203). Two hours lecture. Four hours laboratory. Field and laboratory studies of grasses, legumes, and composites: taxonomy, nomenclature, and phylogeny of the Pteropsida: herbarium techniques. (Fall, even years).

**BIO 8223. Plant Metabolism. (3)** (Prerequisites: BIO 4214 and organic chemistry). Three hours lecture. Photosynthesis, respiration, nitrogen metabolism, and other metabolic processes. (Fall).

**BIO 8315. Immunological Techniques. (5)** Two hours lecture. Six hours laboratory. An in-depth course to teach the student a variety of modern methods of immunology.

**BIO 8403. Advanced Microbial Physiology. (3)** (Prerequisite: BIO 4463 or the equivalent). Three hours lecture. Discussion of current concepts regarding the molecular basis of prokaryotic macromolecular biosynthesis and cell division and susceptibility of such processes to inhibition by antibiotics. (Spring, odd years).

**BIO 8405. Advanced Immunology. (5)** Two hours lecture. Six hours laboratory. Advanced theory and techniques in immunology. (Spring, even).

**BIO 8453. Advanced Virology. (3)** (Prerequisite: Cell Biology or equivalent). Three hours lecture. Literature survey in virus research. (Spring, odd).

**BIO 8463. Advanced Bacterial Genetics. (3)** (Prerequisites: BCH 4713 or BIO 4443, or consent of instructor). Three hours lecture. Discussion of current concepts of genetic transfer and regulation in various bacteria. Emphasis will be on use of genetics as an experimental tool. (Fall, even)

**BIO 8703. Advances in Population Biology for Teachers. (3)** Three hours lecture. Basic concepts of evolutionary and environmental biology. Discussion will emphasize fundamental principles, recent developments in the field, and relevance to human affairs.

**BIO 8713. Advances in Organismal Biology for Teachers. (3)** For Teachers. Three hours lecture. Concepts of biology at the organismal level. Discussion of fundamental principles and advances in systematics and diversity of life, body organization, function, reproduction, and development.

**BIO 8723. Advances in Cellular Biology for Teachers. (3)** For Teachers. Three hours lecture. Concepts of subcellular and cellular biology. Fundamental principles and advances in cell structure, function, reproduction, and the molecular, human, and technological developments in cellular genetics.

**BIO 8733. Biological Techniques for Teachers. (3)** For Teachers. Six hours laboratory. Laboratory aspects of biological study with emphasis on experimentation, data collection, quantitative analysis, interpretation, graphical presentation, and specimen collections.

**BIO 8990. Special Topics in Biology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

### Off Campus

The courses listed below are offered during the year of clinical training at affiliate hospitals. (See list of affiliate hospitals.)

Offered during the Summer at Gulf Coast Research Laboratory.

**BIO 4336/6336. Marine Invertebrate Zoology II. (6)** (Prerequisite: Sixteen hours of zoology and junior standing). Same as GCRL Zoology 361B. All phyla from Ollusca through protochordates are covered in this course.

**BIO 4345/6345. Marine Ecology. (5)** (Prerequisite: Sixteen hours of biology including general botany and invertebrate zoology). Same as GCRL Zoology 452. A consideration of the relationships of marine organisms to their environment.

**BIO 4526/6526. Marine Aquaculture. (6)** (Prerequisites: General zoology, invertebrate and vertebrate zoology, or consent of instructor). Same as GCRL Zoology 464. A course designed to acquaint advanced biology students with the science of marine aquaculture.

## BUSINESS INFORMATION SYSTEMS

(For departmental information, see DEPARTMENT of MANAGEMENT and INFORMATION SYSTEMS.)

**BIS 1013. Introduction to Business Computer Systems. (3)** Two hours lecture. Two hours laboratory. An overview of information systems. Integrating computer hardware, software, data, personnel, and procedures is stressed. Instruction in personal productivity packages and the Internet is provided. (Credit will not be granted for this course and CS 1013 or BIS 3713.)

**BIS 1733. Visual Basic Applications. (3)** (Prerequisite: a grade of B or above in BIS 1013). Three hours lecture. Introduction to procedural, event and object-oriented programming to develop business and e-commerce applications.

**BIS 1753. Introduction to Business Applications Using COBOL. (3)** (Prerequisite: a grade of B or above in BIS 1733 or graduate standing). Three hours lecture. Structured program design for business applications. Data editing, table handling, and file processing with sequential and random access files will be stressed.

**BIS 2990. Special Topics in Business Information Systems. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BIS 3233. Introduction to Management Information Systems. (3)** (Prerequisites: BIS 1013). Three hours lecture. A survey of the components, functions, and processes of Information Systems as they relate to managing modern organization for increased efficiency and competitiveness.

**BIS 3523. Advanced Languages I. (3)** (Prerequisites: a grade of "B" or above in BIS 1753, or graduate standing). Three hours lecture. Current and advanced business programming topics. In-depth experience in programming in one or more current state-of-the-art languages.

**BIS 3713. Electronic Information Systems. (3)** (Prerequisite: Junior Standing and six hours of mathematics and/or statistics, or consent of instructor). Three hours lecture. Principles of business information systems using computer equipment. Business problem solving, including problem definition, flow charting, basic programming and input-output design. (Credit for this course may be earned only at the Meridian and Jackson branches of Mississippi State University. Credit will not be granted for this course and BIS 1013 or CS 1013).

**BIS 3753. Business Database Systems. (3)** (Prerequisite: a grade of B or above in BIS 1753). Three hours lecture. Introduction to business database applications. Includes data modeling, design techniques, and data collection, storage, manipulation, and retrieval strategies.

**BIO 4602. Urinalysis. (2)** (Prerequisite: Completion of all preprofessional requirements). One hour lecture. Two hours laboratory. A study of urine as a diagnostic tool. (Spring).

**BIO 4606. Clinical Microbiology. (6)** (Prerequisite: Completion of all preprofessional requirements). Three hours lecture. Six hours laboratory. Isolation and identification of micro-organisms from clinical specimens. Includes bacteriology, virology, mycology and parasitology. Second summer term.

**BIO 4608. Hematology. (8)** (Prerequisite: Completion of all preprofessional requirements). Four hours lecture. Eight hours of laboratory. Normal and abnormal blood and bone marrow cells. Coagulation mechanisms. (Spring).

**BIO 4612. Special Topics. (2)** (prerequisite: Completion of all preprofessional requirements). Four hours lecture or laboratory. An assigned project as determined by the needs or interests of the student. (Spring).

**BIO 4614. Serology and Immunology. (4)** (Prerequisite: Completion of all preprofessional requirements). Two hours lecture. Four hours laboratory. A study of the immune system of the human body. Diagnostic procedures using antigen-antibody reactions. (Fall).

**BIO 4616. Immunohematology. (6)** (Prerequisite: Completion of all preprofessional requirements). Three hours lecture. Six hours laboratory. Blood group serology, compatibility testing, and identification of atypical antibodies. Transfusion practices and blood group immunogenetics. First summer term.

**BIO 4618. Clinical Chemistry. (8)** (Prerequisite: Completion of all preprofessional requirements). Four hours lecture. Eight hours laboratory. Normal and abnormal human body chemistry. Emphasis on instrumentation. (Fall).

**BIO 7000. Directed Individual Study.** Same as GCRL Zoology 561. Hours and credits to be arranged. Directed Individual Study courses usually require prerequisites of BIO 4326/6326.

**BIO 8000. Thesis research/Thesis.** Same as GCRL Zoology 561. Hours and credits to be arranged.

**BIO 9000. Dissertation Research/Dissertation.** Same as GCRL Zoology 561. Hours and credits to be arranged.

**BIS 4000. Directed Individual Study.** Hours and credits to be arranged.

**BIS 4513/6513. Local Area Networks. (3)** (Prerequisite: BIS 3523, or any 12 hours of programming, or graduate standing). Three hours lecture. Concepts and technology of local area networks. Experience in building and maintaining LAN hardware and software components.

**BIS 4523/6523. Advanced Languages II. (3)** (Prerequisites: BIS 3523 and BIS 4753). Three hours lecture. Current and advanced business programming topics. In-depth experience in programming in one or more current state-of-the-art languages.

**BIS 4533. Management Support Systems. (3)** (Prerequisites: BIS 3233 and BIS 4753). Three hours lecture. Theory and application of decision support, expert systems, and data mining using fifth and sixth generation computing techniques. Hands-on experience in developing management support systems.

**BIS 4753. Structured Systems Analysis and Design. (3)** (Prerequisite: a grade of B or above in BIS 1753). Three hours lecture. Analysis/design of computer based information systems with emphasis on problem identification, requirements structuring, and solution generation in theory and in a business project.

**BIS 4763. Electronic Commerce Seminar. (3)** (Prerequisite: Graduating Senior and 15 hours of BIS courses). Three hours lecture. Preparation for IS careers, management of information systems, technical skill tuning, and technology updates with emphasis on fundamentals of e-commerce technology and e-commerce business models.

**BIS 4990/6990. Special Topics in Business Information Systems. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BIS 7000. Directed Individual Study.** Hours and credits to be arranged.

**BIS 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**BIS 8022. Survey of Management Information Systems. (2)** (Prerequisite: Graduate standing). Two hours lecture. Survey of information technology in business including: description and use, development, and management. Some emphasis placed on effective use of technology-enabled tools.



**BIS 8112. Managing Information Technology and Systems. (2)** (Prerequisite: BIS 8022 or equivalent). Two hours lecture. Course includes the description, acquisition or development and use of systems from a local and global perspective. Technology-enabled concepts are used for student assignments.

**BIS 8113. Management Information Systems. (3)** (Prerequisite: BIS 1013). Three hours lecture. Concepts and technology required by managers to interface with an organization's MIS functions. Impact of various MIS strategies, operations, and controls are developed and evaluated.

**BIS 8122. Multimedia Presentation and Communication. (2)** (Prerequisite: BIS 8022 or equivalent). Two hours lecture. Emphasis on planning and delivering business presentations enhanced by multimedia. Concepts, design, and experience in developing multimedia presentations. Exposure to interactive multimedia.

**BIS 8213. Advanced Systems Analysis and Design. (3)** (Prerequisites: Six hours of programming and prerequisite or co-requisite BIS 8112). Three hours lecture. Analysis/design of computer-based information systems using structured methodologies and tools. Emphasis on problem definition, data collection, requirement structuring, solution generation and system design.

**BIS 8313. Advanced Database Design Administration. (3)** (Prerequisites: BIS 8213, BIS 8413 and BIS 8613.) Three hours lecture. Design and management of local and distributed data resources, database design, definition, creation, maintenance, acquisition and use. Role of Database Administrator.

**BIS 8413. Decision Support and Expert Systems. (3)** (Prerequisites: Six hours of programming and prerequisite or co-requisite: BIS 8112). Three hours lecture. Analysis of information support systems which serve the manager/user providing quantitative and qualitative based information derived from databases and model bases.

**BIS 8513. Business Telecommunications. (3)** (Prerequisites: BIS 8213, BIS 8413 and BIS 8613). Three hours lecture. The evaluation,

analysis and design of information systems utilizing data communications and networking concepts and techniques. Emphasis is on business applications and related considerations.

**BIS 8613. MIS Administration. (3)** (Prerequisites: Six hours of programming and prerequisite or co-requisite: BIS 8112). Three hours lecture. Administration of the MIS function in the business enterprise. Emphasis on activity of managing the IS function at all levels of the firm.

**BIS 8753. Information Systems Collaborative Project. (3)** (Prerequisites: BIS 8213, BIS 8413 and BIS 8613; co-requisites or prerequisites: BIS 8313 and BIS 8513). Three hours lecture. Capstone experience incorporating knowledge gained in prerequisite courses. Requires team participation using appropriate tools and methodologies in assisting organizations with real-world information systems related needs.

**BIS 8990. Special Topics in Business Information Systems. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BIS 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**BIS 9113. Management Information Systems (MIS) Seminar. (3)** (Prerequisite: BIS 8213, BIS 8313). Three hours lecture. Penetrating review of issues, methodologies and new developments in design and operation of management information, decision support, and computer-based decision-making systems.

**BIS 9213. Advanced Topics in MIS. (3)** (Prerequisite: BIS 8213, BIS 8313). In-depth study of current MIS topics. Emphasis will be on project design and demonstration. Topics will change to reflect new directions in MIS.

## BUSINESS LAW

(For departmental information, see MARKETING, QUANTITATIVE ANALYSIS and BUSINESS LAW

**BL 2413. The Legal Environment of Business. (3)** Three hours lecture. Environmental study of legal influences, concepts, institutions, emphasizing social forces shaping business law. Introduces business students to interrelationships of law and society, jurisprudence and business.

**BL 2990. Special Topics in Business Law. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BL 3223. The Law of Commercial Transactions. (3)** (Prerequisite: Junior Standing). Three hours lecture. Commercial instruments in the economic process. Use of commercial and investment paper; documents of title, security instruments, notes, drafts, checks; integrated treatment of uniform statutes.

**BL 4000. Directed Individual Study.** (Prerequisite: Junior standing) Hours and credits to be arranged.

**BL 4233/6233. Legal Theories of Risk Distribution and Loss Allocation. (3)** (Prerequisites: BL 2413 or consent of instructor). Three hours lecture. Economic basis for civil liability for TORT, industrial and business hazards. Protection of consumers and business interests. theories of compensation for personal injuries.

**BL 4243/6243. Legal Aspects of Entrepreneurship. (3)** (Prerequisite: BL 2413, MGT 3323, or consent of instructor). Three hours lec-

ture. Business creation including legal aspects from permits and taxes to structure and sale with emphasis on Mississippi Law.

**BL 4253/6253. Real Estate Law. (3)** (Prerequisite: BL 2413 or consent of instructor). Three hours lecture. The legal principles applicable to real estate, including types of ownership and interests, mortgages, restrictions, and regulations.

**BL 4263/6263. Environmental Law. (3)** Three hours lecture. An introduction to how environmental law interfaces with the legal system. Overview of the major statutes, cases, and regulations pertaining to the environment.

**BL 4273/6273. International Business Law. (3)** Three hours lecture. An international commercial transactions course emphasizing trade, licensing and investment (contracts, financing, instruments, dispute resolution).

**BL 4990/6990. Special Topics in Business Law. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BL 8112. Law, Business Ethics, and Dispute Resolution. (2)** Two hours lecture. Legal and ethical issues faced by the business firm with emphasis on prevention and resolution of disputes, including mediation, negotiation and alternative dispute resolution.

## BUSINESS QUANTITATIVE ANALYSIS

(For departmental information see MARKETING, QUANTITATIVE ANALYSIS and BUSINESS LAW)

**BQA 2113. Business Statistical Methods I. (3)** (Prerequisite: MA 1463 and BIS 1013, or equivalent). Three hours lecture. Methods of describing numerical data; probability in business decisions; random variables; sampling distributions; introduction to estimation and hypothesis testing; computer statistical packages applied.

**BQA 2990. Special Topics in Business Statistics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BQA 3113. Introduction to Business Statistical Methods. (3)** (Prerequisite: MA 1463 or equivalent). Three hours lecture. Descriptive statistics; measures of central tendency, measures of dispersion, probability, discrete and continuous random variables, sampling, estimation, hypothesis testing, computer package applications. (Credit for this course may be earned only at the Meridian Campus. Credit will not be granted for this course and BQA 2113 or ST 2113).

**BQA 3123. Business Statistical Methods II. (3)** (Prerequisite: BQA 2113 or equivalent). Three hours lecture. Reviewing estimation and hypothesis testing; correlation and regression; chi-square tests; analysis of variance; non-parametric concepts; index numbers; time series analysis; computer statistical packages applied.

**BQA 4000. Directed Individual Study.** (Prerequisite: Junior standing). Hours and credits to be arranged.

**BQA 4723/6723. Business Statistics Using Computers. (3)** (Prerequisites: BQA 3123 and BIS 1733, or equivalent). Three hours lecture. Designed to provide a better understanding of basic statistical concepts and give students experience in producing information using complex statistical methods and the electronic computer.

**BQA 4990/6990. Special Topics in Business Statistics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BQA 7000. Directed Individual Study.** Hours and credits to be arranged.

**BQA 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**BQA 8112. Business Case Analysis Using Statistics. (2)** (Prerequisite: BQA 2113 and BQA 3123 or Equivalent and a knowledge of SAS). Two hours lecture. Descriptive statistics, data collection techniques estimation, hypothesis testing, analysis of variance, regression, time series, index numbers, forecasting, statistical process control applied to business case data.

**BQA 8443. Statistical Analysis for Business Decision-making. (3)** (Prerequisites: BQA 3123 and computer proficiency). Three hours lecture. Review of descriptive statistics, parametric inference procedures, analysis of variance, regression, nonparametric methods; business problem formulation for computer analysis using statistical packages.

**BQA 8563. Business and Economic Forecasting. (3)** (Prerequisite: BQA 8443 or equivalent). Three hours lecture. Overview of business and economic forecasting and its place in management decision making;

evaluation of forecasting methods; time series analysis using various analytical methods and electronic computer.

**BQA 8583. Quantitative Methods for Research in Business. (3)** (Prerequisite: BQA 8443). Three hours lecture. Designed to familiarize the graduate student with the fundamentals of scientific research and the classical and modern quantitative methods of analysis useful in business research.

**BQA 8990. Special Topics in Business Statistics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**BQA 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**BQA 9533. Advanced Statistics for Business Decisions. (3)** (Prerequisite: BQA 8443). Three hours lecture. Multivariate analysis; multiple regression analysis; multiple discriminant analysis; multivariate analysis of variance and covariance; factor analysis; cluster analysis.

## COMMUNITY COLLEGE

(For departmental information, see INSTRUCTIONAL SYSTEMS, LEADERSHIP, and WORKFORCE DEVELOPMENT.)

**CCL 8113. Community College History/Philosophy. (3)** Three hours lecture. Objectives of the community college, philosophical/historical bases, changing roles, issues in higher education/workforce development/economic industry.

**CCL 8123. Community College Finance. (3)** Three hours lecture. Analyzes tools, methods, problems in community college financial management, revenue sources, budget preparation, risk management, purchasing, employee compensation.

**CCL 8233. Community College Legal Issues. (3)** Three hours lecture. In-depth analysis of the legal/policy issues pertaining to students, faculty, and administrations of community colleges.

**CCL 8333. Community College Administration. (3)** Three hours lecture. In-depth analysis of community college governance, structure, functions, and its relationship with external groups, state government.

## Department of CIVIL ENGINEERING

Office: 235 Walker Engineering Building

Professors White (head), Martin, Rendon, Sinno, and Truax;

Associate Professors Cole and Huddleston; Assistant Professors Eamon, Magbanua, and Zhang

**CE 1003. Introduction to Civil Engineering. (3)** Three hours lecture. Introduction to the Civil Engineering profession, career opportunities, and curriculum. Engineering problem-solving, basic computing skills and tools as used in Civil Engineering. Oral, graphic, and written communications.

**CE 2214. Surveying. (4)** (Prerequisite: Sophomore standing; corequisite: CS 1213, 1233, or 1253 or equivalent). Three hours lecture. Four hours field and problem work. Fundamentals of field measurements. Theory, selection, and use of surveying instruments; theories used in the adjustment of surveys.

**CE 2990. Special Topics in Civil Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CE 3113. Transportation Engineering. (3)** (Prerequisite: Grade of C or better in CE 2214). Three hours lecture. An introduction to the general modes of transportation, the planning processes associated with the modes of transportation and design of transportation facilities.

**CE 3314. Construction Materials. (4)** (Prerequisite: EM 2433, EM 3213 and IE 4613). Three hours lecture. Three hours laboratory. Physical and mechanical properties of basic civil engineering construction materials. Significance of and reasons for testing control and specifications of materials.

**CE 3414. Soil Mechanics. (4)** (Prerequisites: Grade C or better in EM 2413 - EM 3213 corequisite). Three hours lecture. Three hours laboratory. Introduction to soil properties and behavior. Emphasis is placed on relating soil properties to compressibility and shear strength of soils.

**CE 3523. Water Resources Engineering. (3)** (Prerequisite: Grade of C or better in EM 3313; co-requisite: CS 1213, 1233, or 1253). Three hours lecture. Hydraulics of closed conduits; groundwater hydraulics; open channel flow; reservoir and storage analysis; hydraulic structures and machinery.

**CE 3603. Structural Mechanics. (3)** (Prerequisite: Grade of C or better in EM 2413 and EM 3213). Three hours lecture. Analytical and graphical methods of structural analysis; stress diagrams; influence lines; deflection; methods of work, moment distribution and slope deflection.

**CE 3824. Environmental Engineering. (4)** (Prerequisite: Grade of C or better in EM 3313; credit or current enrollment in IE 4613). Three hours lecture. Three hours laboratory. Emphasis on water supply and treatment, wastewater treatment and disposal, air pollution control and solid waste management.

**CE 4000. Directed Individual Study.** Hours and Credits to be arranged.

**CE 4103/6103. Pavement Design. (3)** (Prerequisite: CE 3414). Three hours lecture. Analysis and design of both flexible and rigid pavement structures.

**CE 4133. Geometric Design of Highways. (3)** (Prerequisite: Grade of C or better in CE 3113). Three hours lecture. Highway finance, organization and planning. Economic analysis. Elements of highway and street design. Computer applications to highway engineering.

**CE 4143/6143. Traffic Engineering. (3)** (Prerequisite: CE 3113 and IE 4613). Three hours lecture. Human and vehicular characteristics as they affect highway traffic flow; traffic regulation, accident cause and prevention; improving flow on existing facilities; planning traffic systems.

**CE 4233/6233. Control Surveys. (3)** (Prerequisite: CE 3113). Two hours lecture. Four hours laboratory. Methods and procedures for performing control surveys.

**CE 4243/6243. Land Surveys. (3)** (Prerequisites: CE 3113). Three hours lecture. Methods of surveying and describing property with emphasis on Mississippi's public land surveys.

**CE 4303/6303. Stress Analysis. (3)** (Prerequisites: EM 3213 and MA 3253). Two hours lecture. Three hours laboratory. Stress and strain at a point, theories of failure, shear center, elastic instability, columns, dynamic loads and theory of measurements.

**CE 4313/6313. Advanced Concrete Materials. (3)** (Prerequisite: CE 3314). Three hours lecture. Modern materials and methods for construction involving portland cement concrete, mechanical properties, durability considerations.

**CE 4433. Foundations. (3)** (Prerequisite: Grade of C or better in CE 3314). Three hours lecture. Introduction to exploration and engineering evaluation of subsoil and groundwater conditions for selection and design of foundations for structures and earth masses.

**CE 4513/6513. Engineering Hydrology. (3)** (Prerequisite: CE 3523). Three hours lecture. Hydrologic processes; rainfall-runoff analysis; groundwater flow; frequency analysis; hydrologic design.

**CE 4523/6523. Open Channel Hydraulics. (3)** (Prerequisite: CE 3523). Three hours lecture. Continuity, energy and momentum principles in open channel flow; flow resistance; uniform and non-uniform flow; channel controls and transitions; unsteady flow routing.

**CE 4533/6533. Computational Methods in Water Resources Engineering. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Review of relevant numerical analysis; numerical methods for kinematic wave, St. Venant, Boussinesq and depth-averaged equations; simulation of one- and two-dimensional free-surface flows.

**CE 4543/6543. Advanced Reinforced Concrete. (3)** (Prerequisite: CE 4633). Three hours lecture. Two-way slab systems, shear walls, retaining walls, bi-axial bending of columns, torsion, brackets and corbels. Introduction to prestressed concrete.

**CE 4601. Fundamentals of Structural Design. (1)** (Prerequisites: IE 4613; a grade of C or better in CE 3603; corequisite: CE 4623 or CE 4633). Three hours laboratory. Concepts of structural design common to all Civil Engineering structural design courses; advanced load analyses in structural engineering; introduction to structural design software.

**CE 4603/6603. Indeterminate Structures I. (3)** (Prerequisite: CE 3603). Three hours lecture. A study of the several classical methods frequently used in the analysis and design of indeterminate structures. Introduction to matrix methods of structural analysis.

**CE 4623. Steel Structures. (3)** (Prerequisite: Grade of C or better in CE 3603; credit or current enrollment in CE 4601). Three hours lecture. Analysis and design of metal structures, with emphasis on members and joints.

**CE 4633. Concrete Structures. (3)** (Prerequisite: Grade of C or better in CE 3603; credit or current enrollment in CE 4601). Three hours lecture. Theory and problems in the analysis and design of concrete structures.

**CE 4653/6653. Timber Design. (3)** (Prerequisite: Grade of C or better in CE 3603; credit or current enrollment in CE 4601). Three hours lecture. Engineering properties of wood. Design of wood structural members and connections. Wood structural systems.

**CE 4663/6663. Matrix Methods of Structural Analysis. (3)** (Prerequisite: Credit in CE 4603/6603, or consent of instructor). Three hours lecture. A unified treatment of beams, trusses, frames, and grids. Particular emphasis on stiffness methods.

**CE 4673/6673. Bridge Design. (3)** (Prerequisite: CE 4601 and CE 4633). Three hours lecture. AASHTO loading specifications. Designs of structural systems commonly used for bridge construction. Comprehensive design assignments for typical bridge layouts.

**CE 4683/6683. Advanced Steel Design. (3)** (Prerequisite: CE 4623). Three hours lecture. Design theory and practice applied to complex structural steel systems.

**CE 4693/6693. Reliability of Structures. (3)** (Prerequisite: IE 4613; credit or current enrollment in CE 4623 or CE 4633, or consent of instructor). Three hours lecture. Introduction to the theory of structural reliability. Topics include probabilistic measures of safety, load models, resistance models, component and system reliability, optimization of design codes.

**CE 4703/6703. Construction Engineering and Management. (3)** (Prerequisite: Senior standing or consent of instructor). Three hours lecture. Construction contracts and law, cost estimating, and project scheduling.

**CE 4713. Forensic Engineering. (3)** (Senior standing and consent of instructor). Three hours lecture. The practice of forensic engineering, litigation, arbitration and mediation, failure case studies, investigation of failure, forensic engineering procedures.

**CE 4823/6823. Public Health Engineering. (3)** (Prerequisite: CE 3824). Three hours lecture. Public health engineering principles for protection against biological and chemical health hazards. Appropriate control methods for rural areas and developing countries.

**CE 4843/6843. Advanced Sanitary Analysis. (3)** (Prerequisite: CE 3824). Three hours lecture. Introduction to advanced theoretical concepts in sanitary engineering analysis with special emphasis on inorganic, organic, and physical chemistry.

**CE 4873/6873. Water and Wastewater Engineering. (3)** (Prerequisite: Grade of C or better in CE 3824). Two hours lecture. One hour laboratory. Evaluation of municipal water and waste-water characteristics and flows; application of various unit processes/unit operations for the treatment of municipal water and wastewater.

**CE 4893/6893. Hazardous Waste Management. (3)** (Prerequisite: Consent of Instructor). Three hours lecture. Examination of state-of-the-art technologies available for the handling treatment; storage; and disposal of hazardous waste materials.

**CE 4990/6990. Special Topics in Civil Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CE 4903/6903. Civil Engineering Comprehensive. (3)** (Prerequisite: senior standing). Application of engineering principles in the planning, design and construction of civil engineering projects.

**CE 7000. Directed Individual Study.** Hours and credits to be arranged.

**CE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**CE 8133. Traffic Flow Theory. (3)** (Prerequisite: Consent of instructor). Three hours lecture. An analysis of the engineering and mathematical principles of traffic flow.

**CE 8433. Advanced Foundations. (3)** (Prerequisite: CE 4433). Three hours lecture. A continuation of CE 3433 with emphasis on unusual soil conditions and foundations.

**CE 8453. Physical Properties of Soils. (3)** (Prerequisite: CE 3414). Two hours lecture. Three hours laboratory. A study of the physical properties of soil masses as related to foundation engineering.

**CE 8563. Groundwater Resource Evaluation. (3)** (Prerequisite: CE 3523). Three hours lecture. Groundwater movement; Darcy's law; equations of groundwater flow; confined and unconfined flow; wells and well field analysis; groundwater quality; aquifer management.

**CE 8603. Indeterminate Structures II. (3)** (Prerequisite: CE 4603/6603). Three hours lecture. Advanced study of classical and modern techniques used in the analysis of complex indeterminate structures.

**CE 8613. Advanced Design in Metals. (3)** (Prerequisite: CE 4623). Three hours lecture. Principles and methods of design based on the plastic properties of steel.

**CE 8623. Theory of Plates and Shells. (3)** (Prerequisites: CE 4603/6603). Three hours lecture. Equations of equilibrium for plates, slabs, and shells.

**CE 8643. Prestressed Concrete. (3)** (Prerequisite: CE 4633). Three hours lecture. Design of prestressed concrete structures with emphasis on flexural design of beams and slabs. Description of construction materials and methods.

**CE 8663. Advanced Computational Methods in Structural Analysis. (3)** (Prerequisite: CE 4663/6663 or consent of instructor). Three hours lecture. Advanced computational methods used in the stiffness analysis of two- and three-dimension structures. Programming strategies and techniques used in computer software development.

**CE 8683. Finite Element Analysis in Structural Engineering. (3)** (Prerequisite: CE 4663/6663). Three hours lecture. Energy and elasticity principles. Development of planar three-dimensional and curved elements. Applications to plates and shells. Use of computer programs.

**CE 8693. Advanced Structural Design. (3)** (Prerequisites: CE 4623 and CE 4633) Three hours lecture. The analysis and design of complex structural systems. Advanced methods of analysis, including computer methods.

**CE 8803. Unit Processes and Operations in Environmental Engineering I. (3)** Three hours lecture. Theory and application of physical and chemical unit processes and operations available for the treatment of water and wastewater.

**CE 8823. Unit Processes and Operations in Environmental Engineering II. (3)** Three hours lecture. Theory and application of biological processes available for the treatment of wastewater.

**CE 8833. Sludge Treatment and Disposal. (3)** (Prerequisites: CE 8803 and CE 8823). Three hours lecture. Basic theory of sludge handling; treatment, disposal, and design application.

**CE 8843. Water Treatment Plant Design. (3)** (Prerequisite: CE 3824). Three hours lecture. An in-depth consideration of criteria for the selection of water sources for a potable supply. Theory and design considerations for selecting treatment alternatives.

**CE 8863. Solid Waste Management. (3)** (Prerequisite: CE 3824) Three hours lecture. Define and characterize non-hazardous solid wastes and how to minimize, handle, transport, store, recycle and dispose of these materials.

**CE 8893. Industrial Waste Management. (3)** Three hours lecture. Delineation of industrial wastes; the regulations pertaining to them; and the technologies applied in their being reduced, reused, recycled, treated, and disposed.

**CE 8990. Special Topics in Civil Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CE 8923. Surface Water Quality Modeling. (3)** (Prerequisite: Consent of instructor). Development of the mathematical formulations describing the distribution of concentration of conservative and nonconservative pollutants in natural waters.

**CE 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**Department of CHEMISTRY**

Office: 118 Hand Chemical Laboratory

Professors Ambrust, McMahan, Mead (Acting Head), Oldham, Wilson, Saebo and Pittman;  
Associate Professors Foster, Henry, and Wipf;

Assistant Professors Gwaltney;

Instructor/Lab Coordinator: Holman; Instructor Beard

Only one course from each group may count toward degree: CH 1043, 1213; CH 1053, 1223, or 1293; CH 1221 or 1051; CH 2503 or 4513.

**CH 1013. Chemistry. (3)** Three hours lecture. Suitable as a science elective for liberal arts, business, and education students. Cannot be used as a prerequisite for any other chemistry course. Chemistry and its relation to society.

**CH 1043. General Chemistry. (3)** Three hours lecture. The nature of chemistry and its applications. Designed for the student that will not take upper division chemistry courses. CH 1043 will satisfy chemistry prerequisites for CH 1213.

**CH 1051. Experimental Chemistry. (1)** Three hours laboratory. A laboratory to accompany CH 1053. Experiments designed to illustrate the practical aspects of chemistry.

**CH 1053. General Chemistry. (3)** Three hours lecture. The nature of chemistry and its applications. Designed for the student that will not take upper division chemistry courses.

**CH 1211. Investigations in Chemistry. (1)** Three hours laboratory. Accompanies CH 1213. Student must have prior credit or concurrent enrollment in corresponding lecture course. CH 1211 must be completed before student may enroll in CH 1221. Selected experiments to illustrate the fundamentals of chemistry.

**CH 1213. Fundamentals of Chemistry. (3)** (Prerequisites: Placement exam or grade of C or better in CH 1043 and MA 1313 or concurrent enrollment in MA 1313, 1323 or 1713). Three hours lecture. The principles of atomic and molecular structure, energetics, dynamics, and synthesis as related to chemical systems. Designed as preparation for upper division chemistry courses. Offered each semester.

**CH 1221. Investigations in Chemistry. (1)** Three hours laboratory. Accompanies CH 1223. Student must have prior credit or concurrent enrollment in corresponding lecture course. CH 1221 must be completed before student may enroll in CH 1221. Selected experiments to illustrate the fundamentals of chemistry.

**CH 1223. Fundamentals of Chemistry. (3)** (Prerequisites: CH 1213) Three hours lecture. The principles of atomic and molecular structure, energetics, dynamics, and synthesis as related to chemical systems. Designed as preparation for upper division chemistry courses. Offered each semester.

**CH 1293. Honors in Chemistry. (3)** (Prerequisites: CH 1213; consent of instructor). Three hours lecture. A course designed for the student with high ability in science. CH 1293 offered Spring semester.

**CH 2313. Quantitative Inorganic Analysis. (3)** (Prerequisites: CH 1221 and CH 1223). Two hours lecture. Three hours laboratory. An introductory course in quantitative methods of inorganic chemistry with an abbreviated laboratory including gravimetric, titrimetric and colorimetric methods.

**CH 2314. Quantitative Inorganic Analysis. (4)** (Prerequisites: CH 1221 and 1223). Two hours lecture. Six hours laboratory. Introduction to fundamental techniques and principles of the quantitative methods of inorganic chemistry. Gravimetric, titrimetric, and colorimetric methods.

**CH 2501. Elementary Organic Chemistry Laboratory. (1)** (Prerequisite: CH 1221 or CH 1051). Three hours laboratory. A laboratory course to accompany CH 2503.

**CH 2503. Elementary Organic Chemistry. (3)** (Prerequisite: CH 1223 or CH 1053). Three hours lecture. A terminal course in organic chemistry. Common aliphatic, aromatic, and heterocyclic compounds.

**CH 2990. Special Topics in Chemistry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CH 3213. Inorganic Chemistry. (3)** (Prerequisites: CH 2314, and MA 1713). Three hours lecture. A basic course in inorganic chemistry. Topics include periodicity, ionic interactions, systematic chemistry of the elements and solvent relations to acid-base and redox reactions.

**CH 4000. Directed Individual Study.** Hours and credits to be arranged.

**CH 4103/6103. Chemical Literature. (3)** (Prerequisite: Junior standing). Two hours lecture. Three hours laboratory. A study of sources of information in chemistry, primary and secondary, including books, journals, patents, and other printed material. Searching the chemical literature.

**CH 4113. Advanced Chemistry Research Skills. (3)** (Prerequisites: CH 4521, CH 4523 and consent of instructor). One hour lecture. Six hours laboratory. Laboratory intensive course on modern research methods with oral and written presentations including a discussion component of the role and ethics of scientists in society.

**CH 4203/6203. Faculty Development in Secondary School Chemistry. (3)** (Prerequisites: A year of chemistry plus experience as a secondary level science teacher). Two hours lecture. Three hours laboratory. A course designed for secondary school chemistry teachers. Topics covered are significant to a successful high-school chemistry course.

**CH 4212/6212. Advanced Inorganic Laboratory. (2)** (Prerequisite: Prior credit or concurrent enrollment in CH 4213/6213). Six hours laboratory. The application of modern experimental techniques to inorganic systems.

**CH 4213/6213. Advanced Inorganic Chemistry I. (3)** (Prerequisite: Consent of the instructor; CH 4413/6413). Three hours lecture. Primarily the study of the elements in light of the periodic law; emphasis on coordination number, molecular complexes, and nuclear chemistry.

**CH 4303/6303. Environmental Chemistry I. (3)** (Prerequisites: CH 4523/6523). Three hours lecture. A systematic study of the basic concepts of environmental chemistry. Topics include air, water, soil chemistry, pollution, and environmental regulations.

**CH 4351/6351. Instrumental Analysis Laboratory. (1)** (Prerequisite: Concurrent registration in CH 4353/6353). Three hours laboratory. Laboratory course to accompany CH 4353/6353.

**CH 4353/6353. Instrumental Analysis. (3)** (Prerequisites: CH 4423/6423). Three hours lecture. Three hours laboratory. A study of capabilities and principles of operation of optical and electrical instruments, including X-ray diffraction.

**CH 4404. Biophysical Chemistry. (4)** (Prerequisites: PH 1123, CH 4523, MA 1723). Three hours lecture, one hour recitation. Principles of thermodynamics, solutions, electrochemistry, kinetics, transport processes, macromolecular solutions and electromagnetic properties as applied to biological systems.

**CH 4411/6411. Physical Chemistry Laboratory. (1)** (Prerequisite: CH 4413/6413). Three hours laboratory. Laboratory course to accompany CH 4413/6413.

**CH 4413/6413. Physical Chemistry. (3)** (Prerequisites: CH 1223, PH 2213 and MA 2733). Three hours lecture. A study of the quantitative and theoretical properties of elements in their various states of combination. Topics include chemical thermodynamics and kinetics, solutions of nonelectrolytes and electrolytes, solid state, surface chemistry, macromolecules, photochemistry, and statistical thermodynamics.

**CH 4421/6421. Physical Chemistry Laboratory. (1-1)** (Prerequisite: CH 4413/6413). Three hours laboratory. Laboratory course to accompany CH 4423/6423.

**CH 4423/6423. Physical Chemistry. (3)** (Prerequisites: CH 4413/6413). Three hours lecture. A study of the quantitative and theoretical properties of elements in their various states of combination. Topics include chemical thermodynamics and kinetics, solutions of nonelectrolytes and electrolytes, solid state, surface chemistry, macromolecules, photochemistry, and statistical thermodynamics.

**CH 4433/6433. Intermediate Physical Chemistry. (3)** (Prerequisite: CH 4423/6423). Three hours lecture. A study of quantum mechanics, molecular spectroscopy, and statistical mechanics.

**CH 4511/6511. Organic Chemistry Laboratory. (1)** (Prerequisites: CH 1221 and CH 1223). Three hours laboratory. A laboratory course to accompany CH 4513/6513 for premedical, biological, and chemical engineering students.

**CH 4513/6513. Organic Chemistry. (3)** (Prerequisite: CH 1223). Three hours lecture. A systematic study of organic chemistry including aliphatic, aromatic, and heterocyclic compounds for majors in chemistry, chemical engineering, premedical, and biological sciences.

**CH 4521/6521. Organic Chemistry Laboratory. (1)** (Prerequisites: CH 4511/6511 and CH 4513/6513). Three hours laboratory. A laboratory course to accompany CH 4523/6523 for premedical, biological, and chemical engineering students.

**CH 4523/6523. Organic Chemistry. (3)** (Prerequisite: CH 4513/6513). Three hours lecture. A systematic study of organic chemistry including aliphatic, aromatic, and heterocyclic compounds for majors in chemistry, chemical engineering, premedical, and biological sciences.

**CH 4533/6533. Intermediate Organic Chemistry. (3)** (Prerequisite: CH 4523/6523). Three hours lecture. A continuation of the sequence CH 4513/6513-4523/6523.

**CH 4544/6544. Qualitative Organic Analysis. (4)** (Prerequisite: CH 4523/6523). Two hours lecture. Six hours laboratory. A course designed to develop technique in the identification of organic compounds.

**CH 4990/6990. Special Topics in Chemistry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CH 7000. Directed Individual Study.** Hours and credits to be arranged.

**CH 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**CH 8711-8741. Seminar.** One hour lecture. Reports on recent literature by students and staff. All graduate students in chemistry required to attend. One credit for each semester's participation. Up to a total of six credits allowed for Ph.D. candidates, and three for M.S.

**CH 8990. Special Topics in Chemistry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CH 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

### Analytical Chemistry

**CH 8313. Advanced Analytical Chemistry. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Basic principles and problems involved with chemical analysis.

**CH 8333. Advanced Instrumental Analysis. (3)** (Prerequisite: CH 4353/6353 or consent of instructor). Three hours lecture. Fourier transform and laser methods of spectroscopy, surface analysis and their application to current analytical problem.

**CH 8343. Electroanalytical Chemistry. (3)** (Prerequisite: consent of instructor). Three hours lecture. Fundamentals of electrochemistry and application of electrochemical methods to analytical chemistry.

### Inorganic Chemistry

**CH 8203. Advanced Inorganic Chemistry II. (3)** (Prerequisite: CH 4213/6213 and CH 4423/6423). Three hours lecture. A systematic study of coordination compounds with emphasis upon the techniques.

### Organic Chemistry

**CH 8513. Synthetic Organic Chemistry. (3-3)** (Prerequisite: 12 credits in organic chemistry). Three hours lecture. The scope and limitations of commonly employed organic preparative methods. New and unusual reagents.

**CH 8553. Theoretical Organic Chemistry. (3)** (Prerequisite: 12 credits in organic chemistry). Three hours lecture. A study of the mechanisms of organic reactions.

**CH 8573. Natural Products. (3)** (Prerequisite: 12 credits in organic chemistry). Three hours lecture. A study of the types of compound synthesized in nature. Methods of structure determination.

### Physical Chemistry

**CH 8423. Molecular Structure. (3)** (Prerequisites: CH 4423 and MA 3253). Three hours lecture. An introduction to various methods for studying molecular structure. Methods covered include quantum mechanics, statistical mechanics, molecular spectroscopy, and nuclear chemistry.

**CH 8473. Quantum Chemistry I. (3)** (Prerequisites: PH 4723, MA 3353, MA 4153). Three hours lecture. Schrodinger theory, spherically symmetric systems, matrix mechanics, angular momentum and spin, time-independent perturbation theory.

## Department of CHEMICAL ENGINEERING

Office: 330 Swalm Chemical Engineering Building

Professors George, Jefcoat, Rogers, Schulz (Director), and Zappi;  
Associate Professors Bricka, H. Toghiani and R. Toghiani;  
Assistant Professor P. Hill

**CHE 1101. CHE Freshman Seminar. (1)** One hour lecture. Seminar focusing on student and professional development for chemical engineering freshman.

**CHE 1233. Design Concepts for CHE. (3)** Three hours lecture. Introduction to principles of chemical engineering design. Use of computational tools (commercial process simulation software) to solve basic chemical engineering problems.

**CHE 2114. Mass and Energy Balances. (4)** (Prerequisites: CH 1223 and CH 1221). Three hours lecture. Two hours laboratory. Application of systems of units, material balances, heats of reaction, energy balances, and chemical equilibria to typical industrial problems.

**CHE 2990. Special Topics in Chemical Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CHE 3113. Chemical Engineering Thermodynamics I. (3)** (Prerequisites: CH 1223, MA 2733 and PH 2213, credit or registration in CHE 2114). Three hours lecture. The thermodynamic properties of substances, energy relationships, applications of the first and second law of thermodynamics, flow processes, power cycles, refrigeration and liquefaction.

**CHE 3123. Chemical Engineering Thermodynamics II. (3)** (Prerequisite: MA 2743, PH 2223, C or better in CHE 3113). Three hours lecture. Treatment of non-ideal effects. High pressure behavior of pure substances. Thermodynamics of ideal and non-ideal mixtures, phase equilibria and chemical equilibria.

**CHE 3203. Fluid Flow Operations. (3)** (Prerequisite: PH 2213). Three hours lecture. Fundamentals of fluid flow behavior in chemical processes emphasized by extensive calculations. Design of fluid flow systems.

**CHE 3213. Heat Transfer Operations. (3)** (Prerequisite: CHE 3203; Corequisite: CHE 3113). Three hours lecture. Fundamentals of heat transfer in chemical engineering processes and process equipment. Special emphasis given to the economics of heat exchanger design and heat recovery.

**CHE 3222. Chemical Engineering Laboratory I. (2)** (Prerequisite: C or better in CHE 3203, C or better in CHE 3213). Four hours laboratory. Experiments in chemical engineering unit operations related to

fluid flow and heat transfer. Experimental design/statistical treatment of data. Health/safety concerns in the laboratory.

**CHE 3223. Mass Transfer Operations. (3)** (Prerequisite: C or better in CHE 3203; Credit or registration in CHE 3213.) Three hours lecture. Quantitative relationships for equilibrium stage operations such as extraction and distillation. Applications of principles of mass transfer, diffusion, and absorption. Application to equipment design.

**CHE 3232. Chemical Engineering Laboratory II. (2)** (Prerequisites: C or better in CHE 3222, C or better in CHE 3213, C or better in CHE 3223). Four hours laboratory. Experiments in chemical engineering unit operations related to heat transfer, mass transfer, kinetics, and process control. Statistical design of experiments. Instrumentation and data acquisition.

**CHE 4313/6313. Transport Phenomena. (3)** (Prerequisite: MA 3253 and PH 2233). Three hours lecture. Fundamental principles of momentum, heat and mass transport. Relationships between transport processes and the physical property distributions in fluid and solids.

**CHE 3413. Engineering Materials. (3)** (Prerequisites: CH 1223 and PH 2213). Three hours lecture. The physical, chemical, and mechanical properties of engineering materials. The influence of these properties on the behavior of materials that have been placed in service.

**CHE 3823. Chemical Engineering Analysis and Simulation. (3)** (Prerequisites: MA 3253 and CHE 3203). Three hours Lecture. Application of numerical methods to fundamental topics in Chemical Engineering.

**CHE 4000. Directed Individual Study.** Hours and credits to be arranged.

**CHE 4113/6113. Chemical Reactor Design. (3)** (Prerequisites: MA 3253, C or better in CHE 3123). Three hours lecture. The fundamentals of chemical reaction kinetics with applications.

**CHE 4123/6123. Industrial Design. (3)** (Prerequisites: CHE 3123, CHE 3213 and MA 3253). Three hours lecture. Concepts of industrial chemical engineering design. Alternative designs, economics, reliability, environmental considerations, risk assessment and safety are emphasized through problems and interaction with resource personnel.

**CHE 4133/6133. Process Design. (3)** (Prerequisite: C or better in CHE 3123, C or better in CHE 3223). Three hours lecture. Design and analysis of chemical and environmental engineering processes utilizing momentum, energy, and mass transport principles.

**CHE 4223/6223. Process Instrumentation and Control. (3)** (Prerequisites: MA 3253, C or better in CHE 3213, C or better in CHE 3223). Three hours lecture. Measurement of process variables; characteristics of control elements; automatic control instruments; dynamic behavior of process equipment; process control systems.

**CHE 4234/6234. Chemical Plant Design. (4)** (Prerequisite: C or better in CHE 4133, C or better in CHE 4113). Eight hours laboratory. Application of scientific and engineering principles to the design and economic evaluation of industrial chemical plants.

**CHE 4323/6323. High Polymer Theory and Practice. (3)** (Prerequisites: CHE 3123, CH 4521 and CH 4523). Two hours lecture. Three hours laboratory. A study of high polymers, covering structure with its relation to physical and chemical properties; polymerization, compounding, processing and testing of final products.

**CHE 4423/6423. Fundamentals of Industrial Corrosion. (3)** (Prerequisite: CHE 3413). Three hours lecture. Identifying and eliminating the different types of corrosion that lead to the failure of engineering structures.

**CHE 4513/6513. Pulp and Paper Manufacturing Processes. (3)** (Prerequisite: CHE 2114 and consent of instructor). Three hours lecture. A study of pulping and paper making processes with emphasis on application of basic engineering techniques to special problems of pulp and paper industry.

**CHE 4613/6613. Air Pollution Control Design: Theory and Practice. (3)** (Prerequisite: Consent of instructor). Three hours lecture. A study of the unit operations of air pollution control systems with a specific emphasis on air pollution dynamics, equipment design, and equipment operation.

**CHE 4623/6623. Hazardous Waste Incineration: Theory and Practice. (3)** (Prerequisite: Consent of instructor). Three hours lecture. The various unit operations of hazardous waste incineration will be studied with specific attention given to equipment design, reaction kinetics, thermodynamics, legal and social aspects.

**CHE 4624/6624. Experimental Methods in Materials Research. (4)** (Prerequisite: CHE 3413). Three hours lecture, three hours laboratory. Introduction to research methodologies commonly used in the evaluation of materials. Emphasis is on electron microscopy/spectroscopy techniques, surface analyses and treatments, and mechanical testing.

**CHE 4713/6713. Compound Semiconductor Materials. (3)** (Prerequisites: senior standing or consent of instructor). Three hours lecture. Compound semiconductor structure, band theory, heterostructures emphasizing engineering concerns of epitaxial growth, fabrication, characterization, and application in opto-electronic devices.

**CHE 4723/6723. Quantum Well Materials. (3)** (Prerequisites: CHE 4713/6713 or consent of instructor). Three hours lecture. Fundamentals of potential wells, superlattices, single-coupled-/multiple-quantum well structures and devices. Emphasizing epitaxial growth, fabrication, characterization, and application of devices utilizing quantum confinement.

**CHE 4990/6990. Special Topics in Chemical Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CHE 7000. Directed Individual Study.** Hours and credits to be arranged.

**CHE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**CHE 8011. Chemical Engineering Seminar. (1)** (Prerequisite: Graduate standing). Library assignments and reports on the current chemical engineering literature.

**CHE 8113. Advanced Chemical Engineering Thermodynamics. (3)** (Prerequisites: CHE 3123 and CHE 4113 or equivalent). Three hours lecture. Advanced study of fundamental laws of thermodynamics as applied to unit operations, non-ideal fluids and solutions, chemical equilibria, electrochemistry and similar topics.

**CHE 8123. Chemical Kinetics and Dynamics. (3)** (Prerequisite: consent of instructor). Three hours lecture. Theory and interrelations of phenomenological chemical kinetics and molecular reaction dynamics.

**CHE 8223. Advanced Process Computations. (3)** (Prerequisite: CHE 3223). Three hours lecture. Numerical methods. Numerical solution of ordinary and partial differential equations for process applications. Use of algebraic and matrix methods. Digital computer applications.

**CHE 8233. Advanced Momentum, Heat, and Mass Transfer. (3)** (Prerequisite: CHE 3223). Three hours lecture. Differential analysis of transfer processes. Rates of transfer in multi phase systems. Applications to design of chemical process equipment.

**CHE 8243. Advanced Equilibrium Stage Operations. (3)** (Prerequisite: CHE 3223). Three hours lecture. Phase equilibrium. Multi component separations. Analytical and graphical methods. Equipment specification.

**CHE 8323. Corrosion of Metals. (3)** Three hours lecture. The mechanisms of metallic corrosion. Methods of protecting metals from corrosive attack.

**CHE 8523. Advanced Transport Phenomena. (3)** (Prerequisite: Graduate standing). Three hours lecture. Fundamental Principles in momentum, heat, and mass transports. Conservation equations. Continuity, motion, energy equations, and Multi component mass equation of change.

**CHE 8990. Special Topics in Chemical Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CHE 9000. Dissertation Research/Dissertation.** Hours and credit to be arranged.

## COMPUTATIONAL ENGINEERING

Office: 8 Engineering Research Center

Professors Carter, Harden, King, Marcum, Moorhead, J. Thompson;

Associate Professors: Banicescu, Cinnella, Flower, Gatlin, Haupt, Huddleston, Janus, Newman III, D. Reese, Skjellum, Stokes, and D. Thompson;

Assistant Professors: Burg, L. Bruce, Luke, Mehra, O'Hara, S. Oppenheimer, Remotigue, and Sheng

**CME 2990. Special Topics in Computational Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CME 3413. Introduction to Computational Field Simulation. (3)** (Prerequisites: PH 2223, MA 3253, or consent of instructor). Three hours lecture. CFS methodology to solve engineering problems involving field physics, geometry, mathematics, algorithms, visualization techniques, and computing.

**CME 4000. Directed Individual Study.** Hours and credits to be arranged.

**CME 4413/6413. Principles and Practice of Computational Field Simulation. (3)** (Prerequisite: CME 3413 or senior standing in College of Engineering). Two hours lecture. Two hours laboratory. A broad-based treatment of the principles of computational simulation, with emphasis on applications to realistic engineering problems. Interactive classroom experience coupled with outside projects.

**CME 4990/6990. Special Topics in Computational Engineering. (1-9)** Credit and title to be arranged. This course is to be used

on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CME 7000. Directed Individual Study.** Hours and credits to be arranged.

**CME 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**CME 8113. Computational Geometry. (3)** (Prerequisite: consent of instructor). Three hours lecture. Computer aided geometric design techniques and their applications in engineering and general computational field simulation.

**CME 8990. Special Topics in Computational Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CME 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of COMMUNICATION

Office: 130 McComas Hall

Professors Flick, Hill, and Zacharias; Associate Professors Bynum, Forde, and Huttenstine (Head); Assistant Professors Arnett, Couvillion, W. Durst, Goodman, Gring, Holland Littlejohn and McDavid; Instructors Berry, Brown, DeFore, BJ Durst, Harris, Hinton, Stout, and Ulmer; Lecturer Crane

- and practice of theatrical makeup and costumes for the theater production.
- CO 1003. Fundamentals of Public Speaking. (3)** Three hours lecture. The psychological processes and adjustments necessary in preparing, organizing, wording, and delivering effective speeches.
- CO 1093. Honors Oral Communication. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Same as CO 1003. Available only to students in the University Honors Program.
- CO 1223. Introduction to Communication Theory. (3)** (Prerequisite: CO 1003 or CO 2253). Three hours lecture. A comprehensive introduction to the bases of contemporary communication theory.
- CO 1403. Introduction to the Mass Media. (3)** Three hours lecture. How American newspapers, magazines, radio, television, and film industries are organized to collect and distribute news, editorial, and entertainment material.
- CO 1423. History of the Mass Media. (3)** Three hours lecture. The origin and development of newspapers, magazines, radio, television and film in America as a means to mass communications.
- CO 1503. Introduction to Theater. (3)** Three hours lecture. A comprehensive view of the theater, including plays, playwrights, directing, acting, theaters, and technicians.
- CO 1513. Theater Practicum #1. (3)** Nine hours laboratory. Preparation for and participation in department production activities.
- CO 1523. Theater Practicum #2. (3)** Nine hours laboratory. Preparation for and participation in department production activities.
- CO 1533. Theater Practicum #3. (3)** Nine hours laboratory. Preparation for and participation in department production activities.
- CO 1543. Theater Practicum #4. (3)** Nine hours laboratory. Preparation for and participation in department production activities.
- CO 1553. Theater Practicum #5. (3)** Nine hours laboratory. Preparation for and participation in department production activities.
- CO 1563. Theater Practicum #6. (3)** Nine hours laboratory. Preparation for and participation in department production activities.
- CO 1903. Introduction to Cinema. (3)** Three hours lecture. A multi disciplinary study of the film, with emphasis on linguistics, psychological, philosophical, and general intellectual aspects.
- CO 2013. Voice and Articulation. (3)** Three hours lecture. A study of the phonetic and acoustic features of speech.
- CO 2203. Negotiations. (3)** (Prerequisite: CO 1003 or CO 2253). Three hours lecture. Introduction to theory and practice in the types of argumentation employed in our society.
- CO 2213. Small Group Communication. (3)** (Prerequisite: CO 1003 or junior standing). Three hours lecture. A study of the problems and techniques of participation in and leadership of small groups.
- CO 2253. Fundamentals of Interpersonal Communication. (3)** Emphasis on two-person interactions to increase student's understanding and appreciation of communication principles.
- CO 2313. Newswriting for the Electronic Media. (3)** (Prerequisite: CO 2413). Practice in gathering, writing, and delivering news copy for telecommunications media. Examination of the role of the reporter, the news writer, and the newscaster.
- CO 2333. Television Production. (3)** (Prerequisite: CO 1403). Two hours lecture. Two hours laboratory. Elementary principles, practices of television production in varied program formats.
- CO 2343. Writing for Radio, Television, and Film. (3)** (Prerequisite: CO 1403). Three hours lecture. Study and practice of the principles and techniques of documentary and dramatic script writing.
- CO 2413. Introduction to News Writing and Reporting. (3)** (Prerequisites: CO 1403, two semesters composition, and ability to type). Three hours lecture. Practice in writing simple news stories and the place of the reporter in the news-gathering organization.
- CO 2423. News Editing, Typography, and Makeup. (3)** (Prerequisite: CO 2413). Three hours lecture. Editing newspaper copy, writing headlines, and using type and pictures in makeup of newspaper pages.
- CO 2503. Acting. (3)** (Prerequisite: CO 1503). Three hours lecture. Principles of character interpretation. Classroom projects involving presentation of scenes from plays.
- CO 2524. Stagecraft and Lighting. (4)** (Prerequisite: CO 1503). Three hours lecture. Forty hours work on a major production. Theory and practice of set construction, scene design and stage lighting and its application to theater production.
- CO 2544. Makeup and Costuming. (4)** (Prerequisite: CO 1503). Three hours lecture. Forty hours work on a major production. Theory
- CO 2574. Summer Theater Workshop. (4)** Three hours lecture. Two hours laboratory. Daily observation and practice of acting and technical work in preparation of a production. May be repeated one semester.
- CO 2613. Introduction to Oral Interpretation. (3)** (Prerequisite: CO 1503). Three hours lecture. Basic principles of comprehending and communicating literature to a listening audience.
- CO 2990. Special Topics in Communications. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).
- CO 3203. Communication and Group Leadership. (3)** (Prerequisite: CO 2213). Three hours lecture. A study of communication as related to the functions and styles of group leadership.
- CO 3293. Corporate Communication. (3)** (Prerequisite: Junior standing). Study of applied communication techniques related to the development and proficiency of oral corporate communication skills.
- CO 3333. Advanced Television Production. (3)** (Prerequisite: CO 2333). Two hours lecture. Two hours laboratory. Advanced principles, techniques of producing and directing television programs.
- CO 3403. Introduction to Photography as Communication. (3)** Three hours lecture. Study and practice of fundamentals of photography as a communicative art.
- CO 3423. Feature Writing. (3)** (Prerequisite: CO 2413). Three hours lecture. Feature markets and practice in preparing and writing features for newspapers and magazines.
- CO 3443. Advanced News Writing and Reporting. (3)** (Prerequisite: CO 2423). Three hours lecture. Practice in writing more complex news stories and the responsibilities of the reporter in news gathering and writing.
- CO 3803. Principles of Public Relations. (3)** (Prerequisite: CO 1403 or consent of instructor). Three hours lecture. The role and origin of public relations in society, the identification and influence of publics, and applications of public relations principles to campaigns and organizations.
- CO 3813. Public Relations Case Problems. (3)** (Prerequisite: CO 2803). Three hours lecture. The analysis and valuation of specific real and hypothetical cases using public relations theory as a base.
- CO 3823. Public Relations Copy and Layout. (3)** (Prerequisites: CO 2413 and CO 3803). Three hours lecture. Practice of written communication skills used in public relations. Includes experience in writing and producing news releases, brochures, speeches and other devices.
- CO 3833. Interviewing in Communication. (3)** (Prerequisite: CO 1223). Three hours lecture. The communicative processes and adjustments necessary in preparing, organizing, wording, and participating in various types of interviews from both the interviewer and the interviewee perspectives.
- CO 3843. Media Relations. (3)** (Prerequisite: CO 3833). Three hours lecture. Study of interviewing and communication skills for reporters and the issues, problems, and strategies employed by interviewees related to radio, television, and print interviews.
- CO 3903. Advanced Cinema Studies. (3)** (Prerequisite: CO 1903 or EN 2434). Three hours lecture. A study of the forms, styles, and criticisms of cinema.
- CO 4000. Directed Individual Study.** Hours and credits to be arranged.
- CO 4053/6053. Internship in Communication. (3)** (Prerequisites: CO 2323 or CO 2333 for Radio/TV students or Communication majors only). Supervised work in production, sales or related fields for radio/TV students or in newspaper or magazine writing, editing or photography for journalism students.
- CO 4203/6203. Nonverbal Communication. (3)** (Prerequisite: CO 1223 or PSY 1013). Three hours lecture. Study of nonverbal cues as they affect the communication interface in numerous contexts including social events, political campaigns, and dramatic productions.
- CO 4213/6213. Political Communication. (3)** (Prerequisite: CO 1223). Three hours lecture. Analysis and evaluation of the verbal and non-verbal dimensions of political communication in the United States since 1609.
- CO 4223/6223. Advanced Communication Theory. (3)** (Prerequisite: CO 1223). Three hours lecture. Analysis of twentieth century com-

munication theories. A study of mass, interpersonal, and intra personal communication processes and effects.

**CO 4243/6243. Rhetorical Theory. (3)** (Prerequisite: CO 1223). Three hours lecture. Survey and criticism of the theories of public speaking found in the works of Plato, Aristotle, Cicero, Quintilian, and St. Augustine.

**CO 4253/6253. Elements of Persuasion. (3)** (Prerequisite: CO 1223). Three hours lecture. A study of the motivation of audiences and techniques of persuasive campaigns and communications.

**CO 4273/6273. Intercultural Communication. (3)** (Prerequisite: CO 1223 and Senior standing). Three hours lecture. A study of how communication behaviors differ between cultures. Frameworks for studying intercultural communication will be provided by studying one specific culture.

**CO 4303/6303. Telecommunication Management. (3)** (Prerequisite: CO 2333). Three hours lecture. Theory of management of all types of broadcasting stations.

**CO 4313/6313. Mass Media Law. (3)** (Prerequisite: Junior standing). Three hours lecture. Study and analysis of laws and regulations significantly affecting newspapers, magazines, motion pictures, and broadcasting in America.

**CO 4323/6323. Mass Media and Society. (3)** (Prerequisite: Junior standing). Three hours lecture. The effects of mass communication on social and cultural institutions.

**CO 4363/6363. Cable and Broadband Communications. (3)** (Prerequisites: 21 SH in Communication and junior status). Overview of cable and interacting technologies from historical, economic, philosophical, and political perspectives.

**CO 4373/6373. Practicum in Television News. (3)** (Prerequisites: CO 2333, 15 additional hours of CO courses and consent of the instructor). Two hours lecture, two hours laboratory. Theory and practice of producing a television news program.

**CO 4403/6403. Journalism Ethics. (3)** (Prerequisite: CO 2413). Three hours lecture. Examination of ethical problems in contemporary journalism.

**CO 4504/6504. History of the Theater. (4)** (Prerequisite: Junior standing). Four hours lecture. A survey of the theater with emphasis on the physical structure, production problems and theatrical personalities.

**CO 4524/6524. Directing. (4)** (Prerequisite: CO 2524 and junior or senior standing). Three hours lecture. Two hours laboratory. Evaluation of dramatic styles and analysis of stage composition. Supervised hours in actual directing experience.

**CO 4533/6533. Advanced Acting. (3)** (Prerequisite: CO 2503). Three hours lecture. Intensive study of the theories and techniques of acting in the various dramatic styles.

**CO 4573/6573. Theater Management. (3)** (Prerequisite: Junior standing). Two hours lecture. Two hours laboratory. Business organization and management for the educational (secondary and university), community, and professional theater, including budgeting, publicity, public relations and box office principles.

**CO 4583/6583. Playwriting. (3)** (Prerequisite: Completion of freshman composition and CO 1503). Three hours lecture. Practice in the fundamentals of dramatic composition. Reading, discussion, and analysis of written work.

**CO 4803/6803. Research in Public Relations and Advertising. (3)** (Prerequisite: CO 3803, or MKT 3013, or consent of instructor, or graduate standing). Three hours lecture. Theory and practice of primary and secondary research methods in public relations and advertising, including qualitative and quantitative methods and uses of new technologies.

**CO 4813/6813. Public Relations in Organizations. (3)** (Prerequisites: CO 3813, CO 4253/6253). Three hours lecture. Studies in using various communication techniques for image building and campaign development for profit and non-profit organizations.

**CO 4990/6990. Special Topics in Communications. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CO 7000. Directed Individual Study.** Hours and credits to be arranged.

**CO 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**CO 8213. Seminar in Communication Theory. (3)** (Prerequisite: CO 4223/6223). Analysis of intra personal, interpersonal, and mass communication variables. In-depth comparative study of the scientific and theoretical models for understanding communication processes and effects.

**CO 8253. Seminar in Persuasion. (3)** (Prerequisite: CO 4253/6253 or equivalent). Theoretical and research literature in attitude formation and change through communication.

**CO 8990. Special Topics in Communications. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Department of COUNSELOR EDUCATION and EDUCATIONAL PSYCHOLOGY

Office: 208 Montgomery Hall

Head and Major Advisor: Thomas W. Hosie

Professors: Dooley, Hendren, Housley, Underwood;  
Associate Professors: Cashwell, Dunn, Glossoff, Looby;  
Assistant Professors: Palmer, Wilson, Young.

NOTE: Several courses in Counselor Education are open to advanced undergraduates, but the courses are designed primarily as graduate work.

**COE 1323. Career Planning. (3)** Three hours lecture. Provides students with a basis for making career decisions and selecting an academic major.

**COE 2990. Special Topics in Counselor Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**COE 3313. Rehabilitation Services. (3)** Three hours lecture. Concepts, philosophies, and methods of rehabilitation services for physically, emotionally, or mentally disabled people.

**COE 4013/6013. Facilitative Skills Development. (3)** Three hours lecture. Introduction to the theory and practice of helping with emphasis on the development of basic communication skills. Applicable to a variety of settings.

**COE 4023/6023. Introduction to Counseling. (3)** Three hours lecture. Overview of counseling as a profession including specialty areas. Theories and techniques used in counseling. This course is not for Counselor Education majors.

**COE 4050/6050. Seminar for Guidance Counselors. (1-6)** Three hours lecture. Hours to be arranged. A study of current issues and trends in the field of guidance.

**COE 4303/6303. Rehabilitation of Visually Impaired Persons. (3)** Three hours lecture. Special issues and procedures related to vocational rehabilitation of persons with visual impairments.

**COE 4353/6353. Assistive Technology in the Rehabilitation Process. (3)** (Prerequisites: Undergraduates: COE 3313. Graduates: COE 6393, COE 8373 or permission of the instructor). Three hours lecture. Diverse applications of technologies are reviewed for potential impact with all forms of disability. Examines various roles played by technology in total rehabilitation process.

**COE 4363/6363. Introduction to Sign Language. (3)** Development of basic sign language skills, study of special needs of deaf persons, and understanding use of interpreters. (Same as EDX 4953/6953).

**COE 4513/6513. Paraprofessionals in Student Affairs. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Fundamental concepts and philosophies underlying the paraprofessional's role in college student affairs. Includes supervised and paraprofessional experience.

**COE 4713/6713. Issues in Aging. (3)** Three hours lecture. An examination and integration of gerontological issues related to mental health of the elderly.

**COE 4723/6723. Group Dynamics. (3)** Three hours lecture. Experience and instruction in the dynamics of group counseling.

**COE 4743/6743. Gender Issues in Counseling. (3)** Three hours lecture. Overview of gender issues and their relationship to the counseling process.

**COE 4903/6903. Developmental Counseling and Mental Health. (3)** Three hours lecture. One hour laboratory. Methods of iden-



tifying and meeting normal emotional and social needs of children and adults. Emphasis on maintaining better mental health conditions in schools.

**COE 4990/6990. Special Topics in Counselor Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**COE 6313. Resources for Visually Impaired Persons. (3)** Three hours lecture. Survey of issues, techniques, and resources for independent living, orientation and mobility, and communication of visually impaired persons.

**COE 6373. Vocational Assessment of Special Needs Persons. (3)** Two hours lecture. Two hours laboratory. (Prerequisite: EPY 8263 or equivalent). Comprehensive vocational assessment, counseling, and individual planning for special needs persons. Job/training analysis, vocational interest/aptitude tests, work samples, and situational assessment. (Same as TKT 8653).

**COE 6383. Work Samples in Vocational Assessment. (3)** (Prerequisites: CO 8083 or equivalent; and COE 6373 or consent of instructor). Two hours lecture and two hours laboratory. Administration scoring, and interpretation of commercial work samples systems in vocational assessment to include: VALPAR, SINGER, JEVS McCarron-Dial. Development of job simulations and work samples. (Same as EDX 8663).

**COE 6393. Vocational Rehabilitation Counseling. (3)** Three hours lecture. Rehabilitation legislation and the rehabilitation counseling process.

**COE 7000. Directed Individual Study.** Hours and credits to be arranged.

**COE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**COE 8013. Counseling Skills Development. (3)** (Prerequisite: COE 6013 and COE 8023). Three hours lecture. Theory and practice of counseling with emphasis on development of advanced skills required for assisting clients.

**COE 8023. Counseling Theory. (3)** Three hours lecture. Study of the major counseling theories.

**COE 8043. Group Techniques and Procedures. (3)** (Prerequisite: COE 8023). Three hours lecture. Group counseling theory, dynamics, processes, and leadership functions.

**COE 8053. Practicum. (3)** (Prerequisites: COE 8013, 8023, and consent of department). Seminar and supervised field experience.

**COE 8063. Research Techniques for Counselors. (3)** Three hours lecture. Methods of research and evaluation in counseling.

**COE 8073. Cultural Foundations in Counseling. (3)** Three hours lecture. Examination of individual differences due to socialization acquired in distinct cultural and socioeconomic environments. Implications for counseling.

**COE 8083. Assessment Techniques for Counselors. (3)** Three hours lecture. Techniques and instruments available for the assessment of individuals.

**COE 8093. Seminar in Counseling. (3)** (Prerequisite: COE 8023 or equivalent). Seminar in counseling trends and approaches with application to various settings and problems.

**COE 8163. Spirituality in Counseling. (3)** Three hours lecture. Didactic instruction of developmental models and clinical interventions related to the interface of spirituality and counseling.

**COE 8173. Counseling Gifted Students. (3)** Three hours lecture. Counseling functions that relate to the total development of gifted students. Directed Individual Study and utilization of resources necessary for optimal growth.

**COE 8203. Placement and Career Development Counseling. (3)** Three hours lecture. Studies of career development and academic/job placement; occupational classification schemes; trends in the world of work; compiling and utilizing career information in counseling.

**COE 8293. Supervised Project. (3)** (Prerequisite: Consent of department). Study of a topic in counseling or student development.

**COE 8303. Family Counseling Theory. (3)** (Prerequisite: COE 8023). Three hours lecture. Study of the theory and practice of family counseling.

**COE 8363. Psychological Aspects of Disability. (3)** Three hours lecture. Psychological and social factors influencing adjustment of disabled persons.

**COE 8373. Medical Aspects of Disability. (3)** Three hours lecture. Psychological and social factors influencing adjustment of disabled persons.

**COE 8383. Job Placement in Rehabilitation. (3)** Three hours lecture. Process of job placement for disabled persons.

**COE 8393. Advanced Practicum. (3)** (Prerequisite: COE 8053 and consent of department). Advanced supervised field experience.

**COE 8413. Personal, Social, and Work Adjustment Counseling. (3)** Two hours lecture. Two hours laboratory. Personal, social, work adjustment counseling and employability skills training for disabled persons and others with special needs. Includes individual, group, and situational techniques. (Same as EDX 8413 and TKT 8413).

**COE 8553. Student Affairs in Higher Education. (3)** Three hours lecture. Overview of student development programs in higher education. Emphasis on philosophical foundations, organization, and the role of each service within a student development program.

**COE 8523. Student Development Theory. (3)** Three hours lecture. Overview of theories of student development in higher education.

**COE 8533. Literature of Student Affairs. (3)** Three hours lecture. Provides an overview of student affairs in higher education through extensive reading in the field and individual study of specific aspects.

**COE 8543. Legal Issues. (3)** Three hours lecture. Legal and ethical issues in student affairs and counseling.

**COE 8633. Psychosocial Rehabilitation. (3)** Three hours lecture. Counseling techniques that assist in the community adjustment of seriously mentally ill clients.

**COE 8703. Community Counseling. (3)** Three hours lecture. Overview of the history, philosophy, trends, and practice of community counseling.

**COE 8730. Internship. (1-9)** (Prerequisite: COE 8053.) Supervised field experience.

**COE 8740. Academic Year School Internship. (1-9)** (Prerequisite: Consent of department). Supervised field experience in school counseling for one academic school year.

**COE 8750. Internship. (1-9)** (Prerequisite: Consent of department). Supervised field experience for Ed.S students.

**COE 8773. Counseling Chemically Dependent Client. (3)** Three hours lecture. Information about the etiology, diagnosis, and treatment of chemical dependence.

**COE 8783. Counseling the Chemically Dependent Family. (3)** (Prerequisite: COE 8773.) Three hours lecture. Provide information on the effects of chemical dependence on the family and counseling programs for this disorder.

**COE 8813. Counseling Elderly Clients. (3)** Three hours lecture. Concepts, attitudes, and skills needed to provide counseling for elderly clients.

**COE 8903. School Counseling Services. (3)** Three hours lecture. Overview of a comprehensive school counseling program.

**COE 8913. Counseling Children. (3)** Three hours lecture. Didactic instruction and discussion of counseling techniques useful in community and school settings to work with early school-aged children.

**COE 8990. Special Topics in Counselor Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**COE 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**COE 9013. Counseling Supervision. (3)** (Prerequisite: COE 8730 and 8013). Three hours lecture. The theory and practice of providing counseling supervision for practicing counselors and student development professionals.

**COE 9023. Advanced Counseling Theory. (3)** (Prerequisite: COE 8023). Three hours lecture. Study of selected counseling strategies. Development of a personal approach to counseling.

**COE 9033. Advanced Seminar. (3)** Three hours lecture. Advanced study of a topic in counseling.

**COE 9740. Internship. (1-9)** (Prerequisite: Consent of department). First supervised field experience for doctoral students.

**COE 9750. Internship. (1-9)** (Prerequisite: Consent of department). Second supervised field experience for doctoral students.

## CRIMINAL JUSTICE and CORRECTIONS

(For departmental information, see SOCIOLOGY, ANTHROPOLOGY and SOCIAL WORK.)

**COR 2990. Special Topics in Corrections. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**COR 3103. The Criminal Justice System. (3)** (Prerequisites: Six hours of social sciences and consent of instructor). Three hours lecture. The interrelationships of law enforcement, prosecution, and the courts, particularly how each affects the correctional process.

**COR 3310. Field Work. (1-6)** (Prerequisites: SO 4513). One to six hours practicum within selected Corrections agencies, individually supervised performance and self-development in relation to clients, agency workers, and provisions of Correctional services.

**COR 3343. Gender, Crime, and Justice. (3)** Three hours lecture. Gender differences in criminal behavior, victimization, and criminal justice processing, emphasizing the unique experiences of women in all of these areas. (Same as SO 3343).

**COR 3320. Field Work. (1-6)** (Prerequisites: COR3310). One to six hours practicum within selected Corrections agencies, individually su-

pervised performance and self-development in relation to clients, agency workers, and provisions of Correctional services.

**COR 3503. Violence in the United States. (3)** Three hours lecture. In-depth study of violence, including types of violence, categories of offenders and victims, its social causes and potential solutions. (Same as SO 3503).

**COR 4000. Directed Individual Study.** Hours and credits to be arranged.

**COR 4233/6233. Juvenile Delinquency. (3)** (Prerequisites: Six hours of Sociology or related courses and consent of instructor). Three hours lecture. Critical study of problems, causes, ways of handling; attitudes, roles and relationships of persons involved, including youthful offender, social worker, court and law enforcement officials. (Same as SO 4233/6233).

**COR 4990/6990. Special Topics in Corrections. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## COOPERATIVE EDUCATION PROGRAM

Office: 222 Walker Engineering Building

Director: Luther B. Epting, Associate Director: John Michael Mathews,  
Assistant Director: Beth C. Callahan, Coordinators: Becky Davis, Mary Loyd Lowrey

**CP 2103. First Work Semester. (3)** (Prerequisite: Approval of the Cooperative Education Office, acceptance by employing organization, and admission to the University).

**CP 2203. Second Work Semester. (3)** (Prerequisite: CP 2103).

**CP 3303. Third Work Semester. (3)** (Prerequisite: CP 2203).

**CP 3403. Fourth Work Semester. (3)** (Prerequisite: CP 3303).

**CP 4503. Fifth Work Semester. (3)** (Prerequisite: CP 3403).

**CP 4603. Sixth Work Semester. (3)** (Prerequisite: CP 4503).

**CP 4703. Seventh Work Semester. (3)** (Prerequisite: CP 4603).

**CP 4803. Eighth Work Semester. (3)** (Prerequisite: CP 4703).

**CP 8013. First Work Semester. (3)** (Prerequisite: Approval of the Cooperative Education Office, acceptance by employing organization, and admission to the University and Graduate School).

**CP 8023. Second Work Semester. (3)** (Prerequisite: CP 8013).

**CP 8033. Third Work Semester. (3)** (Prerequisite: CP 8023).

**CP 8043. Fourth Work Semester. (3)** (Prerequisite: CP 8033).

**CP 8053. Fifth Work Semester. (3)** (Prerequisite: CP 8043).

## Department of COMPUTER SCIENCE

Office: 300 Butler Hall

Professors Bridges, Carter, Hodges (Head), and Philip;  
Professor Emeriti Davis, Dearholt, Ellis, Matthews, and Takacs;  
Associate Professors Banicesu, G. Boggess, Little, Reese, Skjellum, and Vaughn;  
Assistant Professors Allen, Dampier, Hansen, Jamil and Luke;  
Instructors Hossain and Henderson

**CS 1013. Basic Computer Concepts and Applications. (3)** Three hours lecture. Basic concepts of computing using large-scale computers and personal computers. Introduction to operating system commands, applications software (word processing, spreadsheets, communications, etc.), and rudimentary programming. (Credit will not be granted for this course and BIS 1013 or BIS 3713).

**CS 1213. Computer Programming with Fortran. (3)** (Prerequisite: MA 1313 or equivalent). Three hours lecture. Problem solving methods, algorithm development, debugging and documentation in the Fortran programming language; applications. (Not recommended to students with credit in CS 1233 or CS 1253 or equivalent).

**CS 1233. Computer Programming with C. (3)** (Prerequisite: MA 1313 or equivalent). Three hours lecture. Problem-solving methods, algorithm development, debugging and documentation in the C Programming language; applications. (Not recommended to students with credit in CS 1213 or CS 1253 or equivalent).

**CS 1273. Computer Programming with Java. (3)** (Prerequisite: MA 1313 or equivalent). Three hours lecture. Problem-solving methods, algorithm development, debugging and documentation in the Java programming language; applications. (Not recommended to students with credit in CS 1213 or CS 1233 or equivalent).

**CS 1284. Introduction to Computer Programming. (4)** (Prerequisite: MA 1313 or equivalent). Three hours lecture. Three hours laboratory. Introductory problem solving and computer programming using object-oriented techniques. Theoretical and practical aspects of programming and problem solving. Designed for CS, CPE, and SE majors.

**CS 1314. Computer Science I. (4)** (Prerequisites: One of CS 1213, or CS 1233 with a grade of C or better, and MA 1313). Three hours lecture. Three hours laboratory. Software design, implementation, testing and documentation based on the object-oriented paradigm. Algorithm development and analysis, abstract data types including lists and trees, recursion. Applications.

**CS 1384. Intermediate Computer Programming. (4)** (Prerequisite: CS 1284 with a grade of C or better). Three hours lecture. Three

hours laboratory. Object-oriented problem solving, design, and programming. Introduction to data structures, algorithm design and complexity. Second course in sequence designed for CS, CPE and CE majors.

**CS 2314. Computer Science II. (4)** (Prerequisites: CS 1314 with a grade of C or better and MA 1713). Three hours lecture. Three hours laboratory. Continuation of CS 1314. Intermediate software design and development based on object-oriented paradigm. Sorting and searching, relational data model, file organization, data representations.

**CS 2324. Computer Science III. (4)** (Prerequisite: CS 2314 with a grade of C or better). Three hours lecture. Three hours laboratory. Continuation of CS 2314. Software design and design quality; design patterns and reuse; testing; distribution and concurrency; applications, including real time and parallel; group projects.

**CS 2383. Data Structures and Analysis of Algorithms. (3)** (Prerequisite: CS 1384 and MA 1713 both with a grade of C or better). Three hours lecture. Non-linear data structures and their associated algorithms. Trees, graphs, hash tables, relational data model, file organization. Advanced software design and development.

**CS 2813. Discrete Structures. (3)** (Prerequisite: CS 1314 with a grade of C or better and MA 1313 or equivalent). Three hours lecture. Concepts of algorithms, induction, recursion, proofs; topics from logic, set theory, combinatorics, graph theory fundamental to study of computer science.

**CS 2990. Special Topics in Computer Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CS 3041. FORTRAN Programming Laboratory. (1)** (Prerequisite: A grade of C or better in either CS 1233 or equivalent). Two hours laboratory. Programming and problem-solving using the FORTRAN programming language; structured program design, debugging and testing; file management techniques.

**CS 3124. Microprocessors I. (4)** (Prerequisites: CS 1233 or 1314; ECE 3714). Three hours lecture. Three hours laboratory. Architecture of microprocessor-based systems. Study of microprocessor operation, assembly language, arithmetic operations, and interfacing. (Same as ECE 3724).

**CS 3183. Systems Programming. (3)** (Prerequisite: CS 2314 with a grade of C or better). Three hours lecture. Overview of contemporary systems programming concepts, tools, and techniques. Shell programming, systems administration tools, distributed systems, and Internet concepts.

**CS 3212. Software Engineering Senior Project I. (2)** (Prerequisite: CS 4224 with C or better). Four hours laboratory. Software requirements elicitation and specification, cost estimation, scheduling, development of project management and quality assurance plans, reviews.

**CS 3222. Software Engineering Senior Project II. (2)** (Prerequisite: CS 4224 with C or better). Four hours laboratory. Team work, software design, construction, implementation of project management and quality assurance plans, and configuration management.

**CS 3813. Introduction To Formal Languages and Automata. (3)** (Prerequisite: CS 2314 and CS 2813, both with a grade of C or better). Three hours lecture. Theoretical foundations of computer science; formal languages and automata, parsing of context-free languages; Turing machines; introduction to computability and complexity.

**CS 3981. Social and Ethical Issues in Computing. (1)** (Prerequisite: Senior standing.) One hour lecture. Study of major social and ethical issues in computing, including history of computing, impact of computers on society, and the computer professional's code of ethics.

**CS 4000. Directed Individual Study.** Hours and credits to be arranged.

**CS 4113/6113. Computer Architecture. (3)** (Prerequisites: CS 3124/ECE 3724 with a grade of C or better). Three hours lecture. Detailed design and implementation of a stored-program digital computer system. Designs for the CPU, I/O subsystems, and memory organizations. ALU design and computer arithmetic. (Same as ECE 4713/6713).

**CS 4153/6153. Data Communications and Computer Networks. (3)** (Prerequisites: CS 2314 with a grade of C or better). Three hours lecture. The concepts and practices of data communications to provide the student with an understanding of the hardware and software used for data communications.

**CS 4163/6163. Designing Parallel Algorithms. (3)** (Prerequisites: CS 2324 or CS 4733/6733 with a grade of C or better). Three hours lecture. Techniques for designing algorithms to take advantage efficiently of different parallel architectures. Includes techniques for parallelizing sequential algorithms and techniques for matching algorithm to architectures.

**CS 4213/6213. Software Engineering I. (3)** (Prerequisite: CS 2324 with a grade of C or better). Two hours lecture. Two hours laboratory. Software planning; software requirements analysis and specification; software design; testing and debugging; maintenance; documentation.

**CS 4224/6224. Software Engineering II. (4)** (Prerequisites: CS 4213/6213 with a C or better). Three hours lecture. Two hours laboratory. Advanced topics in software engineering including: alternative design methods, CASE, software quality assurance, software metrics, project management, cost estimation, configuration management, reuse, reengineering and maintenance.

**CS 4233/6233. Software Architecture and Design Paradigms. (3)** (Prerequisite: CS 4224/6224 with a C or better). Three hours lecture. Topics include software architectures, methodologies, model representations, component-based design, patterns, frameworks, CASE-based designs, and case studies.

**CS 4243/6243. Information and Computer Security. (3)** (Prerequisites: CS 4504/6504 and CS 4733/6733 both with a grade of C or better). Three hours lecture. Topics include encryption systems, operating system security, database security, network security, electronic commerce, system threats, and risk avoidance procedures.

**CS 4283/6283. Software Testing and Quality Assurance. (3)** (Prerequisite: CS 4213/6213 with a C or better). Three hours lecture. Topics include methods of testing, verification and validation, quality assurance processes and techniques, methods and types of testing, and ISO 9000/SEI CMM process evaluation.

**CS 4413/6413. Principles of Computer Graphics. (3)** (Prerequisites: CS 2314 with a grade of C or better and MA 3113). Three hours lecture. Graphics hardware; algorithms; graphics primitives; windowing and clipping; transformations; 3D graphics; shading; hidden surfaces; standards.

**CS 4504/6504. Database Management Systems. (4)** (Prerequisites: CS 2314 and CS 2813 both with a grade of C or better). Three hours lecture. Two hours laboratory. Modern database models; basic database management concepts; query languages; database design

through normalization; advanced database models; extensive database development experience in a team environment.

**CS 4633/6633. Artificial Intelligence. (3)** (Prerequisite: CS 3813 with a grade of C or better). Three hours lecture. Study of the computer in context with human thought processes. Heuristic programming; search strategies; knowledge representation; natural language understanding; perception; learning.

**CS 4643/6643. Expert System Design. (3)** (Prerequisite: CS 4633/6633 with a grade of C or better). Two hours lecture. Two hours laboratory. Introduction to design and development of expert systems; prototyping and production of an expert system; knowledge acquisition; overview of theoretical aspects; review of current literature.

**CS 4653/6653. Cognitive Science. (3)** (Prerequisite: CS 4633/6633 or PSY 4713 or PHI 4143/6143 or AN 4623/6623 or EN 4403/6403). Three hours lecture. The nature of human cognition from an interdisciplinary perspective, primarily utilizing a computational model, including insights from philosophy, psychology, linguistics, artificial intelligence, anthropology, and neuroscience. (Same as PSY 4653/6653).

**CS 4663/6663. Human-Computer Interaction. (3)** (Prerequisite: CS 3813 for Computer Science majors with a grade of C or better, consent of instructor for non-majors). Three hours lecture. Conceptual models formed by users, aspects of computer systems which affect users, interface design and evaluation, and examples and critiques of specific interfaces.

**CS 4673/6673. Psychology of Human-Computer Interaction. (3)** (Prerequisite: PSY 3713 or CS 4663/6663 or IE 4113/6113 or consent of the instructor). Two hours lecture. Two hours laboratory. Exploration of psychological factors that interact with computer interface usability. Interface design techniques and usability evaluation methods are emphasized. (Same as IE 4123/6123 and PSY 4743/6743).

**CS 4713/6713. Programming Languages. (3)** (Prerequisites: CS 3124 or ECE 3724 and CS 3813 both with a grade of C or better). Three hours lecture. An introduction to programming language specification and analysis. Additional topics include control structures, data types and structures, run-time environments, binding strategies, compilers, and interpreters.

**CS 4723/6723. Compiler Construction. (3)** (Prerequisite: Credit or registration in CS 4713/6713). Formal treatment of context-free programming language translation and compiler design concepts, including: lexical, syntactic and semantic analysis; machine-dependent code generation and improvement; and error processing.

**CS 4733/6733. Operating Systems I. (3)** (Prerequisites: CS 2314 and CS 3124 or ECE 3724 both with a grade of C or better). Three hours lecture. Historical development of operating systems to control complex computing systems; process management, communication, scheduling techniques; file system concepts and operation; data communication, distributed process management.

**CS 4743/6743. Operating Systems II. (3)** (Prerequisites: CS 4733/6733 with a grade of C or better). Three hours lecture. Integrated treatment of hardware and software concepts in operating systems design; procedure implementation; creation and control of processes; name and space management.

**CS 4833/6833. Introduction to Analysis of Algorithms. (3)** (Prerequisites: CS 2314, CS 2813, and MA 2733 all with a grade of C or better). Three hours lecture. Study of complexity of algorithms and algorithm design. Tools for analyzing efficiency; design of algorithms, including recurrence, divide-and-conquer, dynamic programming, and greedy algorithms.

**CS 4990/6990. Special Topics in Computer Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CS 5133. Introduction to Computer Systems. (3)** (Prerequisite: CS 1213, or equivalent, with a grade of C or better). Two hours lecture. Two hours laboratory. Representation of information; architecture of computing systems; machine and assembly-level languages; assembler techniques; program segmentation and linkage.

**CS 7000. Directed Individual Study.** Hours and credits to be arranged.

**CS 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**CS 8011. Graduate Seminar I. (1)** One hour. Reports on recent advances and problems in computer science by students and staff; student participation, general discussion. (May be taken for credit more than once).

**CS 8021. Graduate Seminar II. (1)** One hour. Student presentation of recent advances and problems in computer science. (May be taken for credit more than once).

**CS 8080. Directed Project in Computer Science. (1-3)** Hours and credits to be arranged. An individual professional project open only

to candidates for the Master of Science degree (project option). Formal written and oral project reports are required.

**CS 8123. Advanced Computer Organization. (3)** Three hours lecture. Computer architecture; ALU and CPU structure; microprogramming; arithmetic and nonarithmetic operations; memory addressing and control; bus structures, I/O controllers and interrupt handling.

**CS 8153. Advanced Data Communications. (3)** (Prerequisite: CS 4153/6153 or equivalent). Three hours lecture. A study of advanced concepts and practices of data communications with particular emphasis on Local Area Networks and Transmission Control Protocol/Internet Protocol (TCP/IP).

**CS 8163. Parallel and Distributed Scientific Computing. (3)** (Prerequisite: CS 4163/6163). Three hours lecture. Algorithms for distributed scientific computing; performance evaluation; scheduling and load balancing issues for scientific applications; architectural issues affecting performance.

**CS 8233. Software Engineering Project Management. (3)** (Prerequisite: CS 4213/6213). Three hours lecture. Management of the engineering of software products including estimating, planning, process management, and special topics.

**CS 8243. Software Specification. (3)** (Prerequisite: CS 4213/6213). Three hours lecture. Writing software specifications, transforming specifications into code, and verifying transformations using formal methods.

**CS 8253. Software Design. (3)** (Prerequisite: CS 4213/6213). Three hours lecture. Software design principles, attributes, models, and methodologies; object-oriented designs; real-time system design; user interface design; design verification; reusability issues; tools; current issues.

**CS 8263. Software Verification and Validation. (3)** (Prerequisites: CS 3813 and either CS 4213/6213 or CS 8253). Three hours lecture. The theory and practice of ensuring high-quality software products, including quality assessment, proof of correctness, testing, and verification and validation methodology.

**CS 8273. Software Requirements Engineering. (3)** (Prerequisites: CS 4213/6213 with a C or better). Three hours lecture. An in-depth study of current research and practice in requirements elicitation, requirements analysis, requirements specification, requirements verification and validation, and requirements management.

**CS 8413. Visualization. (3)** (Prerequisite: CS 4413/6413). Three hours lecture. Essential algorithms for three-dimensional rendering and modeling techniques; viewing transformations, illumination, surface modeling; methodologies for visualization of scalar and vector fields in three dimensions.

**CS 8433. Advanced Computer Graphics. (3)** (Prerequisites: CS 4413/6413). Three hours lecture. Realistic, three-dimensional image generation; modeling techniques for complex three-dimensional scenes; advanced illumination techniques; fractal surface modeling; modeling and rendering of natural phenomena.

**CS 8533. Database System Design. (3)** (Prerequisite: CS 4504/6504). Three hours lecture. Query processing; transactions and concurrency control; crash recovery; distributed database issues; security and integrity; contemporary research issues.

**CS 8543. Current Issues in Database Systems. (3)** (Prerequisites: CS 4504/6504). Three hours lecture. Extensive reading and discussion; advanced data models; query languages; cooperative databases; data mining; data warehousing; user interfaces; web databases.

**CS 8613. Cognitive Models of Skill. (3)** (Prerequisite: Graduate standing). Three hours lecture. Introduction to cognitive modeling, with a focus on computational models of skill acquisition and expert skill (Same as PSY 8723).

**CS 8633. Natural Language Processing. (3)** (Prerequisite: CS 4633/6633). Three hours lecture. Automated processing of natural lan-

guage including syntax, semantics, pragmatics, and discourse analysis; survey of current literature.

**CS 8643. Intelligent Systems. (3)** (Prerequisite: CS 4633/6633). Three hours lecture. Advanced implementation and theoretical issues for intelligent systems design methodologies including representation, uncertainty, opportunistic reasoning; human-computer interaction issues; readings and discussion or current research.

**CS 8653. Knowledge Representation and Knowledge Bases. (3)** (Prerequisites: CS 4633/6633). Three hours lecture. Methods of representing knowledge; languages and tools for building knowledge-based expert systems; inexact reasoning; applications of knowledge-based expert systems.

**CS 8663. Neural Computing. (3)** (Prerequisite: CS 4633/6633). Three hours lecture. Introduction to non-traditional methods of simulating human cognitive processes on the computer. Discussions of connectionism, neural networks, and other models of cognition such as cellular automata.

**CS 8733. Advanced Systems Programming. (3)** (Prerequisite: CS 4733/6733). Three hours lecture. Concepts of multi-programming, multi-processing, time-sharing; topics to include interruptibility, priority scheduling, error recovery procedures, storage management, input-output.

**CS 8813. Formal Languages and Automata Theory. (3)** (Prerequisite: CS 3813). Three hours lecture. Alphabets, languages, grammars; finite state machines, regular grammars; pushdown automata, context-free languages; linear bounded automata, context-sensitive languages; Turing machines; unsolvability; closure properties of languages.

**CS 8823. Introduction to Combinatorics and Graph Theory. (3)** (Prerequisites: CS 3813, and MA 1723 or consent of instructor). Three hours lecture. Permutations, combinations, generating functions, recurrence relations, inclusion and exclusion, graphs, trees, circuits and cutsets, planar and dual graphs, special topics.

**CS 8833. Algorithms. (3)** (Prerequisites: CS 4833/6833). Three hours lecture. Advanced techniques for designing and analyzing algorithms; advanced data structures; case studies, NP-completeness including reductions; approximation algorithms.

**CS 8843. Complexity of Sequential and Parallel Algorithms. (3)** (Prerequisite: CS 4833/6843). Three hours lecture. Complexity of sequential algorithms, theory of complexity parallel algorithms.

**CS 8990. Special Topics in Computer Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CS 9000. Dissertation Research and Dissertation.** Hours and credits to be arranged.

**CS 9133. Topics in High Performance Computing. (3)** (Prerequisite: Consent of Instructor). Three hours lecture. Reading and study of current work related to the area of high performance computing. Intended for doctoral students. (May be taken for credit more than once).

**CS 9253. Topics in Software Engineering. (3)** (Prerequisite: Consent of instructor.) Three hours lecture. Reading and study of current work related to the area of software engineering. Intended for doctoral students. (May be taken for credit more than once).

**CS 9413. Topics in Computer Graphics and Visualization. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Reading and study of current work related to the area of computer graphics and visualization. Intended for doctoral students. (May be taken for credit more than once).

**CS 9633. Topics in Artificial Intelligence. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Reading and study of current work related to the area of artificial intelligence. Intended for doctoral students. (May be taken for credit more than once).

## College of VETERINARY MEDICINE

Offices: College of Veterinary Medicine Building (Wise Center)

### Veterinary Technology

**CVM 2104. Small Animal Health Techniques. (4)** Four hours practicum. Supervised rotation through the Health Assessment Service of the Small Animal Clinic. Students participate in all technical aspects of patient care and health management. (Offered to students enrolled in the Veterinary Technology Program ONLY).

**CVM 2114. Small Animal Medical Techniques. (4)** Four hours practicum. Supervised rotation through the Medical Service of the Small Animal Clinic. Students participate in all technical aspects of patient diagnosis and care. (Offered to students enrolled in the Veterinary Technology Program ONLY).

**CVM 2124. Equine Medical Techniques. (4)** Four hours practicum. Supervised rotation through the Equine section of the Large

Animal Clinic. Students participate in all technical aspects of patient diagnosis and care. (Offered to students enrolled in the Veterinary Technology Program ONLY).

**CVM 2134. Food Animal Medical Techniques. (4)** Four hours practicum. Supervised rotation through the Food Animal Unit of the Large Animal Clinic. Students participate in all technical aspects of food animal diagnosis, herd health assessment and management. (Offered to students in the Veterinary Technology Program ONLY).

**CVM 2144. Surgical Techniques. (4)** Four hours practicum. Supervised rotation through the Surgical Service of the Animal Health Center. Students participate in all technical aspects of surgery setup, patient care and surgical preparation. (Offered to students enrolled in the Veterinary Technology Program ONLY).

**CVM 2154. Anesthetic Techniques. (4)** Four hours practicum. Supervised rotation through the Anesthesia Service of the Animal Health Center. Students participate in all technical aspects of preanesthetic evaluation, anesthetic maintenance and recovery. (Offered to students enrolled in the Veterinary Technology Program ONLY).

**CVM 2164. Radiologic and Imaging Techniques. (4)** Four hours practicum. Supervised rotation through the Radiology Service of the Animal Health Center. Students participate in all technical aspects of radiography, ultrasound imaging and radiotherapy. (Offered to students enrolled in the Veterinary Technology Program ONLY).

**CVM 2172. Technical Laboratory Services. (2)** Two hours practicum. Supervised rotation through the Laboratory Service of the College of Veterinary Medicine. Students participate in all technical aspects of laboratory sample collection and analysis. (Offered to students enrolled in the Veterinary Technology Program ONLY).

**CVM 2182. Techniques with Laboratory Animals. (4)** Two hours practicum. Supervised rotation through the Laboratory Animal Health Unit of the College of Veterinary Medicine. Students participate in all technical aspects of laboratory animal care and management. (Offered to students in the Veterinary Technology Program ONLY).

**CVM 2202. Pharmacy Techniques. (4)** Two hours practicum. Supervised rotation through the Pharmacy of the College of Veterinary Medicine. Students participate in all technical aspects of pharmaceutical preparation, dispensing, inventory and management. (Offered to students in the Veterinary Technology Program ONLY).

**CVM 2212. Necropsy Techniques. (2)** Two hours practicum. Supervised rotation through the Necropsy Section of the Diagnostic Laboratory. Students participate in all aspects of necropsy preparation, performance, record keeping, sample collection and cleanup. (Offered to students in the Veterinary Technology Program ONLY).

**CVM 2302. Animal Health Technical Procedures. (2)** One hour lecture. One hour laboratory. Orientation to basic animal health technical procedures including: patient records, diagnostic, therapeutic and animal nursing procedures. (Offered to students in the Veterinary Technology Program ONLY).

**CVM 2312. Laboratory Animal Care. (4)** Two hours practicum. Orientation to basic principles of laboratory animal care. An introduction to the scientific basis of laboratory animal use. An overview of animal welfare regulations. (Offered to students in the Veterinary Technology Program ONLY).

**CVM 2321. Veterinary Business Procedures. (2)** One hour practicum. Supervised clinical rotation involving the business procedures in a veterinary practice. (Offered to students in the Veterinary Technology Program ONLY).

**CVM 2990. Special Topics in Veterinary Medicine. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CVM 4263/6263. Wildlife Diseases. (3)** Two hours lecture. Four hours laboratory, alternate weeks. Effects and management of parasites and diseases in wild bird and mammal populations. (Same as WF 4263/6263).

## Doctor of Veterinary Medicine

### YEAR 1: Summer

**CVM 5026-5036. Basic Concepts in Veterinary Medicine. (6,6)** Six hours practicum. The study of fundamental concepts in veterinary medicine including anatomic perspectives, homeostasis, cell biology, concepts of health and disease, and principles of embryology.

### YEAR 1: Fall

**CVM 5049-5059. Principles of Veterinary Anatomy and Physiology. (9,9)** Nine hours practicum. The study of basic principles of veterinary anatomy and physiology. A systems based approach to the understanding of structure and function of the animal body.

### YEAR 1: Spring

**CVM 5003. Professional Development I. (3)** Lecture. An overview of the Veterinary Medical profession, orientation to the curriculum, student development, responsibilities, evaluation, professional ethics, and communication skills.

**CVM 5013. Fundamentals of Clinical Science 1. (3)** Lecture/Laboratory. The initial application of knowledge and skills to decision-making to include animal care, handling, restraint, and behavior.

**CVM 5069-5079. Introduction to The Interdisciplinary Study of Veterinary Medicine. (9,9)** Nine hours practicum. Introduction to

the study of veterinary medicine through an interdisciplinary approach. A case-based approach to understanding the interrelationships between structure, function, pathology, disease and therapeutics.

### YEAR 2: Fall

**CVM 5129-5139. Interdisciplinary Study of Veterinary Medicine. (9,9)** Nine hours practicum, nine hours practicum. The study of veterinary medicine through an interdisciplinary approach. A case-based approach to understanding the interrelationships between structure, function, pathology, disease, and therapeutics.

### YEAR 2: Spring

**CVM 5103. Professional Development II. (3)** Lecture. An overview of the Veterinary Medical profession, orientation to the curriculum, student development, responsibilities, evaluation, professional ethics, and communication skills.

**CVM 5149-5159. Advanced Interdisciplinary Study of Veterinary Medicine. (9,9)** Nine hours practicum, Nine hours practicum. Advanced study of veterinary medicine through an interdisciplinary approach. A case-based approach to understanding interrelationships between structure, function, pathology, disease and therapeutics.

**CVM 4363. Fundamentals of Clinical Science II (2)** One hour lecture. Three hours laboratory. The initial application of knowledge and skills to decision-making to include animal care, handling and restraint, principles of surgery, and problem-oriented medical records.

## YEAR 3: The Clinical Problem

### Services and Practices

**CVM 5000. Directed Individual Study in Veterinary Medicine. (1-6)** Variable hours practicum. (May be repeated for credit). Research projects and/or literature reviews supervised by a faculty mentor in the student's selected area of interest.

**CVM 5214. Laboratory Services. (4)** Four hours practicum. Supervised rotation through the Diagnostic Laboratory of the Animal Health Center. Responsibilities include diagnostic techniques and data interpretation in clinical pathology, pathology, parasitology and bacteriology.

**CVM 5224. Radiology. (4)** Four hours practicum. Supervised rotation in Radiology. Areas of study include radiographic and ultrasound techniques and interpretation and radiotherapy.

**CVM 5234. Anesthesiology. (4)** Four hours practicum. Supervised rotation in Anesthesiology. Areas of study include preanesthetic patient evaluation, anesthetic induction, maintenance and monitoring and postanesthetic patient management.

**CVM 5246. Community Practice. (6)** Six hours practicum. Supervised rotation through the Community Practice service of the Small Animal Clinic. Students participate in all aspects of patient care and health management.

**CVM 5256. Small Animal Surgery. (6)** Six hours practicum. Supervised rotation through Small Animal Surgery. Students participate in the receiving, analysis, surgery and management of patients referred for surgical care.

**CVM 5266. Equine Medicine & Surgery. (6)** Six hours practicum. Supervised rotation through the Equine unit of the Large Animal Clinic. Students participate in the receiving, analysis, and management of patients referred for care.

**CVM 5276. Food Animal Practice. (6)** Six hours practicum. Supervised rotation through the Food Animal section of the Animal Health Center. Students participate in problem analysis, case management and development of health maintenance programs.

### YEAR 4: Career Options

**CVM 5302. Professional Development IV. (2)** One hour lecture. Three hours laboratory. Advanced communications skills. Professional writing and public speaking to the scientific audience.

**CVM 5310. Small Animal Emergency and Critical Care Medicine. (4-6)** Variable hours, four to six hours practicum. Supervised clinical rotation in the small animal intensive care and emergency services. Emphasis on the evaluation and management of the critically ill or injured animal.

**CVM 5380. Small Animal Internal Medicine 2. (6-8)** Variable hours practicum. Advanced supervised rotation through the Small Animal Clinic. Students participate in the receiving, analysis, and management of patients referred for medical care.

**CVM 5392. Pharmacy. (4)** Two hours practicum. Supervised clinical rotation in the pharmacy of the Animal Health Center. Students participate in all activities of these units.

**CVM 5420. Advanced Rotation in Radiology. (2,4)** Two to four hours practicum. (Prerequisite: CVM 5204). (May be repeated for credit). Areas of study include advanced radiographic and ultrasound techniques and interpretation and use of radioisotopes in therapy.

**CVM 5430. Advanced Rotation in Anesthesiology. (1-6)** Variable hours practicum. (Prerequisite: CVM 5414). (May be repeated for credit). Advanced rotation in Anesthesiology. Areas of study include pre-anesthetic patient evaluation, and advanced techniques in anesthetic induction, anesthetic maintenance, patient monitoring and post-anesthetic care.

**CVM 5444. Clinical Small Animal Practice. (4)** Four hours practicum. (May be repeated for credit). This rotation provides students opportunities to develop problem solving, psychomotor and interpretive skills in an environment that closely simulates a high-quality private small animal practice.

**CVM 5454. Advanced Rotation in Small Animal Surgery. (4)** Four hours practicum. (Prerequisite: Consent of instructor). (May be repeated for credit). Students assume primary responsibility for the receiving, diagnosis, treatment and management of small animal surgery patients.

**CVM 5464. Advanced Rotation in Equine Medicine and Surgery. (4)** Four hours practicum. (Prerequisite: CVM 5266). (May be repeated for credit). Students assume primary responsibility for the resolving, diagnosis, treatment and management of equine patients.

**CVM 5474. Advanced Rotation in Food Animal Practice. (4)** Four hours practicum. (Prerequisite: CVM 5276). (May be repeated for credit). Students assume primary responsibility in problem analysis, case management and development of health maintenance programs for food animals.

**CVM 5484. Advanced Rotation in Small Animal Internal Medicine. (4)** Four hours practicum. (Prerequisite: CVM 5256). (May be repeated for credit). Students assume primary responsibility for patient diagnosis and care in small animal internal medicine.

**CVM 5510. Veterinary Medicine/Animal Industry Externship 1. (1-6)** Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation.

**CVM 5520. Veterinary Medicine/Animal Industry Externship 2. (1-6)** Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation.

**CVM 5530. Veterinary Medicine/Animal Industry Externship 3. (1-6)** Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation.

**CVM 5540. Veterinary Medicine/Animal Industry Externship 4. (1-6)** Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation.

**CVM 5550. Veterinary Medicine/Animal Industry Externship 5. (1-6)** Variable hours practicum. Rotation through private industry dealing with one of the major animal commodities. Rotation may include poultry, catfish, swine, dairy, beef or other commercial animal operation.

**CVM 5560. Advanced Clinical Rotation 1. (1-6)** Variable hours practicum. (May be repeated for credit). Supervised rotation through one of the defined units of the Animal Health Center. Students assume primary responsibility for patient diagnosis and care.

**CVM 5570. Advanced Clinical Rotation 2. (1-6)** Variable hours practicum. (May be repeated for credit). Supervised rotation through one of the defined units of the Animal Health Center. Students assume primary responsibility for patient diagnosis and care.

**CVM 5580. Advanced Clinical Rotation 3. (1-6)** Variable hours practicum. (May be repeated for credit). Supervised rotation through one of the defined units of the Animal Health Center. Students assume primary responsibility for patient diagnosis and care.

**CVM 5604. Professional Development III. (4)** Four hours lecture. Comprehensive review for National Board Examinations. Will be graded on a Pass/Fail basis.

**CVM 5612. Laboratory Animal Medicine. (2)** Two hours lecture. An intensive in-depth review of veterinary responsibilities in institutional laboratory animal medicine. The course will emphasize laboratory animal problems seen in research courses.

**CVM 5622. Veterinary Diagnostic Toxicology. (2)** (Prerequisite: Consent of instructor). Two hours lecture. Phase 2 elective emphasizes diagnosis and treatment of animal poisoning including environmental toxins.

**CVM 5632. Advanced Large Animal Techniques. (2)** (Prerequisite: Consent of instructor). Four hours laboratory. Provides students hands-on techniques experience required in a progressive large animal/equine referral practice or an internship position at a veterinary hospital.

**CVM 5644. Applied Gross Anatomy. (4)** (Prerequisite: Consent of instructor). Eight hours laboratory. Phase 2 elective emphasizes review and further study of anatomy with relation to clinical and diagnostic applications.

**CVM 5654. Applied Veterinary Parasitology. (4)** Four hours practicum. (Prerequisite: Consent of Instructor). Provides opportunities to use problem-solving skills in the diagnosis, treatment, and control of both newly emerging and commonly encountered parasitic diseases.

**CVM 5662. Clinical Neurology. (2)** (Prerequisite: Consent of instructor). Two hours lecture. Phase 2 elective emphasizes basic procedures and concepts required to diagnose and manage neurologic diseases.

**CVM 5672. Veterinary Dentistry. (2)** Two hour practicum. (Prerequisite: consent of instructor). Phase 2 elective emphasizing diagnostic and therapeutic approach to dentistry in small animals and equine species.

**CVM 5682. Veterinary Ophthalmology. (2)** (Prerequisite: Consent of instructor). Two hours lecture. Phase 2 elective emphasizing the diagnosis and treatment of ophthalmic diseases.

**CVM 5694. Veterinary Cytology. (4)** Two hours lecture. Two hours laboratory. An intensive study of veterinary cytology as it relates to clinical diagnosis and case management.

**CVM 5714. Advanced Small Animal Dermatology. (4)** Three hour lecture. One hour laboratory. Advanced study of small animal dermatology. Emphasis will be disease conditions with primary impact on the integumentary system of small animals.

**CVM 5722. Small Ruminant Production Medicine. (2)** (Prerequisite: CVM 5276). Two hours practicum. An elective focused on sheep and goat production. Experience in common surgery/treatment procedures provided. Small ruminant production medicine topics and current literature review discussed.

**CVM 5734. Beef Cattle Production Medicine. (4)** (Prerequisites: Must be either a 3rd or 4th year veterinary student in good standing and currently enrolled in an accredited college of veterinary medicine). Four hours lecture/laboratory. Lecture/laboratory class that will provide intensive instruction on beef cattle production medicine topics. Areas covered include cow/calf, stocker/backgrounding, and feedlot topics.

**CVM 5754. Advanced Small Animal Surgery. (4)** One hour lecture. Three hours laboratory. Exercises to provide additional understanding and "hands-on" experience for students interested in orthopedic surgery, neurosurgery, plastic and reconstructive surgery, and other selected soft tissue procedures.

**CVM 5764. Advanced Equine Reproduction. (4)** (Prerequisite: Consent of instructor). Four hours lecture. Phase 2 elective emphasizing review of basic equine reproduction and exposure to advanced diagnostic and therapeutic modalities.

**CVM 5772. Canine Theriogenology. (2)** Two hour practicum. (Prerequisite: Consent of instructor). Advanced study of canine reproduction. Review of basic diagnostics and procedures followed by an introduction to assisted reproductive technology (ART).

**CVM 5784. Clinical Behavioral Medicine. (4)** (Prerequisite: Consent of Instructor). Four hours lecture and discussion. Case oriented study of normal and abnormal behaviors and underlying influences in domestic animals, with focus on dogs, cats, and horses.

**CVM 5794. Clinical Cardiology. (4)** Four hours practicum. (Prerequisite: Consent of Instructor). A review of current literature in clinical cardiology. Includes cardiac auscultation, interpretation of radiographs, performance and interpretation of echocardiograms, and interpretation of electrocardiograms.

**CVM 5814. The Feline Patient. (4)** Four hours lecture. Lecture, group discussion, and focused independent study on a variety of feline-related topics, with emphasis on medical problems which are unique to the cat.

**CVM 5824. Diagnostic Ultrasound. (4)** Four hours practicum. (Prerequisite: Senior Standing or Consent of Instructor). Develop advanced interpretative skills in diagnostic ultrasound. Learn to perform a complete thoracic, abdominal, or musculoskeletal examination on the species of interest.

**CVM 5834. Anesthesia Care and Techniques. (4)** Four hours laboratory. Phase 2 elective emphasizing review of anesthesia cases and application of anesthesia techniques to the species of choice for each student.

**CVM 5844. Clinical Pharmacology. (4)** Four hours lecture. Use of pharmacologic agents in the treatment of disease syndromes. Emphasis

will be placed on therapeutic alternatives for the treatment of specific diseases or syndromes.

**CVM 5854. Aquarium Health Management. (4)** (Prerequisite: Consent of instructor). Concepts and techniques for the maintenance of common aquarium species. This course will provide students opportunities to develop selected skills relating to aquarium medicine.

**CVM 5862. Equine Lameness. (2)** Two hour practicum. Advanced study of equine lameness. Provides opportunities to develop and use problem-solving skills in the diagnosis, treatment, and management of lameness and related topics.

**CVM 5902. Job Search. (2)** Two hours lecture. A proactive approach to developing a strategy for securing veterinary employment. Practice philosophy, resume preparation, interview skills, evaluation of potential employment, choosing the right position.

**CVM 5912. Personal, Professional and Financial Success. (2)** Two hours lecture. Develop an initial financial plan for first employment and beyond. Setting and achieving goals, expense budgets, contracts and contract negotiation, financial obligations, and investment strategy.

**CVM 5922. Veterinary Practice Management. (4)** Two hours lecture. An in-depth study of management and marketing principles in veterinary practice.

**CVM 5990. Special Topics in Vet Med 1. (1-6)** Variable hours practicum. (May be repeated for credit). Special topics in veterinary medicine, offers the opportunity to explore selected veterinary topics in depth.

### Graduate-Level Courses

**CVM 4104/6104. Avian Diagnostic Microbiology. (4)** Two hours lecture. Four hours laboratory. A survey of methods used to identify and characterize avian pathogens, including isolation and cultivation of the microorganisms, and serological and biotechnological tools for diagnoses.

**CVM 4113/6113. Avian Histopathology. (3)** (Prerequisites: Consent of instructor). Two hours lecture. Three hours laboratory. An in-depth discussion of the histopathologic changes in avian tissues that are caused by infectious and non-infectious disease.

**CVM 4114/6114. Avian Pathology. (4)** (Prerequisite: Consent of Instructor). Four hours lecture. Gross pathological findings of avian diseases are discussed and illustrated. Extensive training in different diagnosis is offered. Useful for candidates preparing for ACPV Board Examination.

**CVM 4134/6134. Aquatic Animal Health Management. (4)** (Prerequisite: One course in microbiology and one course in physiology). Three hours lecture. Three hours laboratory. Fundamentals concepts of preventing, diagnosing and treating economically important diseases in wild and cultured stocks and invertebrates through didactic and laboratory instruction.

**CVM 4513/6513. Environmental Toxicology. (3)** (Prerequisites: 8 hours biological sciences and 8 hours chemistry). Three hours lecture. The disposition and toxicological effects of environmentally-relevant toxicants (such as agrochemicals, petroleum and industrial pollutants) within organisms, and aquatic and terrestrial ecosystems.

**CVM 7000. Directed Individual Study.** Hours and credits to be arranged.

**CVM 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**CVM 8011. Seminar. (1)** One hour lecture. A seminar which provides the student with a forum for presentation of current topics in veterinary medical research.

**CVM 8031. Current Topics in Molecular Mechanisms of Disease. (1)** 1.5 hours discussion. The molecular biology of pathogens, hosts and their interactions are covered by students presenting recently published papers. This course can be taken six times.

**CVM 8091. Current Topics in Production Animal Medicine. (1)** 1.5 hour discussion. (Prerequisite: Consent of Instructor). A weekly seminar to address issues of current interest in production animal medicine (i.e., cattle, swine, poultry, aquaculture.) May be repeated four times for credit.

**CVM 8105. Avian Medicine Externship. (5)** (Prerequisite: Consent of instructor). Extensive field experience with poultry companies is provided. Breeder, pullet, layer, and broiler management, ration formulation, poultry inspection, and hatchery practices are emphasized.

**CVM 8113. Advanced Diseases of Poultry. (3)** Three hours lecture. Advanced study of the major poultry diseases; the mechanisms of each disease, diagnosis, prevention and control.

**CVM 8133. Avian Necropsy. (3)** (Prerequisite: Consent of instructor). Three hour practicum. Identification of avian diseases will be learned through necropsy of birds submitted by the public. Confirmatory

diagnostic tests and recommendations for clients are discussed. This course can be taken for repeated credit.

**CVM 8134. Advanced Fish Diseases. (4)** Prerequisite: CVM 6134 (or permission). Three hours lecture. Three hours laboratory. Detailed investigations into the mechanisms involved in the development and management of infectious and non-infectious diseases in fish.

**CVM 8141. Seminar: Histopathology of Fish Diseases. (1)** One hours lecture. (Prerequisite: CVM 6134 or equivalent). A weekly seminar addressing pathophysiology of fish diseases based on histologic interpretation of case materials. Emphasis will be on farm-raised channel catfish.

**CVM 8143. Epidemiology/Biostatistics. (3)** Three hours lecture. Fundamental principles of descriptive and analytical epidemiology.

**CVM 8190. Aquatic Diagnostic Investigation. (1-9)** (Prerequisite: CVM 6134, equivalent, or consent of instructor). Variable hours practicum. (May be repeated for credit). A practical exercise in diagnosis and therapeutic recommendation for health management and maintenance in aquatic animal medicine.

**CVM 8301. Advanced Topics in Comparative Immunology. (1)** 1.5 hours discussion. Current controversies, discoveries, and experimental approaches in comparative immunology will be covered by students' presentations. This course can be taken 4 times for repeated credit.

**CVM 8303. Advanced Immunology. (3)** (Prerequisite: BIO 6413 or equivalent or consent from the instructor). Three hours lecture. Advanced theory and concepts of immunology, structure and function of immune mechanisms are discussed in detail.

**CVM 8315. Immunological Techniques. (5)** Two hours lecture. Six hours laboratory. An in-depth course to teach the student a variety of modern methods of immunology. (Same as BIO 8315).

**CVM 8403. Principles of Pharmacology and Pharmacokinetics. (3)** Three hours lecture. This course addresses basic principles of how the body reacts to the presence of a drug or toxin and the mathematical expression of drug residues.

**CVM 8614. Helminthology. (4)** (Prerequisite: BIO 1504 or equivalent). Three hours lecture. Three hours laboratory. This course will cover current concepts in morphology and identification, life cycle, and host-parasite relationships of helminthic parasites.

**CVM 8624. Protozoology. (4)** (Prerequisite: BIO 1504 or equivalent). Three hours lecture, two hours laboratory. This course will cover the morphology and identification, life cycles, epidemiology and control of protozoans in vertebrates.

**CVM 8701. Pathology Seminar. (1)** One hour lecture. A seminar to develop analytic skills in diagnostic anatomical pathology (gross and histopathology).

**CVM 8711. Histopath Descriptions. (1)** (Prerequisite: Consent of instructor). One hour lecture. A practical approach to the development of descriptive writing skills for the communication of histologic lesions encountered in veterinary medicine. (Prerequisite: Concurrent of previous enrollment in CVM 8111 or equivalent.)

**CVM 8723. Advanced General Pathology. (3)** (Prerequisites: Consent of instructor). Three hours lecture. An in-depth discussion of basic pathophysiological mechanisms. Emphasis will be placed on recent advances in understanding of cellular pathology.

**CVM 8735. Mechanisms of Disease. (5)** (Prerequisites: Acceptance to Dual Degree DVM/MS Program or Consent of Instructor). Five hour lecture. The course covers basic mechanisms of disease production in mammals. Topics include host response to microbial and toxic injury.

**CVM 8790. Laboratory Diagnostic Services. (1-9)** Variable hours practicum. (May be repeated for credit). Experimental training in laboratory investigation of animal health-related problems to include pathological, microbiological, parasitic, and toxicological problems.

**CVM 8803. Advanced Small Animal Clinical Neurology. (5)** Five hours practicum. (Prerequisite: Must already have registerable veterinary degree and consent of instructor). Advanced-level study of neurologic disease in small animals, with an emphasis on case management, oral and written presentation skills, and student teaching.

**CVM 8890. Economic and Performance Medicine. (1-9)** Variable hours practicum. (May be repeated for credit). (Prerequisite: Consent of instructor). Advanced training in the identification and management of health related problems in commercial food animal production units.

**CVM 8990. Special Topics in Veterinary Medicine. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**CVM 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## DIVISION of TECHNOLOGY MERIDIAN CAMPUS ONLY

**DTF 4000. Directed Individual Study.** Hours and credits to be arranged.

**DTF 4613. Implementation of Technology. (3)** (Prerequisite: Consent of instructor prior to internship). Three hours lecture. Theoretical and applied methods, techniques and analysis of field based technology research. Emphasis on the various research designs and preparation of project proposal.

**DTF 4923. Technology Career Seminar. (3)** (Prerequisite: DTF 4613). Three hours lecture. Critical evaluation of current issues in technology, examination of career opportunities and approved project completion status.

**DTF 4936. Technology Field Practicum I. (6)** (Corequisite: DTF 4926). The course provides students opportunities to apply contemporary practices by completing a minimum of 340 supervised hours in an approved industry.

**DTF 4946. Technology Field Practicum II. (6)** (Prerequisite: DTF 4936 or concurrent enrollment in DTF 4936). The course provides students opportunities to apply contemporary practices by completing a minimum of 340 supervised hours in an approved industry.

**DTF 4990. Special Topics in DTF. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

**DTM 4000. Directed Individual Study.** Hours and credits to be arranged.

**DTM 4213. Manufacturing Regulatory Agencies. (3)** Three hours lecture. An introduction to the effects that regulatory agencies, both public and private, have on contemporary manufacturing operations.

**DTM 4313. Transportation and Packaging. (3)** Three hours lecture. A study of internal and external product transportation for a manufacturing facility. Emphasis on the reduction of time and cost to include protective packaging.

**DTM 4413. Facilities Operations. (3)** Three hours lecture. An introduction to the many facets of manufacturing facility operations. Emphasis on key areas such as maintenance, employee services, and public utility optimization.

**DTM 4553. Production Standards & Measurement. (3)** Three hours lecture. A study to focus upon the application of theoretical and contemporary methods of manufacturing production standards and appropriate measurement techniques.

**DTM 4990. Special Topics in DTM. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

## Department of FINANCE and ECONOMICS

Office: 326 McCool Hall

Professors Campbell, Duett, Grimes, Kohers and Liano;  
Associate Professors Blair, Gilmer, Kelly, White and Rogers;  
Assistant Professors de Haas, Hardin and Millea

**EC 1033. Economics of Social Issues. (3)** Three hours lecture. Basic economic principles introduced and developed through the study of important social issues such as unemployment, health care, poverty, crime, pollution, inflation, and government debt. (Not open to students with prior credit in Principles of Economics).

**EC 2113. Principles of Macroeconomics. (3)** (Prerequisite: Sophomore standing.) Three hours lecture. Introduction to macroeconomics: free enterprise principles, policies, institutions; national income, employment, output, inflation, money, credit, business cycles, and government finances.

**EC 2123. Principles of Microeconomics. (3)** (Prerequisite: EC 2113 and Sophomore standing.) Three hours lecture. Introduction to microeconomics: emphasizes American industrial structure, demand and supply, pricing and output, income distribution, factor pricing, international trade.

**EC 2990. Special Topics in Economics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

**EC 3113. Intermediate Macroeconomics. (3)** (Prerequisites: EC 2113 and EC 2123). Measurement and determination of national income, employment, and output; economic significance of consumption, saving, investment, foreign trade, money and prices, fiscal and monetary policy.

**EC 3123. Intermediate Microeconomics. (3)** (Prerequisites: EC 2113 and EC 2123). Theory and application of microeconomics; demand, supply, optimal consumer choice, production, cost, profit-maximizing pricing and output decisions, employment of resources, externalities, efficiency and welfare.

**EC 3213. Labor Economics. (3)** (Prerequisites: EC 2113 and EC 2123.) Three hours lecture. Labor market behavior of households and firms. Emphasizes wage determination, optimal employment decisions, income distribution, unionization, human capital, and discrimination.

**EC 3223. Introduction to Industrial Organization. (3)** (Prerequisites: EC 2113 and EC 2123). Three hours lecture. Structure and performance of large corporations, economic effects of antitrust, governmental policy toward competitive practices, regulation of monopoly and natural resources.

**EC 3333. Managerial Economics. (3)** (Prerequisites: EC 2113 and EC 2123). Three hours lecture. The application and use of economic models in analyzing and solving selected problems of the firm such as product pricing, product mix, demand forecasting, market analysis.

**EC 3423. Government and Business. (3)** (Prerequisites: EC 2113 and EC 2123). Three hours lecture. Examination of the evolution and composition of the economic relationship between government and business in the U.S.; including the regulation of public utilities and anti-trust.

**EC 3513. Economic Systems of the World. (3)** (Prerequisites: EC 2113 and EC 2123 or consent of instructor). Three hours lecture. Comparative analysis of economic systems ranging from capitalism to market socialism. Includes emerging market systems of Central and Eastern Europe, Asia, and Latin America.

**EC 4000. Directed Individual Study.** Hours and credits to be arranged.

**EC 4183/6183. U.S. Economic History. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of economic change in the United States and its impact on political and social development. (Same as HI 4183/6183).

**EC 4213/6213. Personnel Economics. (3)** (Prerequisites: EC 2113 and EC 2123). Three hours lecture. Economic analysis of human resource issues within business organizations. Theoretical examination of hiring standards, productivity, compensation schemes, training, teamwork, incentives, benefits, worker empowerment, and evaluation

**EC 4223/6223. Labor Law and Employment Policy. (3)** (Prerequisites: Three hours credit of economics or consent of instructor). Three hours lecture. Examination of the legal and regulatory environment of the employment relationship in today's American economy; including, unionization, equal employment opportunity, occupational health and safety.

**EC 4303/6303. Theory of Economic Development. (3)** (Prerequisites: EC 2113 and EC 2123). Analysis of problems involving developing economies as they relate to the world economy: population, trade, agriculture, industry, and technology. Policies for promoting economic growth.

**EC 4313/6313. Introduction to Regional Economics. (3)** (Prerequisites: EC 2113, EC 2123, and MA 1463 or consent of instructor). Three hours lecture. Regional economic differences; location theory (industrial, agricultural, and residential); Land use patterns; Regional structure, growth, and methods of analysis; National assistance for regional economic development.

**EC 4323/6323. International Economic Relations. (3)** (Prerequisites: EC 2113 and EC 2123). Three hours lecture. The nature of international trade. International economic theory. Current problems affecting international economic relations.

**EC 4333/6333. Applied Regional Economics. (3)** (Prerequisite: EC 4313/6313). Economic analysis and effects of regional resources and development potentials, economic factors affecting industrial location decisions, planning and organization of industrial development.

**EC 4423/6423. Introduction to Public Finance. (3)** (Prerequisites: EC 2113 and EC 2123). Three hours lecture. Economics of the public sector. Analysis of government on distribution, allocation, and stabilization functions. Emphasis on public goods, externalities, social insurance, public choice, and taxation.



**EC 4433/6433. Problems in State and Local Finance. (3)** (Prerequisites: EC 2113 and EC 2123). Three hours lecture. Fiscal importance and economic effects of state and local budgets; trends in taxation, expenditures, fiscal administration, and budgeting fiscal economic development.

**EC 4523/6523. History of Economic Thought. (3)** (Prerequisites: EC 2113 or consent of instructor). Three hours lecture. Survey of economic ideas from Ancient Greece to present, emphasizing the changing foci and methodologies of economics relative to economic problems perceived at the time.

**EC 4990/6990. Special Topics in Economics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EC 7000. Directed Individual Study.** Hours and credits to be arranged.

**EC 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**EC 8043. Survey of Economics. (3)** (Prerequisite: Graduate standing). Three hours lecture. Introduction to macro and microeconomics, national income accounts, monetary system, macroeconomic policy, international trade, supply and demand, distribution of income, markets, pricing, and output.

**EC 8103. Economics for Managers. (3)** (Prerequisites: EC 2113, EC 2123). Three hours lecture. Primarily for masters-level candidates. Exposition of the fundamental theoretical and analytical tools of economics used by business managers engaged in decision making.

**EC 8113. Labor Theory and Analysis. (3)** (Prerequisites: Graduate Standing). Three hours lecture. Theoretical and empirical examination of labor market processes and policy; Wage determination, resource allocation, labor mobility, human capital investment, discrimination and income distribution.

**EC 8133. Econometrics I. (3)** (Prerequisites: AEC 8413 or consent of instructor). Econometric theory and methods. Topics include the classical linear regression model, maximum likelihood estimation, generalized least squares, and estimation with panel data.

**EC 8143. Econometrics II. (3)** (Prerequisite: EC 8133). A continuation of EC 8133. Topics include advanced theories of simultaneous equations estimation methods, time series econometrics, and estimation with qualitative and limited dependent variables.

**EC 8163. Microeconomics. (3)** (Prerequisite: EC 3123 or EC 8103 or equivalent). Three hours lecture. Survey of demand analysis, production, cost, and supply relationships, analysis of pricing under competitive

and noncompetitive conditions, analysis of income distribution with emphasis on input pricing.

**EC 8173. Macroeconomics. (3)** (Prerequisites: EC 3113, EC 3123, and one semester of calculus, or consent of instructor). Three hours lecture. Synthesis of short and long run analysis of the macroeconomy with special emphasis on the role of fiscal and monetary policy.

**EC 8183. Industrial Organization. (3)** (Prerequisites: EC 8103 or equivalent). Examination of theory and empirical studies concerned with industrial structure and performance with emphasis on the structure performance paradigm, anti-trust, and regulatory issues.

**EC 8263. Microeconomics II. (3)** (Prerequisite: EC 8163). Three hours lecture. An exposition of general equilibrium theory, the theory of welfare economics and the economics of information.

**EC 8273. Macroeconomics II. (3)** (Prerequisites: EC 8173 or equivalent). Three hours lecture. Examination of the modern macroeconomic synthesis. Studies in dynamic economic growth, rational expectations, monetarism, disequilibrium analysis, and open market economies.

**EC 8323. Economic Analysis of Developing Nations. (3)** (Prerequisites: 9 hours in economics, including EC 6303 or consent of instructor). Three hours lecture. In-depth analysis of economic issues of developing nations and emerging markets; emphasis on public policies to promote economic growth and transition.

**EC 8423. Public Finance. (3)** (Prerequisites: EC 2113, EC 2123 and graduate standing). Three hours lecture. Economics of public sector in capitalist system. Emphasizes government budget influences on distribution, resource allocation, stability, growth; stresses taxation, expenditure, budgeting, public choice and debt management.

**EC 8522. Seminar in the History of Economic Thought. (3)** (Prerequisite: Graduate standing or consent of the instructor). The evolution of economic ideas from Ancient Greece to present. Emphasis is placed on the role of heterodoxy and the rise of new paradigms.

**EC 8643. Applied Economic Skills: Advanced Estimation and Diagnostics of Econometric Models. (3)** (Prerequisites: EC 8113 and EC 8143 or consent of the instructor). Advanced econometric tools, diagnostics, and estimation techniques with an emphasis on applied economic model building. Application of econometric theory to real-world problems and issues.

**EC 8990. Special Topics in Economics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EC 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of ELECTRICAL and COMPUTER ENGINEERING

Office: 216 Simrall Electrical Engineering Building

Professors Bennett, Donohoe, Grzybowski, Hagler, Harden (Interim Head), King, Molen, Moorhead, Picone, Trotter, Winton, and Younan

Associate Professors Fowler, Mazzola, Reese, and Schulz;

Assistant Professors J. Bruce, L. Bruce, Casady, Chu, Follett, Hu, Koshka, and Lazarou

**ECE 1002. Introduction to Electrical & Computer Engineering. (2)** (Prerequisite: Credit or registration in MA 1713). One hour lecture. Three hours lecture. Three hours laboratory. What is means to be an engineer, engineering ethics, engineering modeling, the design process, areas of ECE, communication skills, ECE computer account, MATLAB, the internet.

**ECE 2990. Special Topics in Electrical or Computer Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ECE 3000. Research.** (Prerequisite: Senior standing in Electrical or Computer Engineering). Hours and credits to be arranged. Independent physical, analytical, or statistical investigations.

**ECE 3144. Circuit Analysis I. (4)** (Prerequisites: Credit or registration in ECE 1002, MA 3113, and PH 2223). Three hours lecture. Three hours laboratory. Definitions and fundamental laws of electrical engineering, DC circuit analysis, network theorems, circuit elements, transient analysis, sinusoidal steady-state analysis for single and poly-phase circuits.

**ECE 3153. Circuit Analysis II. (3)** (Prerequisites: Grade of C or better in ECE 3144. Credit or registration in MA 3253). Three hours lecture. Transient response of circuits with energy storage devices; magnetically coupled circuits; resonance in parallel and series RLC circuits; two-port circuits; Laplace transforms, system analysis.

**ECE 3163. Signals and Systems. (3)** (Prerequisite: ECE 3153). Three hours lecture. Modeling of analog and discrete-time signals and systems, time domain analysis. Fourier series, continuous and discrete-time Fourier transforms and applications, sampling, z-transform, state variables.

**ECE 3183. Electrical Engineering Systems. (3)** (For non-Electrical Engineering majors). (Prerequisite: MA 2743). Three hours lecture. Definitions and laws relating to electrical quantities; circuit element descriptions; development of techniques in network analysis; semiconductor devices; integration of devices into digital networks.

**ECE 3243. Electronic Circuits I. (3)** (Prerequisites: ECE 3714, grade of C or better in ECE 3144, and credit or registration in ECE 3153). Three hours lecture. Introduction to circuit design using semiconductor devices; diode circuits, operating modes and characteristics of transistor amplifiers, transistor-level logic design for IC technologies.

**ECE 3254. Electronic Circuits II. (4)** (Prerequisite: ECE 3243). Three hours lecture. Three hours laboratory. Linear transistor circuit design to include: differential pairs, opamp circuits, frequency profiling, feedback, stability, and power electronics. Accompanying lab is of structured self-paced form.

**ECE 3281. Electronics Laboratory. (1)** (For non-Electrical Engineering majors). (Prerequisite: Credit or registration in ECE 3283). Laboratory procedures in electronic circuits and measurements.

**ECE 3283. Electronics. (3)** (For non-Electrical Engineering majors). (Prerequisites: ECE 3144 or ECE 3183). Three hours lecture. Fundamentals of active devices, linear amplifiers, digital logic, digital devices, and microprocessors.

**ECE 3313. Electromagnetics I. (3)** (Prerequisite: MA 3253, PH 2223). Three hours lecture. Application of vector analysis to the theory of electromagnetic fields. Maxwell's equations are introduced individually by studying static fields and an introduction to time-varying fields.

**ECE 3324. Electromagnetics II. (4)** (Prerequisite: ECE 3313). Three hours lecture. Three hours laboratory. Vector potential, retarded potential, Poynting's vector, Maxwell's equations are used to study prop-

agation in dielectrics and conductors, radiation, transmission lines, guides waves.

**ECE 3414. Fundamentals of Energy Systems. (4)** (Prerequisite: ECE 3313 and a grade of C or better in ECE 3144). Three hours lecture. Three hours laboratory. Synchronous generators; power transmission lines and cables; power transformers; induction and direct current motors; power electronic and programmable controllers; National Electric Code and electrical safety.

**ECE 3714. Digital Devices and Logic Design. (4)** (Prerequisite: Credit or registration in CS 1213, CS 1233, CS 1253, or CS 1314). Three hours lecture. Three hours laboratory. Binary codes, Boolean, algebra, combinational logic design, flip-flops, counters, synchronous sequential logic, programmable logic devices, MSI logic devices, adder circuits.

**ECE 3724. Microprocessors I. (4)** (Prerequisites: CS 1233 or CS 1314; ECE 3714). Three hours lecture. Three hours laboratory. Architecture of microprocessor-based systems. Study of microprocessor operation, assembly language, arithmetic operations, and interfacing. (Same as CS 3124).

**ECE 3732. Software Tools for Electrical Engineers. (2)** (Prerequisites: CS 1233 or equivalent C/C++ programming course, ECE 3714). One hour lecture. Three hours laboratory. A survey of topics utilizing UNIX-based platforms. Topics include C++, Perl, and various UNIX tools.

**ECE 4000. Directed Individual Study.** Hours and credits to be arranged.

**ECE 4223/6223. Error Correcting Digital Codes. (3)** (Prerequisite: Senior or Graduate standing). Three hours lecture. A survey, in depth, of current error correcting coding techniques for providing digital data transmission with protection from random and burst noise sources. Many practical and currently used techniques are discussed in detail and some hands on experience is provided.

**ECE 4243/6243. Introduction to Physical Electronics. (3)** (Prerequisite: ECE 3243). Three hours lecture. Introduction to quantum mechanics and solid state physics. Physical principles of pn junctions, bipolar transistors, field effect transistors. Applications include electro-optics, integrated circuits, gaseous electronics.

**ECE 4263/6263. Principles of VLSI Design. (3)** (Prerequisites: ECE 3724/CS 3124, ECE 4243). Two hours lecture. Three hours laboratory. Classic and dynamic CMOS circuit design using state-of-the-art CAD tools, with emphasis on digital system cells and architecture.

**ECE 4273/6273. Microelectronics Device Design. (3)** (Prerequisite: ECE 3243). Three hours lecture. Theory of semiconductors in equilibrium and non-equilibrium, advanced theory of p-n junctions, bipolar junction transistor and advanced theory and operation of field dependent devices.

**ECE 4283/6283. Microelectronics Process Design. (3)** (Prerequisite: ECE 3243). Three hours lecture. Introduction to device fabrication technologies, semiconductor parameter measurement techniques, and the principles of design relative to the LSI technologies.

**ECE 4333/6333. Microwave Theory. (3)** (Prerequisite: ECE 3324). Three hours lecture. Review of Maxwell's equations; wave propagation; waveguides; impedance matching antennas and arrays; lasers.

**ECE 4343/6343. Electro-Optics. (3)** (Prerequisite: ECE 3243 or consent of instructor). Three hours lecture. Linear system theory of optical processes; Electrooptic systems; electro-optical information processing.

**ECE 4413/6413. Digital Signal Processing. (3)** (Prerequisite: ECE 3163). Three hours lecture. Discrete-time signals, Z-Transform, Discrete Fourier Transform, digital filter design including IIR, FIR and FFT synthesis.

**ECE 4423/6423. Introduction to Remote Sensing Technologies. (3)** (Prerequisite: Senior or graduate standing, or consent of instructor). Three hours lecture. Electromagnetic interactions, passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR, Lidar, digital image processing, natural resource applications. (Same as PSS 4483/6483 and ABE 4483/6483).

**ECE 4473/6473. Introduction to Computer Arithmetic. (3)** (Prerequisites: ECE 3724/CS 3124 and credit or registration in ECE 4713/6713/ CS 4113/6113). Three hours lecture. Fixed point number systems; algorithms and associated logic level implementations for fixed point addition, subtraction, multiplication, and division; floating-point formats and operation.

**ECE 4512. EE Design I. (2)** (Prerequisite: Credit or registration in an EE Technical Elective). One hour lecture. Three hours laboratory. Electronic module implementation, emphasizing rapid prototyping. Lectures on design philosophy, creativity, fabrication. Students must select mentor, propose their ECE 4522 project, document, and present orally.

**ECE 4521. CPE Design. (1)** (Prerequisite: Credit or registration in a CPE Technical Elective). Three hours laboratory. Legal aspects and standards relating to design, professional ethics and other design skills.

Prototyping, documentation, and oral presentation of a team-based design project.

**ECE 4522. EE Design II. (2)** (Prerequisite: ECE 4512). One hour lecture. Three hours laboratory. Prototyping, documentation, and oral presentation of an engineering design project. Lectures on legal aspects and industry standards relating to design, professional ethics, career design skills.

**ECE 4532. CPE Design I. (2)** (Prerequisite: CS 2324, ECE 4743, and consent of instructor). One hour lecture. Three hours laboratory. Lectures on teaming, project management, engineering standards, economics, and ethical and professional issues. Student must select faculty mentor, perform project design, and present orally.

**ECE 4542. CPE Design II. (2)** (Prerequisite: ECE 4532). One hour lecture. Three hours laboratory. Development of design, teaming, presentation, and entrepreneurial skills. Teams must complete their project designs, and present written and oral results.

**ECE 4613/6613. Power Transmission Systems. (3)** (Prerequisite: Credit or registration in ECE 3414). Three hours lecture. Transmission of power from generator to distribution system; transmission line design; load flow; symmetrical components; balanced/unbalanced faults; stability.

**ECE 4621. Power Systems Laboratory II. (1)** Laboratory calculations and experiments in relaying, stability, and system protection.

**ECE 4633/6633. Power Distribution Systems. (3)** (Prerequisite: Credit or registration in ECE 3414). Three hours lecture. Distribution of power from transmission system to users; primary and secondary feeders; voltage regulation; distribution transformers; protective device coordination; system design; load management.

**ECE 4643/6643. Power Systems Relaying and Control. (3)** (Prerequisite: ECE 4613). Three hours lecture. Protection objectives and fundamentals; inputs; protection of generators, transformers, busses and lines; stability and control.

**ECE 4663/6663. Insulation Coordination in Electric Power Systems. (3)** (Prerequisite: Credit or registration in ECE 4613). Three hours lecture. Lightning phenomena; switching surges and temporary system overvoltages; laboratory generation and application of high voltages and currents; basic insulation levels; surge arresters; system insulation design.

**ECE 4711. Microprocessor II Laboratory. (1)** (Prerequisites: ECE 3721 and credit or registration in ECE 4723). Advanced experiments involving interface logic and programmable I/O devices for microprocessor-based systems. Experiments require design, development, and checkout of hardware and software.

**ECE 4713/6713. Computer Architecture. (3)** (Prerequisites: ECE 3724/CS 3124). Three hours lecture. Detailed design and implementation of a stored-program digital computer system. Designs for the CPU, I/O subsystems, and memory organizations. ALU design and computer arithmetic. (Same as CS 4113/6113).

**ECE 4723/6723. Microprocessors II. (3)** (Prerequisites: ECE 3724/CS 3124 and ECE 3254). Three hours lecture. Advanced topics in microprocessor system design with emphasis on standard microcomputer components. Program-controlled I/O, interrupts, DMA, digital peripheral devices, A/D and D/A conversion.

**ECE 4733/6733. Advanced Microprocessors. (3)** (Prerequisite: credit or registration in ECE 3724/CS 3124 and ECE 3254). Three hours lecture. The study of architecture, software, and interface techniques utilized by advanced microcomputing systems. Emphasis multiprogramming, multiprocessing and memory management.

**ECE 4743/6743. Digital System Design. (3)** (Prerequisites: ECE 3724. Credit or registration in ECE 3243). Two hours lecture. Three hours laboratory. Hierarchical digital design using available design software. Computer aided design workstations will be used to give students access to state-of-the-art design techniques.

**ECE 4811. Communications and Microwave Laboratory. (1)** (Prerequisite: ECE 3324 and credit or registration in ECE 4813). Laboratory measurements and experiments in communications theory and ultra-high frequency.

**ECE 4813/6813. Communications Theory. (3)** (Prerequisite: ECE 3163). Three hours lecture. The frequency and time domain; modulation; random signal theory; network analysis using nondeterministic signals; basic information theory; noise.

**ECE 4913/6913. Feedback Control Systems I. (3)** (Prerequisite: ECE 3163). Three hours lecture. Laplace transforms; transient and frequency response of feedback systems; transfer functions; Nyquist criterion, root locus; compensation of feedback systems; logarithmic analysis and design.

**ECE 4921. Feedback Control Systems Laboratory II. (1)** (Prerequisite: Credit or registration in ECE 4923). Laboratory procedures in analysis of control systems; compensating networks; analog computer simulator.

**ECE 4923/6923. Feedback Control Systems II. (3)** (Prerequisite: ECE 3163). Three hours lecture. Finite difference and recurrence equations. Z-transform theory. Analysis of sample-data control systems. Design of digital control systems.

**ECE 4933/6933. State Space Design and Instrumentation. (3)** (Prerequisite: ECE 3163). Three hours lecture. State space representation. Dynamic systems. Controllability and observability. Full-state feedback observers. Instrumentation: sensors and interfacing.

**ECE 4990/6990. Special Topics in Electrical or Computer Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ECE 7000. Directed Individual Study.** Hours and credits to be arranged.

**ECE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**ECE 8013. Switching Theory I. (3)** (Prerequisites: ECE 3254, ECE 4713/6713/ CS 4113/6113 or consent of instructor). Three hours lecture. Theory of combinational and sequential (synchronous and fundamental-mode) circuits with emphasis on performance, robustness, cost, and testability objectives.

**ECE 8023. Switching Theory II. (3)** (Prerequisite: ECE 8013). Three hours lecture. The study of self-timed circuit design techniques; emphasis on elimination of timing considerations from digital circuit design to improve reliability, desirability and speed.

**ECE 8053. Introduction to Computer Arithmetic. (3)** (Prerequisite: ECE 4263/6263). Three hours lecture. Fixed point number systems; algorithms and associated logic level implementations for fixed point addition, subtraction, multiplication, and division; floating-point formats and operation.

**ECE 8063. Parallel Computing Architectures I. (3)** (Prerequisite: ECE 4713/6713/ CS 4113/6113). Three hours lecture. Study of hardware structures relevant to concurrent computing; evaluation and design methods associated with memory, pipelining, and multiple processors.

**ECE 8073. Parallel Computing Architectures II. (3)** (Prerequisite: ECE 8063 and/or consent of instructor). Three hours lecture. Study of communication structures and routing methods that are central to concurrent computing, multiple computers, and data flow machines.

**ECE 8113. Linear Systems Analysis I. (3)** Three hours lecture. Laplace transformation; systems concepts; Fourier transformation; physical realizability; distributed-parameter systems; time-varying parameter systems; sample data systems.

**ECE 8223. Analog Integrated Circuit Design. (3)** (Prerequisite: ECE 3254). Analysis and design of analog integrated circuits. Selected topics on operational amplifiers, A-to-D converters and communication circuits. Bi-polar and MOSFETS.

**ECE 8253. Solid State Electronics III. (3)** (Prerequisite: ECE 4263/6263). Three hours lecture. Electrical theory of semi-conductors based on wave mechanical and thermodynamical foundations.

**ECE 8273. VLSI Systems I. (3)** (Prerequisite: ECE 4263/6263). Three hours lecture. VLSI design extended into controller concepts, self-timed logic; system design with CAD tools, parameterized block generators, silicon compilers; projects submitted to commercial silicon foundries.

**ECE 8313. Electromagnetic Theory. (3)** (Prerequisite: ECE 3254). Three hours lecture. Static boundary value problems, conformal transformation; Schwarz-Christoffel transformation; harmonics; applications of Maxwell's equations to plane waves in dielectrics and conductors; antennas; and radiation. (Same as PH 8313)

**ECE 8373. Adaptive Signal Processing. (3)** (Prerequisites: ECE 4773/6773 or consent of Instructor). Three hours lecture. Linear combiners, theory of adaptation with stationary signals, algorithms and structures. Applications included.

**ECE 8401. Current Topics in Remote Sensing. (1)** (Prerequisite: Credit or registration in ECE 4423/6423 or PSS 4483/6483 or ABE 4483/6483). One hour lecture. Review of current literature dealing with the technical issues of remote sensing technologies.

**ECE 8413. Digital Spectral Analysis. (3)** (Prerequisite: ECE 3163 or consent of instructor). Three hours lecture. Spectral estimation problem, classical methods, parametric modeling, statistical estimation, sinusoidal estimation, and high order spectra. Time series applications.

**ECE 8423. Adaptive Signal Processing. (3)** (Prerequisite: ECE 3163 or consent of Instructor). Three hours lecture. Adaptive filtering, theoretical foundation, algorithms, structures, and implementations. Applications are included.

**ECE 8433. Statical Signal Processing. (3)** (Prerequisite: MA 4533/6533 or consent of Instructor). Three hours lecture. Detection the-

ory and design, statistical decisions, Bayes, and Neymen-Pearson detection, asymptotic performance, signal processing applications.

**ECE 8443. Pattern Recognition. (3)** (Prerequisite: MA 4533/6533 or consent of Instructor). Three hours lecture. Classification, description, and structure of pattern recognition, patterns and feature extractions, engineering approaches including statistical and syntactic, and signal processing applications.

**ECE 8453. Introduction to Wavelets. (3)** (Prerequisite: ECE 3163 or consent of Instructor). Three hours lecture. Wavelet-expansion systems, discrete wavelet transform, multiresolution analysis, time-frequency analysis, filter banks and the discrete wavelet design, wavelet-based applications.

**ECE 8463. Fundamentals of Speech Recognition. (3)** (Prerequisite: ECE 4413/6413 or consent of Instructor). Three hours lecture. Acoustic Phonetics; Linear Prediction; Feature Extraction; Dynamic Programming and Time-Warping; Hidden Markov Models; Statistical Language Modeling; Decision Trees; Introduction to Natural Language Processing; Implementation Issues.

**ECE 8473. Digital Image Processing. (3)** (Prerequisites: CS 1233, CS 1314 or equivalent, ECE 4773/6773 or equivalent, or consent of instructor). Three hours lecture. A study of digital image processing principles, concepts, and algorithms; mathematical models; image perception; image sampling and quantization, transforms, image coding.

**ECE 8483. Image and Video Coding. (3)** (Prerequisite: ECE 8473 or consent of Instructor). Three hours lecture. Intraframe predictive coding, intraframe transform coding, still-image coding standards, motion compensation, video-coding standards, image transmission and error control.

**ECE 8523. Wafer Scale Integration. (3)** (Prerequisites: Graduate standing and consent of Instructor). Three hours lecture. The study of wafer scale integration, a technology that enables the fabrication of monolithic chips as large as a full silicon slice; yield analysis and optimization.

**ECE 8613. Advanced Power Systems Analysis. (3)** (Prerequisite: ECE 4613/6613 or equivalent). Three hours lecture. Application of symmetrical components to the analysis of power systems; impedances of transmission lines; unsymmetrical faults; representation of transformers and rotating machines; stability and control.

**ECE 8623. Stability and Control of Power Systems. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Transient and dynamic stability; effect of excitation on stability; control of system in steady state (AGC); economic dispatch.

**ECE 8643. Power System Planning. (3)** (Prerequisite: Consent of the instructor). Three hours lecture. Load forecasting, generation system reliability and cost analysis, transmission system reliability analysis.

**ECE 8653. Advanced Energy Conversion. (3)** (Prerequisite: ECE 3414). Three hours lecture. Development of Analytical Expressions for 3 synchronous and induction machines; d-q axis transformation, transformer analysis. Description and analysis of ac-dc and dc-ac power conversion devices.

**ECE 8663. High Voltage Engineering. (3)** (Prerequisite: ECE 3313). Three hours lecture. Emission, mobility, breakdown, corona, arcs impulse generation, measurement, analysis, dielectric materials, design laboratory demonstration.

**ECE 8673. Computer Methods in Power Systems Analysis. (3)** (Prerequisite: ECE 4613/6613 or equivalent). Three hours lecture. Algorithms for formation and techniques for manipulation of network matrices. Problem formulation and numerical solution techniques for load flow and stability studies.

**ECE 8693. Power Systems Seminar. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Current research and development topics in power system planning and operation.

**ECE 8913. Advanced Feedback Control Systems. (3)** (Prerequisite: ECE 4913/6913). Three hours lecture. Review of linear feedback systems; root locus; signal flow diagrams; stability criterion; distributed parameter systems; selfadaptive control systems.

**ECE 8923. Non-Linear Control Systems. (3)** (Prerequisite: ECE 4913/6913 or equivalent). Three hours lecture. A study of techniques available to analyze non-linear system and a study of associated synthesis procedures.

**ECE 8933. Random Processes in Automatic Control. (3)** (Prerequisite: ECE 4913/6913 or equivalent). Three hours lecture. Principles and application of statistical design; random processes in automatic control; time invariant systems.

**ECE 8943. Theory of Optimal Control. (3)** Three hours lecture. State variable description of systems; maximum principle of Pontryagin, optimization of linear systems with quadratic performance measures; time optimal and fuel optimal systems.

**ECE 8953. Sampled Data Control Systems. (3)** (Prerequisite: ECE 4913/6913). Three hours lecture. Basic theory of sampling; Z-transformation theory and analysis; modified Z-transform; design principles.

**ECE 8963. Digital Control Systems. (3)** (Prerequisites: ECE 4913/6913 and ECE 4923/6923 or consent of instructor). Three hours lecture. Z-Transform theory and analysis; modified x-transform; design principles; digital state observers; introduction to optimal control, introduction to computer-aided digital control system design and analysis.

**ECE 8990. Special Topics in Electrical or Computer Engineering. (1-9)** Credit and title to be arranged. This course is to be used

on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ECE 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## EDUCATIONAL LEADERSHIP

Office: 100 Industrial Education Building

Major Advisor: Anthony A. Olinzock

(For departmental information, see INSTRUCTIONAL SYSTEMS, LEADERSHIP, and WORKFORCE DEVELOPMENT.)

**EDA 8163. Public School Finance. (3)** Three hours lecture. Legal and other factors governing financial policies and practices in public schools; sources of revenue; budgeting; disbursement of funds; school plant; records; insurance.

**EDA 8173. School Law. (3)** Three hours lecture. Analysis of state laws and court decisions with particular emphasis on Mississippi.

**EDA 8190. Workshop in Educational Administration and Supervision. (1-3)** This course is for practicing school administrators who need courses of varying length, format, and focus in areas not covered by the regular curriculum.

**EDA 8213. Internship in Supervision and Administration. (3)** Opportunity under direct supervision of regular university staff for practical experience in the major area of interest. May be repeated for credit.

**EDA 8223. Seminar in Administration. (3)** (Prerequisite: Administrative experience or graduate standing). Three hours lecture. Specialized study of selected problems in school administration; research.

**EDA 8273. Educational Administration and Supervision. (3)** (Prerequisite: Advanced graduate standing). Three hours lecture. Fundamentals of leading and managing at the central office executive level, e.g., assistant superintendent. Emphasis on policy development, curriculum and instruction, planning, operations, and public relations.

**EDA 8283. Educational Leadership. (3)** (Prerequisite: EDA 8113). Three hours lecture. Nature of educational leadership. The roles of leadership in staff and program development, diffusion of innovations, and the uses of power in making educational decisions.

**EDA 8293. Professional Development of Educational Personnel. (3)** (Prerequisite: EDL 8143). Three hours lecture. Collaborative approaches to processes of individual and group professional development

for instructional and non-instructional personnel; ensuring, supporting, enhancing best practices for teaching, learning, school improvement.

**EDA 8323. Educational Facilities Design. (3)** Three hours lecture. Studies design issues in learning environments/facilities, examines contemporary design models, their impact on learning and uses this information in the design process.

**EDA 8343. School Personnel Administration. (3)** Three hours lecture. Various dimensions of school personnel administration; principles, recruitment, selection, and practices essential to a functional integration of the individual into the school system.

**EDA 8353. Applications of Theory to Educational Administration. (3)** Three hours lecture. The nature of theory; types of educational administrative theories; uses of organizational and administrative theory in administrative problem solving; applications of general systems theories in education.

**EDA 8383. Ethical Decision Making in Educational Administration. (3)** (Prerequisites: EDA 8283 or HED 8123). Three hours lecture. Case studies are used to analyze educational decisions. Multiple decision models and ethical concepts are applied to problems and moral dilemmas.

**EDA 8990. Special Topics in Educational Leadership. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Department of CURRICULUM and INSTRUCTION

Professors Grace, Hare, Howard (head), McGrath, Person, Verhoek-Miller;

Associate Professors: Coats, Hamil, Minchew, Swafford, and Xu;

Assistant Professors: Brenner, Brocato, Burroughs, E. Groce, R. Groce, Hobson-Horton, Jayroe, Kurz, and Prince;

Visiting Barksdale Professors: Dillard, Pope; Lecturer Franz

### ELEMENTARY EDUCATION

Office: 314 Allen Hall

**EDE 2511. Introduction to Elementary Education. (1)** One hour lecture. Field based. Introduction to elementary education with emphasis on observation of elementary age children and participation in classroom activities. Provisions will be made for discussion of observations and participation.

**EDE 2990. Special Topics in Elementary Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years).

**EDE 3123. Practicum: Early Childhood Education. (3)** (Prerequisite: Admission to teacher education). Two hours lecture. Two hours laboratory. Overview of purposes, needs and methodology for early education; study of good schools for young children with emphasis on kindergarten/primary education through practicum experiences.

**EDE 3233. Teaching Children's Literature. (3)** Three hours lecture. Children's reading interests; nursery rhymes; verse; tales and legends; current literature for children in elementary schools.

**EDE 3343. Teaching Adolescent Literature. (3)** Three hours lecture. A study of the types of literature read by older children and adolescents with emphasis upon the criteria for the choice of good books and knowledge of available books and teaching materials.

**EDE 3443. Creative Arts in the Elementary School. (3)** (Prerequisite: Admission to teacher education). Two hours lecture. Two hours laboratory. Study and creative work in simple media suitable for children in the elementary school.

**EDE 4000. Directed Individual Study.** Hours and credits to be arranged.

**EDE 4113. Science for Children. (3)** (Prerequisite: Concurrent enrollment in EDE 4143, EDE 4133, and EDE 4123). Field-based. Selection, organization and presentation of natural science content for elementary school children; assessment of pupil progress and general effectiveness of instruction.

**EDE 4123. Elementary School Arithmetic. (3)** (Prerequisite: Concurrent enrollment in EDE 4113, EDE 4133, and EDE 4143). Field-based. Selection, organization and presentation of content in elementary school mathematics; assessment of pupil progress and general effectiveness of instruction.

**EDE 4133. Language Arts. (3)** (Prerequisite: Concurrent enrollment in EDE 4113, EDE 4123, and EDE 4143). Field-based. Selection, organization and presentation or content in the language arts for elementary school children; assessment of pupil progress, and general effectiveness of instruction.

**EDE 4143. Social Studies in Elementary Schools. (3)** (Prerequisite: Concurrent enrollment in EDE 4113, EDE 4123, and EDE 4133). Field-based. Selection, organization and presentation of social science content for elementary school children; assessment of pupil progress and general effectiveness of instruction.

**EDE 4887, 4888. Student Teaching in Elementary Education. (7,8)** (Both courses to be taken concurrently). (Prerequisites: Admission to Teacher Education and completion of all professional courses). Supervised observation and directed teaching in elementary school classrooms; periodic seminars to include legal, professional, administrative, and curriculum issues in the elementary school.

**EDE 4990/6990. Special Topics in Elementary Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years).

**EDE 7000. Directed Individual Study.** Hours and credits to be arranged.

**EDE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**EDE 8313. Theory and Development of Early Childhood Education. (3)** Three hours lecture. A study of the historical development and the theoretical bases for early childhood education.

**EDE 8423. Elementary School Methods. (3)** Three hours lecture. Seminar-type course in synthesis of methods and techniques applicable to elementary teaching; readings; reports; research.

**EDE 8433. The Elementary School Curriculum. (3)** Three hours lecture. Principles of curriculum construction as they apply to the elementary school program.

**EDE 8443. Seminar in Elementary Education. (3)** Three hours lecture. A study of current issues in elementary education. Designed for elementary and school administration majors.

**EDE 8463. Readings and Research in Children's Literature. (3)** Three hours lecture. Semi-independent study in literature for children and youth, characteristics, good literature for children, illustrators, illustrations, and place of children's literature in the school.

**EDE 8473. The Elementary Social Studies Curriculum. (3)** Three hours lecture. Seminar-type course to include research; trends, methods; provision for individual differences; multi-level materials.

**EDE 8483. Teaching Physical Science in the Elementary Schools. (3)** Three hours lecture. Problems of implementing new programs in science. Training in the use of inductive methods in concept formation.

**EDE 8493. Teaching Biological Science in the Elementary Schools. (3)** Three hours lecture. Continuation of EDE 8483 with emphasis in training teachers to develop concepts in the biological sciences in inductive methods.

**EDE 8513. Curriculum and Program Developments in Early Childhood Education. (3)** Three hours lecture. The recent and most promising developments in curriculum for preschool through primary aged children.

**EDE 8523. Practicum: Language Arts and Literacy Development in Early Childhood Education. (3)** (Prerequisites: EDE 4133, RDG 3113, RDG 3213, or the equivalent). Two hours lecture. Two hours laboratory. A study of language development; the language arts curriculum for young children. Observation and participation in a preschool.

**EDE 8533. Behavioral Experiences in Early Childhood Education. (3)** Three hours lecture. The world of the child from preschool through early primary years with emphasis on child behavior.

**EDE 8543. Mathematics Experiences in Early Childhood Education. (3)** (Prerequisites: EDE 4123 or the equivalent). Three hours lecture. Materials, methods and the preparation and use of instructional media in providing mathematical experiences for young children. Observation and participation in a preschool.

**EDE 8893. Readings in Elementary Education. (3)** (Prerequisites: Doctoral or Specialist standing or consent of the instructor). Readings and in-depth discussions to include innovation, controversy, and authoritative studies in the field.

**EDE 8990. Special Topics in Elementary Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years).

**EDE 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**EDE 9413. Practicum in College Teaching. (3)** Three hours practicum. Teaching of at least one course in education, under the supervision of a senior staff member. (Same as EDS 9413)

**EDE 9420. Research Practicum in Early Childhood Education. (1-6)** (Prerequisites: EDE 8513, EDE 8523, EDE 8533, EDE 8543). Research experiences through participation, observation, and experimental projects related to early childhood settings.

## EDUCATIONAL FOUNDATION and CORE COURSES

**EDF 2990. Special Topics in Educational Foundation. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years).

**EDF 3243. Planning and Managing Learning. (3)** (Prerequisites: Completion of EDF 3333 Social Foundations and EPY 3143 Human Development and Learning and concurrent enrollment in EPY 3253 Evaluation Learning). Three hours lecture. A study of variables contributing to efficiency and competency in planning for teacher-learner activities and the creation and maintenance of positive learning environment.

**EDF 3333. Social Foundations of Education. (3)** Three hours lecture. A study of the sociological, historical, political, legal, and philosophical bases of American education.

**EDF 3413. Writing for Thinking. (3)** (Prerequisites: Completion of EN 1103 and 1113 or equivalent with grade of C or better in each and junior standing). Two hours lecture. Two hours laboratory. Designed to enhance participants' writing/thinking skills and to prepare participants to use writing as a learning process with groups they teach or lead.

**EDF 4990/6990. Special Topics in Educational Foundation. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years).

**EDF 8323. Comparative Education. (3)** Three hours lecture. Contemporary educational movements in Denmark, France, Great Britain, India, the Soviet Union, and the United States; technical changes and their effects. Spring semester.

**EDF 8353. Principles of Curriculum Development. (3)** Three hours lecture. An examination of principles, problems, and practices influencing curriculum planning; relationships between elementary and secondary school curriculums; research in general curriculum problems. Fall, Spring, Summer terms.

**EDF 8363. Function and Methods of Research in Education. (3)** Three hours lecture. The function of research in the development and conduct of the educational program; research methods and techniques in education and the contributions of research to public education; rules and principles governing evidence and conclusions. Fall, Spring, Summer terms.

**EDF 8383. Issues in Education. (3)** Three hours lecture. A critical study of current issues in education.

**EDF 8393. History of Education in the United States. (3)** Three hours lecture. A history of the growth and development of education in the United States from earliest Colonial times to the present, including recent movements and trends.

**EDF 8990. Special Topics in Educational Foundation. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years)

**EDF 9313. Philosophy of Education. (3)** Three hours lecture. An examination of educational beliefs and their justification. Fall, Spring, Summer terms.

**EDF 9353. Interdisciplinary Seminar in Education. (3)** Three hours lecture. A problem course considering accomplishments and needs in professional education as viewed from the interdisciplinary approach.

**EDF 9373. Educational Research Design. (3)** (Prerequisites: EDF 8363 and EPY 6214 or equivalents; consent of instructor). Three hours lecture. A study of various designs of research and preparation of research proposals. Fall, Spring, Summer terms.

**EDF 9443. Single-Subject Research Designs for Education. (3)** Three hours lecture. A detailed examination of single-subject research designs and their associated research methods including data collection and data evaluation techniques. Spring, Summer terms.

**EDF 9453. Qualitative Techniques in Educational Research. (3)** (Prerequisites: EPY 8214, EDF 9373). Three hours lecture. Theoretical considerations and applied methods, techniques, and analysis of field based educational research. Spring, Summer terms.

**EDUCATIONAL LEADERSHIP**

Office: 100 Industrial Education Building  
Major Advisor: Anthony A. Olinzock

(For departmental information, see INSTRUCTIONAL SYSTEMS, LEADERSHIP, and WORKFORCE DEVELOPMENT.)

**EDL 8113. Contexts of Educational Leadership. (3)** Three hours lecture. Exploration of the educational leader's responses to historical, philosophical, sociocultural, democratic and educational contexts affecting leadership; school culture and climate; change processes for school improvement.

**EDL 8123. Principles of Educational Leadership. (3)** (Prerequisite: EDL 8113). Three hours lecture. Applying democratic processes to school governance and leadership; decision making; consensus building; empowerment; vision; mission; and school improvement.

**EDL 8143. Educational Leaders as Instructional Supervisors. (3)** Three hours lecture. Applying interpersonal and clinical skills, techniques and approaches in the observation, supervision, and empowerment of teachers and in the facilitation of teaching and learning environments.

**EDL 8163. Educational Budgeting and Resource Allocation. (3)** Three hours lecture. Administrative leadership for organization, management, allocation or resources to enhance and support teaching and learning; four modules: budgeting, facilities, personnel, student and family services.

**EDL 8173. Legal and Ethical Perspectives of Leadership in Schools. (3)** Three hours lecture. Examination of legal and ethical issues in educational leadership. Analysis of impact of laws and legal decisions on policy formation and decision implementation in education.

**EDL 8193. Educational Environments. (3)** (Prerequisites: EDL 8201 and EDL 8202). Three hours lecture. Capstone course of Mas-

ter's/Specialist AA Certification program. Theories, roles, functions of leadership in educational environments; organizational structures; community and board relationships; policy; strategic planning.

**EDL 8213. Internship I: Observation and Field Applications. (3)** (Prerequisites: EDL 8113, EDL 8123 and EPY 8223). Interns experience designated observation, authentic application, and mentorship activities at educational sites under joint supervision of university and school-based leaders.

**EDL 8223. Internship II: Administrative Applications. (3)** (Prerequisites: EDL 8163, EDL 8173, EPY 9263, and EDL 8213). Interns observe and apply techniques of administrative leadership in authentic educational situations under joint supervision of university and school-based staff at school sites.

**EDL 8233. Internship III: Instructional Applications. (3)** (Prerequisites: EDL 8223, EDL 8143, EDL 8193, EDL 8213, EDL 8223 or approval of the instructor). Focus on instructional leadership experiences; designated culminating internship activities at school sites; joint supervision by university staff and school-and/or district-based leadership.

**EDL 8990. Special Topics in Educational Leadership. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years.)

**SECONDARY EDUCATION**

Office: 314 Allen Hall

(For departmental information, see CURRICULUM and INSTRUCTION.)

**EDS 2990. Special Topics in Secondary Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years)

**EDS 3411. Practicum in Secondary Education. (1)** Observation (30 hours) of secondary age children and participation in classroom activities prior to the directed teaching.

**EDS 4000. Directed Individual Study.** Hours and credits to be arranged.

**EDS 4633/6633. Teaching of Mathematics. (3)** Three hours lecture. Field based. Aims and purposes of teaching mathematics in high school, curriculum problems, organization and presentation of subject matter, methods of teaching and evaluation.

**EDS 4643/6643. Teaching of Social Studies. (3)** Three hours lecture. Field based. Purposes and objectives of social studies; program includes methods, techniques, and materials. Designed primarily for secondary school teachers.

**EDS 4653/6653. Teaching of Science. (3)** Three hours lecture. Field based. Aims and techniques of teaching science in high schools including selection, organization, and presentation of subject matter.

**EDS 4673/6673. Teaching of Language Arts. (3)** Three hours lecture. Field based. Objectives of English; includes content, organization, methods of teaching language, literature, and composition. Designed primarily for secondary school teachers of language arts, foreign language, speech.

**EDS 4873. Professional Seminar in Secondary Education. (3)** (Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. A seminar dealing with legal, professional, administrative, and curriculum issues as they relate to secondary education in the schools.

**EDS 4886,4896. Student Teaching in Secondary Education. (6,6)** (Both courses to be taken concurrently). (Prerequisites: Admission to Teacher Education and senior standing). Supervised observation and directed teaching in respective field of endorsement.

**EDS 4990/6990. Special Topics in Secondary Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited

basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years)

**EDS 7000. Directed Individual Study.** Hours and credits to be arranged.

**EDS 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**EDS 8103. Advanced Methodologies in Middle and Secondary Education. (3)** (Prerequisite: TKT 1273 or equivalent). Three hours lecture. Using technology as instructional tools, evaluate software, consider ethical issues; design technology-based classrooms, mini-grants, and lesson modules aligned with curriculum standards.

**EDS 8613. Middle and Secondary School Curriculum. (3)** Three hours lecture. Principles of curriculum construction as they apply to the middle and secondary school and the various subject areas. Fall term.

**EDS 8633. Problems of Secondary Education. (3)** (Prerequisite: Master's degree or consent of instructor). Three hours lecture. Study of critical problems in secondary education. Spring term.

**EDS 8643. Directed Reading in Secondary Education. (3)** Intensive supervised readings in the field of secondary education.

**EDS 8713. Curriculum Adjustments. (3)** Three hours lecture. Adjusting the school curriculum to meet individual pupil differences.

**EDS 8990. Special Topics in Secondary Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

**EDS 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**EDS 9413. Practicum in College Teaching. (3)** Three hours practicum. Teaching of at least one course in education, under the supervision of a senior staff member. (Same as EDE 9413)

**EDS 9603. Practicum in College Teaching of Secondary Education. (3)** Teaching of at least one course in education under the supervision of a senior staff member. Supervision of student teachers.

**SPECIAL EDUCATION**

Office: 314 Allen Hall

(For departmental information, see COUNSELING, EDUCATIONAL PSYCHOLOGY and SPECIAL EDUCATION.)

**EDX 2101. Laboratory Experiences in Special Education. (1)** Observation of children in special education and participation in classroom activities prior to the directed teaching.

**EDX 2990. Special Topics in Special Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EDX 3203. Introduction to Learning Disabilities. (3)** Three hours lecture. Integrities for learning; receptive, associative, and expressive disorders; specific learning disabilities.

**EDX 3213. Psychology and Education of Exceptional Children and Youth. (3)** Three hours lecture. Introduction to exceptional children and youth who deviate from the average in physical, mental, emotional, and social characteristics. Program planning is surveyed.

**EDX 3223. Introduction to the Emotional/Behavioral Disorders. (3)** Three hours lecture and field trips. Survey to acquaint students with emotionally disturbed and behaviorally disordered children, giving an overview of the theoretical approaches in their education.

**EDX 3233. Contingency Management with Exceptional Children (3)** Three hours lecture. Competency-Based Instructional Sequence and field experience. A study of the components of contingency management with emphasis on application in the field with exceptional children.

**EDX 4000. Directed Individual Study.** Hours and credits to be arranged.

**EDX 4113/6113. Diagnostic-Prescriptive Methods and Materials for Early Childhood Disabled. (3)** Three hours of lecture and laboratory work including assessment and individualized programming utilizing methods and materials for EMR and LD preschool and primary level children.

**EDX 4123/6123. Diagnostic-Prescriptive Methods and Materials for Elementary Age Disabled. (3)** Three hours of lecture and laboratory work including assessment and individualized programming utilizing methods and materials for EMR and LD elementary school-age children.

**EDX 4133/6133. Diagnostic-Prescriptive Methods and Materials for Secondary Age Disabled. (3)** Three hours of lecture and laboratory work including assessment and individualized programming utilizing methods and materials for EMR and LD secondary school-age children.

**EDX 4353/6353. Assistive Technology in Special Education. (3)** Three hours lecture. Application of adaptive technology with microcomputers in the education of students with special needs.

**EDX 4413/6413. Working with Parents of Exceptional Children. (3)** Three hours lecture. A study of the development, goals, and objectives of organized parent educational groups. A study of problems of parents of children who have disabilities.

**EDX 4423. Teaching the Disadvantaged Child. (3)** The study of the disadvantaged child in terms of theories, cultures, and techniques of teaching and exploration of curricular innovations.

**EDX 4503/6503. Teaching the Severely and Profoundly Impaired Child. (3)** Two hours lecture. One hour practicum. A survey of operational models and techniques to be implemented with the Severely/Profoundly Impaired; to include curriculum, methods and administrative educational adjustments.

**EDX 4603/6603. Children and Youth with Physical/Multiple Disabilities. (3)** Three hours lecture. Educational implications and adaptations of procedures in schools, homes, hospitals and special schools for children with orthopedic and/or neurological impairments.

**EDX 4613/6613. Teaching Children and Youth with Physical/Multiple Disabilities. (3)** Three hours lecture. Methods and materials applicable to teaching children and youth with physical or multiple conditions which are the results of neurological or orthopedic impairments.

**EDX 4623/6623. Curricular and Mobility Adaptations for Physical/ Multiple Disabilities. (3)** Three hours lecture. The study of motor functions including range of motion, gait training, and other environmental adjustments that can be implemented by classroom teachers.

**EDX 4887/4898. Student Teaching in Special Education. (7,8)** (Both courses to be taken concurrently). (Prerequisites: Admission to Teacher Education and senior standing). Supervised observation and directed teaching in special education. In addition, there is a professional seminar dealing with current issues in special education.

**EDX 4953/6953. Introduction to Sign Language. (3)** Development of basic sign language skills, study of special needs of deaf persons, and understanding use of interpreters. (Same as COE 4363/6363).

**EDX 4990/6990. Special Topics in Special Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Course limited to two offerings under one title within two academic years).

**EDX 7000. Directed Individual Study.** Hours and credits to be arranged.

**EDX 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**EDX 8103. Advanced Contingency Management. (3)** Three hours lecture. This course is designed to utilize the principles and procedures of contingency management and applied behavioral analysis research to design, implement, and evaluate behaviorally oriented programs.

**EDX 8123. Organization and Supervision of Special Education. (3)** Three hours lecture. Organizational theory of special education. Leadership behavior and role of special education supervisor; grant writing.

**EDX 8133. Readings and Research in Exceptional Education. (3)** Three hours lecture. Emphasis on current literature in all areas of exceptionality. Understanding and interpretation of psychological diagnosis. Individual and group research.

**EDX 8143. Early Education for the Disabled. (3)** Three hours lecture. Rationale; characteristics; educational approaches; exemplary programs; research in the field.

**EDX 8153. Language Development - Assessment and Remediation. (3)** Two hours lecture and two hours practicum. Administration and interpretation of the Illinois Test of Psycholinguistic Abilities and other selected instruments of language development. Remediation techniques will also be discussed as they relate to the assessment techniques.

**EDX 8163. Teaching Strategies for the Gifted. (3)** (Prerequisite: Consent of instructor). Teaching approaches, development of special problems, selection of materials, and remediation of problems related to learning.

**EDX 8173. Special Education in the Regular Classroom. (3)** Three hours lecture. Provides a greater understanding of the handicapped child who may be in the regular classroom and suggests methods and techniques for teaching the handicapped student in the regular classroom.

**EDX 8183. Seminar in Learning Disabilities. (3)** (Prerequisite: EDX 3203 or equivalent). Three hours lecture. An advanced course dealing with the condition of learning disabilities. Current research dealing with causes, treatments, and prevention strategies will be studied.

**EDX 8203. Practicum: Diagnosis of Special Education Populations. (3)** (Prerequisite: Approval of instructor). Hours and credits to be arranged. Practicum experience utilizing a multi disciplinary team approach to the diagnosis and educational planning for students suspected of being mildly, moderately, and multiply impaired.

**EDX 8213. Practicum: Remediation of Special Education Populations. (3)** One hour seminar, three hours practicum. Selection, utilization, and evaluation of specialized remedial materials and techniques with special education populations.

**EDX 8223. Supervision: Diagnosis of the Educationally Handicapped Practicum. (3)** Two hours lecture, two hours practicum. Provide guided responsibility for conducting diagnostic staffings, supervising testings, and coordinating case study interpretations between staff, home and school.

**EDX 8303. Seminar in Mental Retardation. (3)** (Prerequisite: EDX 8103). Three hours lecture. An advanced course dealing with the condition of mental retardation. Educational implication and research involving those classified as mentally retarded.

**EDX 8333. Placement Services and Techniques. (3)** Three hours lecture. Academic and job placement as a means of promoting the development and adjustment of students at all levels of education. (Same as COE 8333).

**EDX 8393. Seminar in Education for the Emotionally Disabled. (3)** (Prerequisite: EDX 8403.) One hour lecture, recitation, simulation, and field trips. A comprehensive study of contributing factors in emotional disturbance and the educational technology of the treatment of emotionally handicapped children.

**EDX 8403. Teaching the Emotionally Disabled. (3)** Three hours lecture and practicum. The curriculum, methods, and principles and problems of working with the emotionally handicapped.

**EDX 8413. Personal, Social, and Work Adjustment Counseling. (3)** Two hours lecture. Two hours laboratory. Personal, social, work adjustment counseling and employability skills training for disabled persons and others with special needs. Includes individual, group, and situational techniques. (Same as COE 8413 and TKT 8413.)

**EDX 8780. Internship in Special Education. (3-6)** Three hours practicum. Supervised observation, participation, and teaching of exceptional children in classrooms and resource rooms. Supervised experiences in community, state departments, supervisory positions.

## ENGINEERING GRAPHICS

Office: 116 McCain Engineering Building

**EG 1142. Engineering Graphics. (2)** Two hours lecture. One hour demonstration. Presentation of sketching techniques, lettering and computer aided drafting with traditional engineering drawing topics, including orthographic projection, engineering documentation, auxiliary views, and working drawings.

**EG 1143. Graphic Communication. (3)** One hour lecture. Five hours laboratory. Orthographic projection, instrumental drawing, point, line, plane identities, first and second auxiliaries, computer assisted design and drafting using personal computers.

**EG 1183. Honors Engineering Graphics. (3)** One hour lecture. Five hours laboratory. Presentation of traditional engineering graphics topics using freehand sketching and a microcomputer-based interactive computer-aided drawing system, plus solid modeling and computer-aided manufacturing for honors students.

**EG 1411. AutoCAD. (1)** (Prerequisite: Knowledge of projection graphics). Three hours laboratory. Practical application solutions to engineering graphic problems using a specific computer graphics software package, AutoCAD.

**EG 1413. Basic Technical Drawing. (3)** One hour lecture. Five hours laboratory. Technical sketching; lettering, use of instruments; geometric construction; object shape and size description through application of orthographic multiview projection; shop operations; dimensioning; sections and conventions.

**EG 1423. Advanced Technical Drawing. (3)** (Prerequisite: EG 1413). One hour lecture. Five hours laboratory. Auxiliaries, fasteners, elements of working drawings; emphasizing standard practices and procedures to convey size and shape description; pictorials; drawing practices related to various technical areas.

**EG 1443. Technology Graphics. (3)** (Prerequisites: EG 1143.) Two hours lecture. Four hours laboratory. Visualization/analysis using descriptive geometry principles applying specifically to technology. Computer aided drafting/design in industrial technology. Reading/drafting working drawings in technology fields.

**EG 1513. Architectural Graphics. (3)** One hour lecture. Five hours laboratory. Survey of various drawing systems. Practical exercises

**EDX 8990. Special Topics in Special Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

Assistant Professor Branch; Instructor Bostick in orthographic multiview projection, isometric, oblique and perspective drawing systems, with emphasis on lettering, reflections and cast shadows.

**EG 2513. Construction Drawing. (3)** (Prerequisite: EG 1143 or EG 1413). One hour lecture. Five hours laboratory. Survey of building and construction industries; materials and types of construction; specifications; use of architectural graphic standards and minimum construction requirements; construction details; drawings; lettering.

**EG 2643. Computer Graphics. (3)** (Prerequisite: Any basic graphics course or consent of instructor). One hour lecture. Five hours laboratory. Use of the computer plotter to produce multiview drawings; pictorials, drawings, of two and three dimensional shapes. Visualization improvement through study of principles involved.

**EG 2990. Special Topics in Engineering Graphics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EG 4000. Directed Individual Study.** Hours and credits to be arranged.

**EG 4990/6990. Special Topics in Engineering Graphics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EG 7000. Directed Individual Study.** Hours and credits to be arranged.

**EG 8990. Special Topics in Engineering Graphics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## ENGINEERING MECHANICS

Office: 330 Walker Engineering

Professor Horstemeyer, Newman Fr., Rais-Rohani;

Associate Professors Bridges, Daniewicz, Cinnella, Gatlin, Luck, and Newman III;

**EM 2413. Engineering Mechanics I. (3)** (Prerequisites: MA 1723 and PH 2213). Three hours lecture. Concepts of forces, moments and other vector quantities; analysis of force systems; conditions of equilibrium; friction; centroids and moments of inertia.

**EM 2433. Engineering Mechanics II. (3)** (Prerequisites: EM 2413 and MA 2733). Three hours lecture. Kinematics of particles and rigid bodies, kinetics of particles and rigid bodies using force-mass-acceleration, energy, momentum methods.

**EM 2990. Special Topics in Engineering Mechanics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EM 3213. Mechanics of Materials. (3)** (Prerequisite: EM 2413). Three hours lecture. Free body diagrams, equilibrium of simple structures; shear and bending moment diagrams; analysis of stress and strain; deflections of beams.

**EM 3313. Fluid Mechanics. (3)** (Prerequisite: EM 2413). Three hours lecture. Fluid statics; analysis of fluid motion using the continuity, momentum and energy relationships; introduction to viscous flows.

**EM 3413. Vibrations. (3)** (Prerequisites: EM 2433 and MA 3253). Three hours lecture. Fundamentals of free vibration, energy methods; forced and damped vibration, single degree of freedom; two degrees of freedom.

**EM 4133/6133. Mechanics of Composite Materials. (3)** (Prerequisites: EM 3213 and MA 3253.) Three hours lecture. Stress, strain,

constitutive relations for anisotropic material, lamina properties, laminate properties, composite beams and plates.

**EM 4123/6123. An Introduction to the Finite Element Method. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Introduction to the finite element theory and formulation; use of existing computer programs, with applications to the area of mechanics.

**EM 4213/6213. Advanced Mechanics of Materials. (3)** (Prerequisite: EM 3213). Three hours lecture. Stress, strain, stress-strain relationships, strain energy, failure theories, curved beams, unsymmetrical bending, shear center, torsion of noncircular sections, energy principles, Castigliano's theorem, inelastic behavior.

**EM 4990/6990. Special Topics in Engineering Mechanics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EM 7000. Directed Individual Study.** Hours and credits to be arranged.

**EM 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**EM 8113. Theory of Continuous Media. (3)** (Prerequisite: MA 3353 or consent of the instructor). Three hours lecture. An introduction to the general theory of continuous media and its application to the theories of elasticity and fluid mechanics.

**EM 8123. Energy Principles. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Variational principles, virtual work, minimum



potential energy, complementary energy, Lagrange's equations. Applications to stress analysis, elastic stability, and vibrations.

**EM 8203. Applied Elasticity. (3)** Three hours lecture. Analysis of stress and strain; stress-strain relations; bending and torsion of beams; stress functions; strain energy.

**EM 8223. Elastic Stability. (3)** Three hours lecture. Bending and buckling of beams and columns; numerical methods; minimum of the total potential; bending and buckling of plates.

**EM 8313. Advanced Dynamics. (3)** (Prerequisites: EM 2433 and MA 3253). Three hours lecture. Fundamental considerations, Hamilton's principle, Lagrange's equations, rigid body dynamics.

## Department of ENGLISH

Office: 316 Lee Hall

Professors Bonney, Embree, Hargrove, Lyons, Myers, and Patteson  
Associate Professors Bentley, Creevy, Little(Head), Murray, Myers, White, Williams, and Wolf;  
Assistant Professors Hagenston, Kreisel, Lee, Marsh, Vice, and West ;  
Instructors Brasher, Ellis and Spurlock

**NOTE:** Entering freshmen may enter honors or special sections of first-semester composition depending on standard and other tests. Students with ACT scores in English from 15 to 18 take EN 1003, from 19 to 28 take EN 1103, and of 29 and above take EN 1163 or EN 1183. International students of non-English background will be placed in composition sections appropriate to their needs as determined by TOFEL scores.

**EN 0003. Developmental English. (3)** Emphasizes the use of standard American English. Offered only to students required to enroll in developmental studies; prerequisite to any English courses applicable to requirements.

**EN 0103. Basic English. (3)** (Prerequisite: A score of 15 to 18 on the English section of the ACT). Three hours lecture. A study of grammar and mechanics as basic to composition, with emphasis on the sentence and the paragraph. Does not count toward any degree.

**EN 1103. English Composition I. (3)** (Prerequisite: A score of 19 or above on the English section of the ACT or EN 1003). Three hours lecture. A study of logical and rhetorical principles and organizational strategies that contribute to effective writing.

**EN 1113. English Composition II. (3)** (Prerequisite: EN 1103, 1163, or 1183). Three hours lecture. An expanded study of and practice in stylistics, logic, and research as contributions to analytical writing.

**EN 1163. Accelerated Composition I. (3)** (Prerequisite: A score of 29 or above on the English section of the ACT or consent of the instructor). Three hours lecture. An expanded study of and practice in stylistics, logic, and research as contributions to expository writing, designed for students who exhibit command of basic rhetorical principles.

**EN 1173. Accelerated Composition II. (3)** (Prerequisite: EN 1163 or consent of the instructor). Three hours lecture. An expanded study of and practice in stylistics, logic, and research as contributions to analytical writing, with emphasis on extensive study of diverse rhetorical models.

**EN 1183. Honors Composition I. (3)** (Prerequisite: Open through invitation only). Three hours lecture. The analytical study and frequent practice of interdisciplinary writing coupled with the analytical study of major literary genres - fiction, poetry, and drama.

**EN 1193. Honors Composition II. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Continuation of EN 1183.

**EN 2203. Introduction to Literature. (3)** (Prerequisite: Completion of freshman composition). (Not open to English majors or honors students who complete EN 1183 or 1193). Three hours lecture. The critical and appreciative study of masterpieces in various genres chosen from English and world literature.

**EN 2213. English Literature. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture. A survey of English literature from the beginning to the Romantic Period.

**EN 2223. English Literature. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture. A Survey of English Literature from the Romantic Period to the present.

**EN 2243. American Literature. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture. A survey of American literature from the beginning to Whitman.

**EN 2253. American Literature. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture. A survey of American Literature from Whitman to the present.

**EN 2273. World Literature. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture. Selected writings of Greece, Rome, and Medieval European translation.

**EN 2283. World Literature. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture. Selected writings of the non-English-speaking world from the Renaissance through the Twentieth Century.

**EM 8323. Advanced Vibrations. (3)** (Prerequisite: EM 3413). Three hours lecture. Oscillatory systems, matrix formulation by Lagrange's equations, natural modes of discrete and continuous systems, approximate methods, modal analysis.

**EM 8990. Special Topics in Engineering Mechanics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EN 2383. Sophomore English Honors. (3)** (Prerequisite: Completion of required hours of freshman composition and invitation to the program). Three hours lecture. Open to English majors. An advanced survey of English literature from the beginning to the Romantic Period.

**EN 2393. Sophomore English Honors. (3)** (Prerequisite: Completion of required hours of freshman composition and invitation to the program). Three hours lecture. Open to English majors. An advanced survey of English literature from the Romantic Period to the present.

**EN 2434. Literature and Film. (4)** (Prerequisite: Completion of English composition requirements). Three hours lecture. One laboratory. Introduction to literary and cinematic techniques, methods of analysis, and structures.

**EN 2443. Introduction to Science Fiction. (3)** (Prerequisite: Completion of English requirements of the student's major field). Three hours lecture. A study of major science fiction writers of the past two centuries, with emphasis on human experience in a technological society.

**EN 2453. The Icelandic Sagas. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture: A survey, in English, of the sagas and their relationship to history, mythology, and other medieval literatures. (Same as FL 2453).

**EN 2513. Sports Literature. (3)** Three hours lecture. (Prerequisite: Completion of freshman composition). A critical and thematic study of sports with emphasis on the role of athletics in life and society.

**EN 2990. Special Topics in English. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EN 3103. Writing for Engineers. (3)** (Prerequisite: Completion of composition requirements). Three hours lecture. Study and practice in types of exposition required in engineering and scientific fields, including proposals, analyses, inspection reports, economic evaluations, data transmission, and processes.

**EN 3223. Writing for Architects. (3)** (Prerequisite: Completion of freshman composition; junior standing). Three hours lecture. Development of writing ability by reading, analyzing thematic architectural material, and by writing. Lecture; group discussions of grammar, rhetoric stylistics, etc.

**EN 3303. Creative Writing. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture. Basic techniques in writing fiction and poetry; meter and rhyme, metaphor and image, plot, characterization, dramatic detail.

**EN 3363. American Literary History. (3)** (Prerequisite: 3 hours of literature or consent of the instructor; students taking EN 3363 cannot earn credit toward an English major for EN 2243 or 2253). Three hours lecture. Major writers, genres, periods, and trends in American literature with particular emphasis on critical techniques and resources useful to students of literature.

**EN 3413. Advanced Composition. (3)** (Prerequisite: Twelve hours of English). Three hours lecture. An advanced expository writing course and general introduction to research methods and materials in language and literature.

**EN 3423. Descriptive English Grammar. (3)** (Prerequisite: Twelve hours of English). Three hours lecture. Advanced course in English grammar.

**EN 3513. Women and Literature: Selected Topics. (3)** (Prerequisites: Completion of freshman composition). Three hours lecture. A study of literary works by or about women. Texts are selected according to theme, genre, and/or historical period.

**EN 4000. Directed Individual Study.** Hours and credits to be arranged.

**EN 4203/6203. Advanced Technical Writing and Editing. (3)** (Prerequisite: EN 3103 or EN 3413 or consent of instructor). Three hours lecture. Advanced study and practice of the writing and editing of technical reports in corporate, academic, or governmental organizations.

**EN 4223/6223. Principles of Legal Writing. (3)** (Prerequisites: Junior standing and completion of English requirements). Three hours lecture. Introduction to prose of the legal profession, emphasizing rhetorical strategy and style. Advanced composition, including work with contracts, letters, regulations, memoranda of law, and briefs.

**EN 4303/6303. Craft of Poetry. (3)** (Prerequisite: EN 3303 or consent of instructor). Three hours lecture. The craft and practice of writing poetry.

**EN 4313/6313. Craft of Fiction. (3)** (Prerequisite: EN 3303 or consent of instructor). Three hours lecture. The craft and practice of writing fiction.

**EN 4323/6323. Literary Criticism from Plato to the Present. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A survey of literary criticism from Plato to the present.

**EN 4333/6333. Literature of the South. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A critical survey of Southern writers past and present.

**EN 4343/6343. African American Literature. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of African American literature, especially that of the Twentieth Century.

**EN 4353/6353. 20th Century Critical Theory. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of major twentieth-century strategies of interpretation, including psychoanalysis, Marxism, structuralism, feminism, deconstruction.

**EN 4403/6403. Introduction to Linguistics. (3)** (Prerequisite: Twelve hours of English). Three hours lecture. The descriptive and historical study of language; linguistic analysis and comparisons; language classification; language in its social and cultural setting. (Same as AN 4403/6403)

**EN 4413/6413. History of the English Language. (3)** (Prerequisite: Twelve hours of English). Three hours lecture. The origin and development of the English language, structural and phonetic changes; conventions of modern usage.

**EN 4433/6433. Approaches to TESOL. (3)** (Prerequisite: EN 4403 or EN 3423 or consent of instructor). Three hours lecture. Methodology of Teaching English as a Second Language, with emphasis upon theory of second language acquisition, teaching techniques, and evaluation of relevant textbooks.

**EN 4443/6443. English Syntax. (3)** Three hours lecture. Grammatical analysis of English with emphasis on pedagogical applications to teaching English as a foreign/second language.

**EN 4453/6453. TESOL Course Design and Testing. (3)** (Prerequisite: EN 4403/6403 or consent of instructor). Three hours lecture. Developing programs, materials and tests for second language learning.

**EN 4463/6463. Studies in Second Language Acquisition. (3)** (Prerequisite: EN 4403/6403 or consent of instructor). Three hours lecture. A survey of the major theories of language acquisition, concentrating on accounts of second language acquisition.

**EN 4503/6503. Shakespeare. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Shakespeare's plays through 1599.

**EN 4513/6513. Shakespeare. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Shakespeare's plays from 1600.

**EN 4523/6523. Chaucer. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in the major works of Chaucer. Readings in Middle English.

**EN 4533/6533. Milton. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. The principal writings of Milton, including all of *PARADISE LOST* and *PARADISE RE-GAINED*, and some of the chief prose works.

**EN 4623/6623. Language and Culture. (3)** (Prerequisite: EN 4403/6403 or consent of instructor). Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as AN 4623/6623 and SO 4623/6623).

**EN 4633/6633. Sociolinguistics. (3)** (Prerequisites: EN 4403 or consent of instructor). Three hours lecture. Examination of relationship between language and society, and how, when, and why people in speech communities use language varieties. (Same as AN 4633/6633 and SO 4633/6633).

**EN 4643/6643. The Eighteenth-Century British Novel. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of major eighteenth-century British novelists.

**EN 4653/6653. The Nineteenth-Century British Novel. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of the major nineteenth-century British novelists.

**EN 4663/6663. The Twentieth-Century British and Irish Novel. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of British and Irish novelists from Conrad and Woolf to Rushdie and Byatt, as well as literary movements including modernism, postmodernism, and postcolonialism.

**EN 4703/6703. English Literature of the Sixteenth Century. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of Renaissance literature in England exclusive of Shakespeare's plays.

**EN 4713/6713. English Literature of the Seventeenth Century. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Seventeenth-century literature exclusive of Shakespeare's plays.

**EN 4723/6723. The Restoration and Swift. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. British poetry, prose, and drama, 1660-1700, and Swift.

**EN 4733/6733. Eighteenth-Century Literature. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. British poetry, prose, and drama of the Eighteenth Century excluding Swift.

**EN 4803/6803. Types of Twentieth-Century Drama. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. The development of modern American, British, and Continental drama since Ibsen.

**EN 4813/6813. The Twentieth-Century World Novel. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Major world novelists of the Twentieth Century, excluding British, Irish, and American.

**EN 4823/6823. Twentieth-Century Poetry. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Chief American and British poets; their verse technique and their contribution to poetic art.

**EN 4863/6863. The Romantic Poets and Prose Writers. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. An intensive study of the major Romantic poets—Wordsworth, Shelley, Keats, Byron, Coleridge—along with some of the non-fiction prose of the period.

**EN 4883/6883. Victorian Poets and Prose Writers. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Intensive study of Tennyson, Browning, Arnold, Swinburne, and other Victorian poets, along with some of the non-fiction prose of the period.

**EN 4903/6903. American Literature: 1800-1860. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in Irving, Cooper, Poe, Hawthorne, the Transcendentalists, and Southern Humorists. This course cannot be taken before EN 2243.

**EN 4913/6913. American Literature: 1860-1900. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Studies in Twain, Whitman, Dickinson, James, Crane, and others. This course cannot be taken before EN 2253.

**EN 4923/6923. Twentieth-Century American Novel. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. A study of the American novel since Dreiser.

**EN 4933/6933. Survey of Contemporary Literature. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Significant trends in European and American literature since the outbreak of World War II.

**EN 4943/6943. Form and Theory of Fiction. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Theoretical aspects of fictional technique, genre, style; readings include novels, short stories, and writings about the craft of fiction. Recommended complement to creative writing courses.

**EN 4953/6953. Form and Theory of Poetry. (3)** (Prerequisite: Completion of English requirements in the student's major). Three hours lecture. Poetic theory; formal conventions, techniques, and innovations in the tradition of English and American poetry. Recommended complement to creative writing courses.

**EN 4990/6990. Special Topics in English. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EN 6013. Internship in Compositional Theory and the Teaching of College Writing. (3)** (Prerequisite: Acceptance as a teaching assistant in the Department of English). Three hours lecture. Compositional theory in relation to teaching and evaluating traditional modes of writing, coordinated with at least twenty hours per week of supervised professional experience.

**EN 7000. Directed Individual Study.** Hours and credits to be arranged.

**EN 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**EN 8103. Graduate Research in English. (3)** Three hours lecture. A required introduction to fields of study and to scholarly research and writing in English language and literature.

**EN 8203. Seminar in Teaching Technical Writing. (3)** (Prerequisite: EN 4203/6203). Three hours lecture. Theory and practice of teaching technical writing.

**EN 8333. Studies in Southern Literature. (3)** Three hours lecture. Studies in the literature of the U.S. South.

**EN 8513. Studies in English Literature to 1485. (3)**

**EN 8523. Studies in English Literature 1485-1660. (3)**

**EN 8533. Studies in English Literature 1660-1832. (3)**

**EN 8543. Studies in English Literature 1832-1900. (3)**

**EN 8553. Studies in American Literature to the Civil War. (3)**

**EN 8563. Studies in American Literature from the Civil War to 1914. (3)**

**EN 8573. Studies in Twentieth-Century Literature. (3)**

**EN 8583. Selected Topics in Language and Literature. (3)**

**EN 8593. Studies in Post-Colonial Literatures. (3)** Three hours lecture. Studies in the literatures of the English-speaking world, excluding Great Britain and the United States.

**EN 8990. Special Topics in English. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## ENVIRONMENTAL SCIENCE

Office: 118 Hand Lab

Professor Oldham

**ENS 2102. Introduction to Environmental Science. (2)** Two hours lecture. A survey course to acquaint the beginning students with the various issues and disciplinary contributions regarding environmental science.

**ENS 4102. Practicum. (2)** (Prerequisite: Permission of ES advisor). A directed field experience of an assigned environmental problem and an associated weekly seminar.

## Department of ENTOMOLOGY and PLANT PATHOLOGY

Office: 103 Clay Lyle Entomology Complex  
104 Dorman Hall (Plant Pathology)

Professors Collison (Head), Ammon, Andrews, Baker, Batson, Brown, Chambers, A. Harris, Jarratt, Layton, Morgan, Nebeker, Pitre, Reed, Robbins, Sciumbato, Schneider, Trevathan, and Williams;  
Associate Professors Baird, Caprio, Ingram, and Lawrence;  
Assistant Professors Ma, and Parker

**EPP 2213. Introduction to Insects. (3)** Two hours lecture. Two hours laboratory. Introduction to structure, function, ecology, taxonomy and evolution of the largest and most diverse group of organisms and how they impact humans and their environment.

**EPP 2313. Insects and Society. (2)** Two hours lecture. Relationships of insects and related arthropods to human culture and beliefs. Emphasis will be on phobias, allergies, diseases, art, food, benefits, and misconceptions about insects.

**EPP 2990. Special Topics in Entomology or Plant Pathology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EPP 3113. Introductory Plant Pathology. (3)** (Prerequisite: BIO 1203 or consent of instructor). Two hours lecture. Three hours laboratory. Acquiring a general knowledge of the principles of plant pathology through a study of selected plant diseases of economic importance for Mississippi.

**EPP 3124. Forest Pest Management. (4)** Three hours lecture. Three hours laboratory. Study of the biology, damage, survey techniques, and control of forest diseases and insects. Pest management in southern forests will be emphasized. Fall semester.

**EPP 3253. Introduction to Livestock Pest Management. (3)** (Prerequisite: EPP 2213 or 4154 preferred or consent of instructor). Two hours lecture. Three hours laboratory. Spring semester. A study of the economic importance, habits, life history, identification and current management measures for ectoparasites of domestic animals and associated food supplies.

**EPP 3423. Ornamental and Turfgrass Insects. (3)** Two hours lecture. Two hours lab. Study of the life history, damage, economic importance and control strategies of pests on ornamental plants and turfgrass.

**EPP 3522. Turfgrass Diseases. (2)** (Prerequisite: EPP 3113 or 3124). Four hours laboratory. Study of the life cycle, damage, economic importance and control strategies of disease turfgrass.

**EPP 4000. Directed Individual Study.** Hours and credits to be arranged.

**EPP 4114/6114. Mycology. (4)** (Prerequisites: BIO 1203 and BIO 1213). Three hours lecture. Three hours laboratory. Survey of the principal fungal classes. Morphology, cytology, and physiology of fungi, and their relations to natural ecosystems, including saprophytic and parasitic (agriculture) fungi. Spring semester, yearly.

**EPP 4154/6154. General Entomology. (4)** Two hours lecture. Four hours laboratory. Fall semester. Biology of insects including mor-

phology, physiology, development, ecology and emphasis on classification of orders and common families.

**EPP 4163/6163. Plant Disease Management. (3)** (Prerequisite: EPP 3113). Two hours lecture. Three hours laboratory. Techniques and fundamentals of plant disease management. Disease dynamics related to management, avoidance, exclusion, eradication of pathogens; principles of plant protection, spraying techniques; biological control. Spring semester.

**EPP 4164/6164. Insect Taxonomy. (4)** (Prerequisite: EPP 4154). Two hours lecture. Six hours laboratory. Spring semester. Advanced study of insect classification.

**EPP 4214/6214. Diseases of Crops. (4)** (Prerequisite: EPP 3113 or 3124). Three hours lecture. Two hours laboratory. Fundamentals and practical aspects of identification and control of selected diseases of crop plants grown in the southern U.S. Spring semester.

**EPP 4223/6223. Pest Control. (3)** (Prerequisite: EPP 3113, PW 3133 or consent of instructor). Three hours lecture. Two hours laboratory for selected topics. Pesticide considerations; control, and control-related biology of structural and urban insect, rodent, and weed pests; and plant diseases.

**EPP 4234/6234. Field Crop Insects. (4)** (Prerequisite: EPP 2213 or 4154). Three hours lecture. Two hours laboratory. Fall semester. Recognition, biology, distribution, damage, economic importance and methods of control of insect pests of agronomic and horticultural crops.

**EPP 4244/6244. Aquatic Entomology. (4)** (Prerequisite: EPP 4154 or instructor approval). Three hours lecture. Two hours laboratory. Study of basic biological and ecological principles important to aquatic insects and related arthropods, including life histories, evolutionary adaptations, community and species and identification.

**EPP 4263/6263. Principles of Insect Pest Management. (3)** Two hours lecture. Two hours laboratory. Discussion of pest management concepts, insect control methods, sampling, and pest management systems. Laboratory involves sampling, calibration, and other exercises related to pest management.

**EPP 4282/6282. Genetics and Pest Management. (2)** (Prerequisite: PO 3103 or consent of instructor). Two hours lecture. Spring semester, even-numbered years. Concepts and applications of genetics to the protection of man, crop plants and livestock against vertebrate and invertebrate pests, weeds, and diseases. (Same as GNS 4282).

**EPP 4335/6335. Anatomy and Physiology of Insects. (5)** (Prerequisite: EPP 4154). Four hours lecture. Three hours laboratory. Spring semester. Introduction to the basic principles of structure and function of insect organ systems from a comparative and evolutionary viewpoint. (Same as PHY 6335).

**EPP 4444/6444. Medical and Veterinary Entomology. (4)** Three hours lecture. Three hours laboratory. Spring semester. Epidemiology and etiology of pathogens disseminated by insects and other arthropods to humans and domestic animals. Laboratory; collection and identification of vectors.

**EPP 4543/6543. Toxicology and Insecticide Chemistry. (3)** (Prerequisite: Organic Chemistry). Two hours lecture. Two hours laboratory. Spring semester. Chemistry, toxicity and mode of action of major groups of insecticides. Laboratory; bioassay methods, insecticide interactions, calculations.

**EPP 4623/6623. Insect Ecology. (3)** (Prerequisite: Upper division standing in one of the biological sciences). Two hours lecture. Two hours laboratory. Fall semester. Consideration of interactions determining the distribution and abundance of insects including diapause, movement, voltinism, population dynamics, competition, trophic habits and community structure.

**EPP 4990/6990. Special Topics in Entomology or Plant Pathology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EPP 7000. Directed Individual Study.** Hours and credits to be arranged.

**EPP 7020. Advanced Research and Independent Study Topics. (1-5).** Advanced studies and research in the subdisciplines of Entomology and Plant Pathology. Student/Faculty member study contracts are required.

**EPP 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**EPP 8111-8121. Seminar. (1)** One hour. Consideration of recent advances and problems in Entomology and Plant Pathology; student participation, general discussion.

**EPP 8113. Plant Nematology. (3)** (Prerequisite: EPP 3113). Two hours lecture. Three hours laboratory. Basic morphology, taxonomy, and nomenclature; discussion of plant pathogenic general, symptomatology, methods of isolation, control methods, and interrelationship of nematodes to other plant pathogens. Fall semester, even years.

**EPP 8123. Plant Virology. (3)** (Prerequisite: EPP 3113). Two hours lecture. Three hours laboratory. Morphology and structure of infectious entity; characteristics of plant virus groups including symptomatology, transmission, vectors, etc. Methods of assay and purification. Spring semester, even years.

**EPP 8143. Advanced Plant Pathology I. (3)** (Prerequisite: EPP 3113). Three hours lecture. The dynamic nature of disease. Genetics and variability of the major groups of plant pathogens. Epidemiology. Genetics of the host-parasitic interaction. Fall semester.

**EPP 8144. Transmission Electron Microscopy. (4)** (Prerequisite: Consent of instructor). One hour lecture. Six hours laboratory. Spring semester. Introduction to the transmission electron microscope, tissue preparation, ultra-microtomy and associated techniques.

**EPP 8153. Taxonomy of Immature Insects. (3)** (Prerequisite: EPP 4164). Two hours lecture. Two hours laboratory. Spring semester,

even-numbered years. A study of immature forms of insects; their structure and identification.

**EPP 8154. Chemical Ecology of Insects. (4)** Prerequisites: EPP 6335; CH 6513 or approval of instructor). Three hours lecture. Two hours laboratory. Fall semester, even numbered years. Discussion of contemporary topics in chemical ecology with reference to the sensory, behavioral, and evolutionary bases of insect/insect and insect/plant interactions.

**EPP 8173. Clinical Plant Pathology. (3)** (Prerequisites: EPP 3113 and EPP 4114). Two four-hour laboratories. Clinical techniques, procedures, and experience in diagnosing plant diseases in the laboratory and field. Covers diseases caused by bacteria, fungi, MLO, nematodes, unfavorable environment and viruses. Summer.

**EPP 8223. Scanning Electron Microscopy. (3)** (Prerequisite: Graduate Student, consent of instructor). Two hours lecture. Three hours laboratory. Fall semester. Introduction to scanning electron microscopy and associated techniques.

**EPP 8253. Advanced Plant Pathology II. (3)** (Prerequisites: EPP 3113, BIO 4214). Three hours lecture. Infection processes, weapons utilized by pathogens in attack, and resultant alterations in ultrastructure, function and metabolism.

**EPP 8272. Empirical Research in Theory and Practice. (2)** Two hours lecture. Fall semester. Introduction to the nature, process, and societal role of research; logical basis, role of chance, researcher attributes, grantsmanship, publication, ethics, and public policy.

**EPP 8333. Advanced Toxicology. (3)** (Prerequisite: EPP 4543). Three hours lecture. Fall semester. Physiological and biochemical actions of pesticides and therapeutic drugs. Pesticide metabolism and resistance. Insecticide synergism. Natural toxins and venoms. (Same as PHY 8333).

**EPP 8453. Insect Pathology. (3)** Two hours lecture. Two hours laboratory. Fall semester, even-numbered years. A study of abnormal conditions among insects as caused by non-infectious and infectious diseases. Bacteria, fungi, protozoa, nematodes and viruses are examined in detail.

**EPP 8483. Ecological Genetics. (3)** (Prerequisites: PO 3103 or equivalent and BIO 4113/6113 or consent of instructor). Three hours lecture. Spring semester, odd-numbered years. Introduction to the application of genetic methods and theory to the study of adaptation in natural populations. (Same as GNS 8483).

**EPP 8783. Insect Control by Host Plant Resistance. (3)** (Prerequisite: A course in either plant or animal genetics). Two hours lecture. Two hours laboratory. Spring semester. Ecological perspective of host plant resistance including morphological, biochemical and behavioral bases of insect-plant interaction. Survey of host plant resistance programs of major crops.

**EPP 8990. Special Topics in Entomology or Plant Pathology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EPP 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## EDUCATIONAL PSYCHOLOGY

Professors: D.Morse, L.Morse, Skinner and Watson;  
Assistant Professors: Givhan and Henington.

**EPY 2513. Human Growth and Development. (3)** Three hours lecture. Psychological principles in the study of the child from birth to puberty; acquisition of motor skills; advance in perception; language, reasoning, and social behavior.

**EPY 2990. Special Topics in Educational Psychology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EPY 3143. Human Development and Learning Strategies in Education. (3)** (Prerequisites: PSY 1013 and admission to Teacher Education or consent of department head). Three hours lecture. A study of developmental perspectives of learning with emphasis on teaching.

**EPY 3253. Evaluating Learning. (3)** (Prerequisite: Admission to Teacher Education). Three hours lecture. A study of instructional evaluation for the purpose of assessing individual pupil progress and general effectiveness of instruction.

**EPY 3503. Principles of Educational Psychology. (3)** Three hours lecture. Application of psychological principles to the educational process; topics covered include learning, humanism, motivation, cognitive development, creativity, intelligence, exceptionalism, classroom management, measurement, and evaluation.

**EPY 3543. Psychology of Adolescence. (3)** Three hours lecture. Physical, intellectual, emotional, and social growth processes from late childhood toward early adulthood; pubertal problems; mental hygiene of adolescence; family and peer relationships.

**EPY 3553. Giftedness/Creativity. (3)** Three hours lecture. An introduction to giftedness and creativity emphasizing uniqueness of gifted/creative individuals; a survey of creative problem-solving approaches.

**EPY 4000. Directed Individual Study.** Hours and credits to be arranged.

**EPY 4033/6033. Application of Learning Theories in Educational and Related Settings. (3)** Three hours lecture. Critical review of literature on learning in applied settings.

**EPY 4053/6053. Psychology and Education of the Mentally Retarded. (3)** Three hours lecture. Definitions, etiology, evaluation, development, and learning strategies of the mentally retarded; the role of family, community, and school in programming for the mentally retarded.

**EPY 4073/6073. Personality Adjustment in Educational and Related Settings. (3)** Three hours lecture. Personality development with special attention to motivation, culture, and interpersonal relations; personality problems in educational settings; corrective techniques.

**EPY 4113/6113. Behavioral and Cognitive Behavioral Interventions. (3)** The study of behavioral and cognitive-behavioral assessments and change procedures with special emphasis on non-school settings. This course cannot be used for special education certification.

**EPY 4214/6214. Educational and Psychological Statistics. (4)** Three hours lecture and three hours laboratory. A course in statistics for education and educational psychology majors. Analysis, description of and inference from various types of data.

**EPY 4313/6313. Measurement and Evaluation. (3)** Three hours lecture. Measurement and evaluation of learning activities and achievement of elementary school pupils and high school students; standardized tests; test construction; statistical techniques.

**EPY 4513. Introduction to Research in Educational Psychology. (3)** Three hours lecture. (Prerequisites: EPY 4214 and 3503). An introduction to conducting educational research focusing on planning and designing research for applied education settings.

**EPY 4610/6610. Seminar in Educational Psychology. (1-6)** (Prerequisite: 9 hours in Psychology and consent of instructor). Credit and title to be arranged. One to six lectures. Examination of specific topics of interest to faculty and students.

**EPY 4990/6990. Special Topics in Educational Psychology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EPY 7000. Directed Individual Study.** Hours and credits to be arranged.

**EPY 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**EPY 8214. Advanced Educational and Psychological Statistics. (4)** (Prerequisite: EPY 4214/6214 or its equivalent.) Three hours lecture and three hours laboratory. A survey of advanced statistical methods with emphasis upon the design and analysis of research problems in education and psychology.

**EPY 8223. Psychological Foundations of Education. (3)** Three hours lecture. The role of psychology in a changing context of organized education; the learner, content, structure, and management of the learning situation; studies of persistent problems.

**EPY 8253. Child & Adolescent Development & Psychopathology. (3)** Three hours lecture. Critical survey of recent problems, methods, and research in both the normal and abnormal psychological development of children and adolescents.

**EPY 8263. Psychological Testing in Educational and Related Settings. (3)** Three hours lecture. Principles and techniques involved in selecting, administering, scoring and interpreting tests of personality, interest, vocational aptitude, achievement, and intelligence.

**EPY 8273. Neuropsychology and Neuropsychological Assessment. (3)** (Prerequisite: EPY 8723 Individual Assessment for Educational and Related Settings or PSY 8353 Intelligence Testing). Three hours lecture. Study of brain-behavior relationships with emphasis on techniques and procedures for diagnosing brain dysfunction. Study of assessment techniques, rehabilitation planning, and research contributions.

**EPY 8293. Cognitive Development. (3)** Three hours lecture. The study of cognitive/intellectual development including the theories derived from the work of information-processing psychologists and Jean Piaget.

**EPY 8493. Child Behavior and Personality Assessment. (3)** (Prerequisites: EPY 8263 and consent of instructor). Three hours lecture. Selection, administration, scoring, and interpretation of behavior and personality instruments.

**EPY 8523. Psychology of the Gifted. (3)** Three hours lecture. Characteristics, identification and evaluation of gifted individuals. Social, physical, emotional, and intellectual development of the gifted.

**EPY 8533. Practicum in Teaching Educational Psychology. (3)** (Prerequisite: EPY 8223). One hour lecture. Two hours practicum. Establishing objectives; selecting and organizing learning experiences; guiding and evaluating learning; supervised practicum in teaching educational psychology.

**EPY 8694. Supervised Experiences in School Psychology: Assessment. (4)** (Prerequisites: EPY 8933, EPY 8723, EPY 8493, and consent of instructor). Supervised assessment experiences in educational settings utilizing psychological principles and techniques in teaching/learning problems. Three hundred plus hours of applied-supervised assessment experiences in a school setting.

**EPY 8703. School Psychology. (3)** Two hours lecture, two hours field experience. A course covering the history, current objectives, organization and administration of school psychology combined with appropriate field experience.

**EPY 8723. Individual Assessment for Educational and Related Settings. (3)** (Prerequisite: EPY 6073 and EPY 8263 or equivalent). Two hours lecture, two hours practicum. Training in administering individual psychometric instruments; verbal and nonverbal linguistic techniques; interpretation of scores, writing psychometric reports.

**EPY 8763. Advanced Child Behavioral & Cognitive-Behavioral Intervention. (3)** Three hours lecture. Identification, analysis, treatment, and evaluation of behavioral and cognitive-behavioral problems presented by children and youth.

**EPY 8773. Assessment and Interventions for Academic Skills Deficits. (3)** Three hours lecture. Study of theories, techniques, and procedures that have been shown to prevent and remedy academic skills deficits.

**EPY 8780. Internship in School Psychology. (3 or 6)** (Prerequisite: Consent of instructor). Supervised professional experience in an appropriate setting. Three hundred clock hours required for three semester hours credit.

**EPY 8794. Supervised Experiences in School Psychology: Consultation. (4)** (Prerequisites: EPY 9713, EPY 8763, and consent of instructor). Supervised consultation and intervention experiences in educational settings utilizing psychological principles and techniques in teaching/learning problems. Three hundred plus hours of supervised consultation experience.

**EPY 8890. Supervised Experiences in School Psychology: Clinic Settings. (0-6)** (Prerequisite: Consent of instructor). Supervised school psychology experiences in clinic settings utilizing psychological principles and techniques in teaching/learning problems.

**EPY 8913. Psychology of Creative Imagination. (3)** (Prerequisite: EPY 8523). A study of creative intellectual functioning and advances in thought on imagination imagery as they apply to measurement, nurture, development and related dimensions.

**EPY 8933. Integrated Psycho-Educational Assessment. (3)** (Prerequisites: EPY 8493, EPY 8723, consent of instructor). Two hours lecture, two hours practicum. Integration of assessment, interpretation, and report writing skills for intellectual, adaptive, personality, and academic instruments.

**EPY 8990. Special Topics in Educational Psychology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**EPY 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**EPY 9213. Advanced Analysis in Educational Research. (3)** (Prerequisites: EPY 6214 and EPY 8214, or equivalent course work). Three hours lecture. An examination of quantitative problem-solving methods, with special emphasis on modern techniques for investigating multivariable research problems in education.

**EPY 9313. Education Evaluation Methods. (3)** Three hours lecture. (Prerequisites: EPY 8214; EDF 9373 or equivalent course work). Introduction to evaluation contract development procedures, and planning and management of program evaluation in education and related settings.

**EPY 9263. Applied Research Seminar. (3)** (Prerequisites: EPY 6214, EDF 8363, and EDF 9373). Three hours lecture. Study of advances in thought on research approaches and doing research in educational psychology.

**EPY 9703. Contemporary, Legal, Ethical, and Professional Issues in School and Educational Psychology. (3)** (Prerequisite: consent of instructor). Three hours lecture. Psychology as a profession: Foundations of practice, roles and functions, professional issues and standards with emphasis on legal and ethical means in psychology.

**EPY 9713. Advanced Psychological Consulting: Theory and Practice. (3)** (Prerequisite: Consent of the instructor). Two hours lecture. Two hours practicum. Systematic investigation and application of psychological consultation in schools/human service settings. Consultation as applied to individuals and organizational structures. Study of research contributions.

**EPY 9723. Seminar in Contemporary School Psychology. (3)** (Prerequisite: consent of instructor). Study of current issues and problems in school psychology. Includes the synthesis/refinement of students' personal philosophy of psychological practice in human-service settings.

**EPY 9730. Doctoral Internship in School Psychology. (3 or 6)** (Prerequisite: consent of instructor). Supervised internship involving the theory and practice of evaluations, consultation, interventions, research, and related activities within a school, clinic, or other human service agency.

**ENGLISH as a SECOND LANGUAGE**

Office: ESL Center, 46 Morgan St.

Instructors Bonfanti (Coordinator), and Watkins; Lecturers Combs, Crawley, and Hutchinson

**ESL 5110. American Language and Culture I. (1-18)** (Prerequisite: TOEFL score between 475 and 499 or consent of the instructor). Credit to be arranged. An intermediate level English language course designed to improve the oral communication and literacy skills of international students. (Does not count towards any degree).

**ESL 5120. American Language and Culture II. (1-18)** (Prerequisite: ESL 5110, or TOEFL score between 500 and 524, or consent of instructor). Credit to be arranged. An advanced level English language

course designed to improve the oral communication and literacy skills of international students. (Does not count towards any degree).

**ESL 5130. English for Academic Purposes. (3-9)** (Prerequisite: ESL 5120 or TOEFL score above 525). Credit to be arranged. An English language course designed to prepare second language speakers for university level reading, writing, and oral communication assignments. (Does not count toward any degree.)

**EXPERIENTIAL LEARNING**

Office: 608 Allen Hall

**EXL 0190. Experiential Learning. (0)** (Prerequisite: Permission of Department). Non-classroom learning experience arranged through agreement of student and department; written approval required. Regis-

tration provides equivalent of full time enrollment status but no academic credit. Coordinated through Academic Affairs.

**FINANCE**

Office: 326 McCool Hall

(For departmental information, see FINANCE and ECONOMICS)

**FIN 2003. Personal Money Management. (3)** Three hours lecture. The individual's acquisition and management of an optimal personal income and expenditure pattern over a lifetime to best meet his/her financial objectives.

**FIN 2990. Special Topics in Finance. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FIN 3113. Financial Systems. (3)** (Prerequisites: EC 2113, EC 2123 (or AEC 2713) and junior standing). Three hours lecture. Study of interest rates, basic security valuation, money and capital markets, financial institutions and the roles financial institutions play in the financial markets.

**FIN 3123. Financial Management. (3)** (Prerequisites: EC 2123, ACC 2023, and BQA 2113 and junior standing). Three hours lecture. Study of objectives, tools, methods, and problems of financial management; financial analysis, planning, control, sources/uses of funds, capital budgeting decisions and working capital.

**FIN 3723. Financial Markets and Institutions. (3)** (Prerequisite: FIN 3113 or equivalent.) Three hours lecture. Study of the functions of financial markets. Major topics include interest rates, their role in securities markets and financial institutions, and interest rate risk.

**FIN 4000. Directed Individual Study.** Hours and credits to be arranged.

**FIN 4011. Banking Internship. (1)** (Prerequisite: Approval of Department). Banking topics examined by students during work semester.

**FIN 4021. Corporate Finance Internship. (1)** (Prerequisite: approval of Department). Corporate Finance topics examined by students during work semester.

**FIN 4031. Financial Services Internship. (1)** (Prerequisite: Approval of Department). Financial Services topics examined by students during work semester.

**FIN 4041. Financial Communications Internship. (1)** (Prerequisite: Approval of Department). Financial Communications topics examined by student during work semester.

**FIN 4223. Intermediate Financial Management. (3)** (Prerequisite: FIN 3123). Three hours lecture. Building on foundational concepts, this course provides a more in-depth coverage of financial analysis, valuation principles, the financial environment, capital budgeting and capital structure.

**FIN 4233. Working Capital Management. (3)** (Prerequisite: FIN 3123.) Three hours lecture. Analysis of selected problems in the short-term financial management of the firm, including cash management, investment opportunities, financing requirements, budgeting and planning.

**FIN 4243. Senior Seminar in Finance. (3)** (Prerequisites: FIN 3723 and FIN 4223). Three hours seminar. Comprehensive case study to bring out the problems involved in organizing, financing, and managing various types of business enterprises.

**FIN 4423. Investments. (3)** (Prerequisite: FIN 3123). Three hours lecture. Survey of various financial instruments and their characteristics, investor choice, and an introduction to the basics of security analysis, portfolio management, and speculative markets.

**FIN 4433. Security Analysis and Portfolio Management. (3)** (Prerequisites: FIN 4423.) Three hours lecture. Analysis of individual investments, creation and management of investment portfolios to achieve specific investor goals, and evaluation of portfolio performance.

**FIN 4723. Bank Management. (3)** (Prerequisites: FIN 3113 and FIN 3723.) Three hours lecture. Study of banking environment, functional areas of banking, and tools and techniques required to effectively manage a bank in a highly competitive, dynamic environment.

**FIN 4733. Advanced Bank Management. (3)** (Prerequisites: ACC 3203, FIN 4423, and FIN 4723.) Three hours seminar. Applications of financial management techniques to bank management decisions through experiential learning opportunities. Computer-based analysis, simulations, and written and oral presentations.

**FIN 4923/6923. International Financial Management. (3)** (Prerequisite: FIN 3123 or consent of instructor). Three hours lecture. A study of the theory and actual behavior of international financial management, foreign financial markets, exchange rate risk management, and foreign direct investments.

**FIN 4990/6990. Special Topics in Finance. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FIN 7000. Directed Individual Study.** Hours and credits to be arranged.

**FIN 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**FIN 8052. Survey of Finance. (2)** (Prerequisite: Graduate standing; ACC 8013, and BQA 8033, and EC 8043, equivalent or concurrent enrollment) Two hours lecture. Survey of financial management, analysis, planning, controls, sources/uses of funds, capital budgeting, and working capital with word processing, spreadsheet and database applications.

**FIN 8112. Capital Acquisition and Allocation. (2)** (Prerequisite: FIN 8052 or equivalent). Two hours lecture. Integration of risk and return concepts, capital structure, cash flow estimation, the capital acquisition process and capital budgeting into one framework.

**FIN 8122. Corporate Liquidity Analysis. (2)** (Prerequisite: FIN 8052 or equivalent). Two hours lecture. The role working capital plays in the viability of the firm and the financial management tools used to analyze and manage the firm's liquidity position.

**FIN 8223. Case Problems in Corporate Finance. (3)** (Prerequisites: FIN 8112 and FIN 8122 or equivalent). Three hours seminar. Analyses of financial management cases involving working capital, financial analysis, valuation concepts, risk and return, capital budgeting, cost of capital, and financial planning.

**FIN 8233. Advanced Financial Management. (3)** (Prerequisites: FIN 8112 and FIN 8122 or the equivalent). Three hours lecture. A study of the theory and application of valuation, risk return analysis, capital budgeting decisions, and capital structure. Analysis of how these decisions affect firm value.

**FIN 8313. Financial Management of Projects. (3)** (Prerequisite: FIN 3123 or equivalent). Three hours lecture. Focuses on the financial aspects of project management. Topics include capital budgeting, risk assessment, cash flow forecasting, value estimation and identification and valuation of options embedded in the project.

**FIN 8423. Portfolio Management. (3)** (Prerequisites: FIN 8112 and FIN 8122 or the equivalent). Three hours lecture. The application of contemporary investment theory for decision-making purposes in portfolio management, and the formulation of portfolio policies for different types of investors.

**FIN 8723. Financial Institutions Management. (3)** (Prerequisites: FIN 8112 and FIN 8122, or equivalent). Three hours seminar. Cases and readings on the requirements and potential challenges of man-

aging financial institutions in a competitive and rapidly changing environment. Computer simulations.

**FIN 8733. Financial Markets, Rates and Flows. (3)** (Prerequisites: FIN 8112 and FIN 8122 or equivalent). Three hours lecture. An analysis of money and capital market instruments; a study of interest rates and financial flows; the effect of public policy on credit conditions.

**FIN 8990. Special Topics in Finance. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FIN 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**FIN 9233. Seminar in Corporate Finance. (3)** (Prerequisites: FIN 8233 or the equivalent.) Doctoral seminar. Analysis and discussion of the literature dealing with topics in corporate finance. Also, students prepare and present research projects.

**FIN 9433. Seminar in Portfolio Theory. (3)** (Prerequisites: FIN 8423 or equivalent.) Doctoral seminar. Analysis and discussion of the literature dealing with topics in portfolio theory and management. Also, students prepare and present research projects.

**FIN 9733. Seminar in Financial Markets and Institutions. (3)** (Prerequisites: FIN 8733 or equivalent.) Doctoral seminar. Analysis and discussion of the literature dealing with topics in financial markets and institutions. Students prepare and present research projects.

## Department of FOREIGN LANGUAGES

Office: 300 Lee Hall

Professors Emplaincourt (Head), Buehler, A. Lopez, Wiltrout, Wolverson  
Associate Professors Jordan and Robbins-Herring;  
Assistant Professors Krol, Kunz, and Lestrade;  
Instructors Garma, Little, and Vozzo.

A year's study of the same foreign language in high school will normally be considered the equivalent of one semester's work at MSU for the purpose of determining appropriate placement; no credit hours are earned for MSU courses bypassed in this manner. Students with two or more years of the same foreign language in high school are encouraged to take the Computerized Placement Tests (CPT) in French, German, and Spanish, and the Placement Tests (PT) Japanese, Latin, and Russian administered by the Department, enabling them to earn up to 8 non-transferable MSU credit hours; the tests are free of charge and the credits earned are entered on the student's transcript upon recommendation of the Head of Foreign Languages Department. These tests can be taken during MSU Senior Invitational and MSU Spring Discovery by high school seniors; during summer orientations by entering freshman, and during the add/drop period of fall and spring semesters by beginning freshman. Foreign students may not register for credit in elementary and intermediate courses of their native language. All inquiries should be addressed to the Department Head.

**FL 2453. The Icelandic Sagas. (3)** (Prerequisite: Completion of freshman composition). Three hours lecture. A survey, in English, of the sagas and their relationship to history, mythology, and other medieval literatures. (Same as EN 2453).

**FL 2990. Special Topics in Foreign Language. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FL 3123. English Words Derived from Greek and Latin. (3)** (Prerequisite: Completion of freshman English requirements or consent of instructor). Three hours lecture. A study of Greek and Latin prefixes, suffixes, and root words used in English words; no knowledge of Greek or Latin is necessary.

**FL 3203. Introduction to Historical and Applied Linguistics. (3)** (Prerequisite: One year of a foreign language or equivalent). Three hours lecture. The origins, development, and basic linguistic features of the Germanic and Romance languages.

**FL 3313. Junior/Senior Composition. (3)** (Prerequisites: EN 1113, FLF/G/S 2143 or consent of instructor). Three hours lecture. Advanced composition course to enhance the student's ability to write clear, logical English prose on foreign language topics. Required of all majors.

**FL 4000. Directed Individual Study.** Hours and credits to be arranged.

**FL 4013/6013. Major Themes or Movements in Comparative Germanic and Romance Literatures. (3)** (Prerequisite: Junior standing or consent of instructor). An investigation of major themes or movements common to Germanic and Romance literatures, such as heroes and heroism, Existentialism, or perceptions of love.

**FL 4123/6123. Scandinavian Mythology. (3)** (Prerequisite: Junior standing or consent of the instructor). Three hours lecture. A survey of the myths and legends of Scandinavia in English translation. (Same as REL 4123/6123).

**FL 4143/6143. Classical Mythology. (3)** Three hours lecture. Myths and legends of Greece and Rome and their use in literature and the arts through the ages. (Same as REL 4143/6143)

**FL 4613/6613. Phonetics and Phonology. (3)** Three hours lecture. An introduction to the study of Phonetics and Phonology; various phonological theories and models are presented.

**FL 4623/6623. The Vikings. (3)** (Prerequisite: Junior standing or consent of the instructor). Three hours lecture. A survey in English of the Vikings and the Viking Age. (Same as HI 4623/6623).

**FL 4990/6990. Special Topics in Foreign Language. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses.

(Courses limited to two offerings under one title within two academic years).

**FL 8103. Seminar in Bibliography and Research Methods. (3)** Three hours lecture. An advanced course required of all graduate foreign language majors.

**FL 8990. Special Topics in Foreign Language. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## FRENCH

**FLF 1114. French I. (4)** Three hours lecture. One recitation. An introduction to conversational French.

**FLF 1124. French II. (4)** (Prerequisite: FLF 1114 or equivalent). Three hours lecture. One recitation. Conversational French. Reading of graded text.

**FLF 2125. Accelerated Intermediate French. (5)** (Prerequisite: FLF 1124 or equivalent and consent of instructor). Five hours lecture. Rapid review of French grammar; intensive oral-aural practice; reading of intermediate texts. The equivalent of FLF 2133 and FLF 2143. Conducted mainly in French.

**FLF 2133. French III. (3)** (Prerequisite: FLF 1124 or equivalent). Three hours lecture. Rapid review of French grammar; oral-aural practice; reading of intermediate texts.

**FLF 2143. French IV. (3)** (Prerequisite: FLF 2133 or equivalent). Three hours lecture. Oral-aural practice; reading of intermediate texts.

**FLF 2183. Honors French III. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors program of FLF 2133, Intermediate French III.

**FLF 2193. Honors French IV. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors program of FLF 2143, French IV.

**FLF 2990. Special Topics in French. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLF 3114. Advanced French. (4)** (Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture and laboratory. Required of all majors. Advanced instruction in all aspects of modern French.

**FLF 3124. Advanced French. (4)** (Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture and laboratory. Required of all majors. A continuation of FLF 3114.

**FLF 3143. French Civilization. (3)** (Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture. Illustrated survey of French cultural heritage.

**FLF 3313. Business French I. (3)** (Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture. The French language as used in business practices and marketing; emphasis on acquisition and application of French commercial terminology in import/export correspondence.

**FLF 3323. Business French II. (3)** (Prerequisite: FLF 2143, FLF 2125 or equivalent or consent of instructor). Three hours lecture. The French language as used in exchange controls, the Bourse, the banks; acquisition of French business terminology for written and oral expression.

**FLF 3513. Survey of French Literature. (3)** (Prerequisite: FLF 2143 or FLF 2125 or equivalent or consent of instructor). Three hours

lecture. Required of all majors. A survey of French literature from its origin to the 18th century.

**FLF 3523. Survey of French Literature. (3)** (Prerequisite: FLF 2143 or FLF 2125 or equivalent or consent of instructor). Three hours lecture. Required of all majors. A survey of French literature from the 18th century to the present.

**FLF 4000. Directed Individual Study.** Hours and credits to be arranged.

**FLF 4063/6063. French Drama of the 19th Century. (3)** (Prerequisite: FLF 3523 or consent of instructor). Three hours lecture. Reading of works of outstanding writers and discussion of literary currents of the century.

**FLF 4073/6073. French Drama of the 20th Century. (3)** (Prerequisite: FLF 3523 or consent of instructor). Three hours lecture. Reading of works of outstanding writers and discussion of literary currents of the century.

**FLF 4083/6083. Survey of French Lyric Poetry. (3)** (Prerequisite: 3513). Three hours lecture. Reading and interpretation of masterpieces. Discussion of literary currents and personalities of the century.

**FLF 4093/6093. French Novel and Short Story of the 19th Century. (3)** (Prerequisite: FLF 3523 or consent of instructor). Three hours lecture. Reading of selected masterpieces. Discussion of literary currents and personalities of the century.

**FLF 4103/6103. French Novel and Short Story of the 20th Century. (3)** (Prerequisite: FLF 3523 or consent of instructor). Three hours lecture. Reading and critical evaluation of modern French novels and short stories of various literary schools.

**FLF 4113/6113. French Stylistics. (3)** (Prerequisites: FLF 3114, 3513 or consent of instructor). Three hours lecture. Advanced instruction in written and oral communication.

**FLF 4143/6143. French Classicism. (3)** (Prerequisite: FLF 3513). Three hours lecture. Reading and discussion of selected texts in the novel, drama, and criticism of the 17th century.

**FLF 4153/6153. French Classicism. (3)** (Prerequisite: FLF 3513 or consent of instructor). Three hours lecture. A continuation of FLF 4143/6143.

**FLF 4213/6213. Historical Grammar. (3)** (Prerequisites: FLF 3114 and 3124 or consent of instructor). A history of the French language from the *Strasbourg Oaths* to Montaigne.

**FLF 4313/6313. Intensive Advanced French for Teachers. (3)** (Prerequisites: Teacher certification in French or consent of instructor). A short term course in the contrastive structures of French and English. Summer only.

**FLF 4990/6990. Special Topics in French. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLF 6563. French Readings for Graduates I. (3)** Three hours lecture. A service course for students desiring a reading knowledge of French for research or advanced degrees

**FLF 6573. French Readings for Graduates II. (3)** (Prerequisite: FLF 6563 or consent of instructor). Three hours lecture. A service course for non-majors who desire a reading knowledge of French for research or advanced degrees.

**FLF 7000. Directed Individual Study.** Hours and credits to be arranged.

**FLF 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**FLF 8063. Seminar in French Drama of the 19th Century. (3)** (Prerequisite: Graduate standing).

**FLF 8073. Seminar in French Drama of the 20th Century. (3)** (Prerequisite: Graduate standing).

**FLF 8093. Seminar in the French Novel of the 19th Century. (3)** (Prerequisite: Graduate standing).

**FLF 8103. Seminar in the French Novel of the 20th Century. (3)** (Prerequisite: Graduate standing).

**FLF 8113. Seminar in French Classical and Neo-Classical Comedy. (3)** (Prerequisite: Graduate standing).

**FLF 8123. Seminar in the French Novel and Short Story of the Renaissance and Classical Period. (3)** (Prerequisite: Graduate standing).

**FLF 8213. Old French. (3)** (Prerequisite: Graduate standing). A philological study of the development of Old Parisian French from Vulgar Latin.

**FLF 8223. Seminar in French Classical and Neo-Classical Tragedy. (3)** (Prerequisite: Graduate standing).

**FLF 8990. Special Topics in French. (1-9)** (Prerequisite: Graduate standing). Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## GERMAN

**FLG 1114. German I. (4)** Three hours lecture. One recitation. An introduction to conversational German.

**FLG 1124. German II. (4)** (Prerequisite: FLG 1114). Three hours lecture. One recitation. Conversational German. Reading of graded texts.

**FLG 2125. Accelerated Intermediate German. (5)** (Prerequisite: FLG 1124 or equivalent and consent of instructor). Five hours lecture. Rapid review of German grammar; intensive oral-aural practice; reading of intermediate texts. The equivalent of FLG 2133 and FLG 2143. Conducted mainly in German.

**FLG 2133. German III. (3)** (Prerequisite: FLG 1124). Three hours lecture. Rapid review of German grammar; oral-aural practice; reading of intermediate texts.

**FLG 2143. German IV. (3)** (Prerequisite: FLG 2133). Three hours lecture. Oral-aural practice; reading of intermediate texts.

**FLG 2183. Honors German III. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors program of FLG 2133, Intermediate German III.

**FLG 2193. Honors German IV. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors program of FLG 2143, Intermediate German IV.

**FLG 2990. Special Topics in German. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLG 3114. Advanced German. (4)** (Prerequisite: FLG 2143 or consent of instructor). Three hours lecture and laboratory. Required of all majors. Advanced instruction in all aspects of modern German.

**FLG 3124. Advanced German. (4)** (Prerequisite: FLG 2143 or consent of instructor). Three hours lecture and laboratory. Required of all majors. A continuation of FLG 3114.

**FLG 3143. German Civilization. (3)** (Prerequisite: FLG 2143 or equivalent.) Three hours lecture. A survey of German cultural heritage.

**FLG 3153. Modern German Culture. (3)** (Prerequisite: FLG 2143 or equivalent). Three hours lecture. A survey of German culture and life today.

**FLG 3313. Business German I. (3)** (Prerequisites: FLG 2143). Three hours lecture. The German language as used in business; emphasis on acquisition and application of German commercial terminology on import/export correspondence.

**FLG 3323. Business German II. (3)** (Prerequisite: FLG 2143). Three hours lecture. The German language as used in the German stock market, trade, and exchange controls; acquisition and application of written and oral German business terminology.

**FLG 3513. Survey of German Literature. (3)** (Prerequisite: FLG 2143). Required of all majors. A survey of German literature from its origin to 1770.

**FLG 3523. Survey of German Literature. (3)** (Prerequisite: FLG 2143). Three hours lecture. Required of all majors. A study of German literature from 1700 to the present.

**FLG 4000. Directed Individual Study.** Hours and credits to be arranged.

**FLG 4113/6113. German Stylistics. (3)** (Prerequisite: FLG 3124). Three hours lecture. Advanced course in expository writing and oral communication.

**FLG 4153/6153. Applied Linguistics: German Phonology and Morphology. (3)** (Prerequisites: FLG 3124 or consent of the instructor). Three hours lecture. Contrastive analysis of German and English phonology and morphology. Practice in and teaching of problems in German phonological and grammatical systems.

**FLG 4163/6163. History of the German Language. (3)** (Prerequisite: FLG 3124). Three hours lecture. The relationship of High German to the parent Indo-European and to the remaining Germanic dialects; linguistic development from the earliest times to the present.

**FLG 4193/6193. Introduction to Middle High German. (3)** (Prerequisite: FLG 3513 or consent of the instructor). Three hours lecture. Phonology and morphology of the High German dialects of the High Middle Ages. Beginning readings of selected authors.



**FLG 4413/6413. Early German Literature. (3)** (Prerequisite: FLG 3513 or instructor's consent). Three hours lecture. German literature from the beginning to the end of the Middle Ages.

**FLG 4423/6423. German Literature of the Age of Luther. (3)** (Prerequisite: FLG 3513 or equivalent). Three hours lecture. Reading and discussion of selected texts with an emphasis on Humanism and Baroque.

**FLG 4433/6433. Enlightenment and Storm and Stress. (3)** (Prerequisite: FLG 3513 or equivalent). Three hours lecture. Reading and discussion of selected texts with an emphasis on Lessing and young Goethe.

**FLG 4443/6443. German Classicism and Romanticism. (3)** (Prerequisite: FLG 3513). Three hours lecture. Reading and discussion of selected texts from the period 1787 to 1815.

**FLG 4453/6453. 19th Century German Literature. (3)** (Prerequisite: FLG 3513 or equivalent). Three hours lecture. Reading and discussion of selected prose, dramas, and lyric poetry.

**FLG 4463/6463. German Drama of the 20th Century. (3)** (Prerequisite: FLG 3523). Three hours lecture. Reading of works of outstanding writers and discussion of literary currents of the century.

**FLG 4473/6473. German Novel and Short Story of the 20th Century. (3)** (Prerequisite: FLG 3523). Three hours lecture. Reading and critical evaluation of modern German novels and short stories of various literary schools.

**FLG 4483/6483. Survey of German Lyric Poetry. (3)** (Prerequisite: FLG 3513). Three hours lecture. Reading and interpretation of masterpieces of German lyric poetry and poetic theory from the Middle Ages to the present.

**FLG 4990/6990. Special Topics in German. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLG 4513/6513. Nietzsche: Literature and Values. (3)** Comprehensive analysis of Friedrich Nietzsche's (1844-1900) influential works, emphasizing his critique of Western values and theories of creativity. Taught in English.

**FLG 6563. German Readings for Graduates I. (3)** Three hours lecture. A service course for non-majors who desire a reading knowledge of German for research or advanced degrees.

**FLG 6573. German Readings for Graduates II. (3)** (Prerequisite: FLG 6563 or consent of instructor). Three hours lecture. A service course for non-majors who desire a reading knowledge of German for research or advanced degrees.

**FLG 7000. Directed Individual Study.** Hours and credits to be arranged.

**FLG 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**FLG 8213. Seminar in Middle High German. (3)** (Prerequisite: Graduate standing).

**FLG 8413. German Literature of the Middle Ages. (3)** (Prerequisite: Graduate standing). Three hours lecture. A study of German literary masterpieces and movements of the Old High German and Middle High German periods.

**FLG 8423. German Literature of the Reformation and Baroque. (3)** Three hours lecture. A study of German literary works and movements of the Reformation and Baroque periods.

**FLG 8433. Seminar in German Drama of the Classical Period. (3)** (Prerequisite: Graduate standing).

**FLG 8453. Seminar in German Drama of the 19th Century. (3)** (Prerequisite: Graduate standing).

**FLG 8463. Seminar in German Drama of the 20th Century. (3)** (Prerequisite: Graduate standing).

**FLG 8473. Seminar in the German Novel and Short Story of the 20th Century. (3)** (Prerequisite: Graduate standing).

**FLG 8990. Special Topics in German. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## GREEK

**FLH 1113. Greek I. (3)** Three hours lecture. An introduction to Biblical and Classical Greek.

**FLH 1123. Elementary Ancient Greek II. (3)** Three hours lecture. A continuation of FLH 1113.

**FLH 2133. Greek III. (3)** (Prerequisite: FLH 1123 or equivalent). Three hours lecture. Introduction to ancient Greek literature. Selected readings from Homer, Herodotus, and Plato.

**FLH 2143. Greek IV. (3)** (Prerequisite: FLH 2133 or equivalent). Three hours lecture. Introduction to ancient Greek literature. Selected readings from Aristotle, the New Testament, and the Church Fathers.

**FLH 2990. Special Topics in Greek. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLH 4990/6990. Special Topics in Greek. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLH 8990. Special Topics in Greek. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## JAPANESE

**FLJ 1114. Japanese I. (4)** Three hours lecture. One recitation. An introduction to conversational Japanese.

**FLJ 1124. Japanese II. (4)** (Prerequisite: FLJ 1114 or equivalent). Three hours lecture. One recitation. An introduction to conversational Japanese.

**FLJ 2133. Japanese III. (3)** (Prerequisite: FLJ 1124 or equivalent). Three hours lecture. Rapid review of Japanese grammar; oral-aural practice; reading of intermediate texts.

**FLJ 2143. Japanese IV. (3)** (Prerequisite: FLJ 2133 or equivalent). Three hours lecture. Oral-aural practice; reading and discussion of intermediate texts.

**FLJ 4000. Directed Individual Study.** Hours and credits to be arranged.

**FLJ 4990/6990. Special Topics in Japanese. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLJ 8990. Special Topics in Japanese. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## LATIN

**FLL 1113. Latin I. (3)** Three hours lecture. An introduction to the Latin language.

**FLL 1123. Latin II. (3)** (Prerequisite: FLL 1113 or equivalent). Three hours lecture. Grammar; elementary reading.

**FLL 2133. Latin III. (3)** (Prerequisite: FLL 1123 or equivalent). Three hours lecture. Review of Latin grammar; reading of intermediate texts.

**FLL 2143. Latin IV. (3)** (Prerequisite: 2133 or equivalent). Three hours lecture. Reading of intermediate texts.

**FLL 2990. Special Topics in Latin. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLL 4000. Directed Individual Study.** (Prerequisite: Junior standing). Hours and credits to be arranged.

**FLL 4990/6990. Special Topics in Latin. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLL 7000. Directed Individual Study.** Hours and credits to be arranged.

**FLL 8990. Special Topics in Latin. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## RUSSIAN

**FLR 1114. Russian I. (4)** Three hours lecture. One recitation. An introduction to conversational Russian.

**FLR 1124. Russian II. (4)** (Prerequisite: FLR 1114). Three hours lecture. One recitation. Conversational Russian. Reading of graded texts.

**FLR 2133. Russian III. (3)** (Prerequisite: FLR 1124). Three hours lecture. Rapid review of Russian grammar; oral-aural practice; reading of intermediate texts.

**FLR 2143. Russian IV. (3)** (Prerequisite: FLR 2133). Three hours lecture. Oral-aural practice; reading of intermediate texts.

**FLR 2153. Scientific Russian. (3)** (Prerequisite: FLR 2143). Three hours lecture. Methods toward understanding scientific Russian texts and readings from prominent Russian scientists.

**FLR 2990. Special Topics in Russian. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLR 3114. Advanced Russian I. (4)** (Prerequisite: FLR 2143 or consent of instructor). Three hours lecture. Three hours laboratory. Advanced instruction in all aspects of modern Russian.

**FLR 3124. Advanced Russian II. (4)** (Prerequisite: FLR 3114 or consent of instructor). Three hours lecture. Three hours laboratory. A continuation of FLR 3114.

**FLR 3143. Russian Civilization. (3)** (Prerequisite: FLR 2143). Three hours lecture. A survey of Russian cultural heritage.

**FLR 3513. Survey of Russian Literature I. (3)** (Prerequisite: FLR 2143). Three hours lecture. A survey of Russian literature from its origin to 1835.

**FLR 3523. Survey of Russian Literature II. (3)** (Prerequisite: FLR 2143). Three hours lecture. A survey of Russian literature from 1835 to the present.

**FLR 4000. Directed Individual Study.** Hours and credits to be arranged.

**FLR 4990/6990. Special Topics in Russian. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLR 8990. Special Topics in Russian. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## SPANISH

**FLS 1114. Spanish I. (4)** Three hours lecture. One recitation. An introduction to conversational Spanish.

**FLS 1115. Accelerated Elementary Spanish. (5)** Five hours lecture. Two hours laboratory. Introduction to conversational Spanish for the qualified and motivated student approved by the department. The equivalent of FLS 1114 and 1124. Conducted mainly in Spanish.

**FLS 1124. Spanish II. (4)** (Prerequisite: FLS 1114 or equivalent). Three hours lecture. One recitation. Conversational Spanish. Reading of graded texts.

**FLS 1215. Accelerated Intermediate Spanish. (5)** (Prerequisite: FLS 1124 or equivalent and consent of instructor). Five hours lecture. Rapid review of Spanish grammar; intensive oral-aural practice; reading of intermediate texts. The equivalent of FLS 2133 and FLS 2143. Conducted mainly in Spanish.

**FLS 2133. Spanish III. (3)** (Prerequisite: FLS 1124 or equivalent). Three hours lecture. Rapid review of Spanish grammar; oral-aural practice; reading of intermediate texts.

**FLS 2143. Spanish IV. (3)** (Prerequisite: FLS 2133 or equivalent). Three hours lecture. Oral-aural practice; reading of intermediate texts.

**FLS 2183. Honors Spanish III. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors program of FLS 2133, Spanish III.

**FLS 2193. Honors Spanish IV. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors program of FLS 2143, Spanish IV.

**FLS 2990. Special Topics in Spanish. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLS 3111. Advanced Spanish Laboratory I. (1)** (Prerequisite: FLS 2143 or FLS 2125). Three hours laboratory. A laboratory course to accompany FLS 3313 or to be taken separately. Required of all majors.

**FLS 3113. Advanced Spanish I. (3)** (Prerequisite: FLS 2143 or FLS 2125). Three hours lecture. Required of all majors. Advanced instruction in all aspects of modern Spanish. Required of all majors.

**FLS 3121. Advanced Spanish Laboratory II. (1)** (Prerequisite: FLS 2143 or consent of department). Three hours laboratory. A laboratory course to accompany FLS 3233 or to be taken separately. Required of all majors.

**FLS 3143. Hispanic Civilization. (3)** (Prerequisite: FLS 2143 or FLS 2125). Three hours lecture. Illustrated survey of Hispanic cultural heritage.

**FLS 3233. Advanced Spanish II. (3)** (Prerequisite: FLS 3113 or consent of instructor). Three hours lecture. Required of all majors. A continuation of FLS 3113.

**FLS 3313. Business Spanish I. (3)** (Prerequisite: FLS 2143 or FLS 2125). Three hours lecture. Emphasis on the acquisition and usage of Spanish business terminology and business practices used in foreign trade.

**FLS 3323. Business Spanish II. (3)** (Prerequisite: FLS 2143 or FLS 2125). Three hours lecture. Designed to provide a functional command of conversational and written Spanish for business correspondence, travel, investments and international business practices.

**FLS 3513. Survey of Spanish Literature. (3)** (Prerequisite: FLS 2143 or FLS 2125). Three hours lecture. Required of all B.A. majors. A survey of Spanish literature from its origin to the 18th century.

**FLS 3523. Survey of Spanish Literature. (3)** (Prerequisite: FLS 2143 or FLS 2125). Three hours lecture. Required of all B.A. majors. A survey of Spanish literature from the 18th century to the present.

**FLS 4000. Directed Individual Study.** Hours and credits to be arranged.

**FLS 4223/6223. Spanish Novel of the Golden Age. (3)** (Prerequisite: FLS 3513). Three hours lecture. A study of the picaresque novel and the short novel of the Golden Age.

**FLS 4233/6233. Cervantes. (3)** (Prerequisite: FLS 3513). Three hours lecture. A critical reading of *Don Quixote*. Lectures and reports on the life and works of Cervantes.

**FLS 4253/6253. Spanish Novel and Short Story of the 19th Century. (3)** (Prerequisite: FLS 3513). Three hours lecture. The Spanish novel and short story from the Romantic period to the Generation of 1898.

**FLS 4263/6263. Spanish Novel and Short Story of the 20th Century. (3)** (Prerequisite: FLS 3513). Three hours lecture. Reading and critical evaluation of selected Spanish novels and short stories from the Generation of 1898 to the present.

**FLS 4283/6283. The Contemporary Spanish-American Novel and Short Story. (3)** (Prerequisite: FLS 3523 or consent of instructor). Three hours lecture. A study of major contemporary Spanish-American novels and short stories.

**FLS 4323/6323. Spanish Drama of the Golden Age. (3)** (Prerequisite: FLS 3513). Three hours lecture. A study of dramatic works of Lope de Vega, Tirso de Molina, Calderon, and minor dramatic writers of the 17th century.

**FLS 4333/6333. Spanish Drama of the 19th Century. (3)** (Prerequisite: FLS 3513). Three hours lecture. Spanish Drama from the Romantic period to the Generation of 1898.

**FLS 4433/6433. Intensive Advanced Spanish for Teachers. (3)** (Prerequisite: Teacher certification in Spanish or consent of instructor). A short term course in the contrastive structures of Spanish and English. Summer only.

**FLS 4343/6343. Spanish Drama of the 20th Century. (3)** (Prerequisite: FLS 3513). Three hours lecture. Spanish drama from the Generation of 1898 to the present.

**FLS 4423/6423. Survey of Spanish Lyric Poetry. (3)** (Prerequisite: FLS 3513). Three hours lecture. Reading and interpretation of masterpieces of Spanish lyric poetry and poetic theory from the Middle Ages to the present.

**FLS 4443/6443. Modernismo. (3)** (Prerequisite: FLS 3513 or consent of instructor). Three hours lecture. A survey of Modernismo in Spanish-American literature (1888-1916).

**FLS 4523/6523. The Renaissance. (3)** (Prerequisite: FLS 3513). Three hours lecture. Spanish literature and thought of the Renaissance.

**FLS 4543/6543. Survey of Spanish-American Literature. (3)** (Prerequisite: FLS 3513). Three hours lecture. A study of representative authors and literary movements up to Modernism.

**FLS 4553/6553. Survey of Spanish-American Literature. (3)** (Prerequisite: FLS 3523). Three hours lecture. A study of Spanish-American literature from the period of Modernism to the present.

**FLS 4623/6623. Spanish Stylistics. (3)** (Prerequisites: FLS 3113 and FLS 3233, or consent of instructor). Three hours lecture. Advanced course in the art of writing and speaking.

**FLS 4633/6633. Introduction to Spanish Linguistics. (3)** (Prerequisites: FLS 3233 or consent of instructor). Three hours lecture. Introduction to linguistic analyses and their application to the syntactic, morphological, semantic, phonological, historical, and sociolinguistic aspects of the Spanish language.

**FLS 4643/6643. Spanish Phonology. (3)** (Prerequisite: FLS 3233 or consent of instructor). Three hours lecture. Introduction to the articulatory classification of Spanish sounds. Discussion of the mental or-

ganization of these sounds, and the processes which transform them during speech.

**FLS 4653/6653. History of the Spanish Language. (3)** (Prerequisite: FLS 3513). Three hours lecture. The history of the development of the Spanish language from its origins to the present.

**FLS 4990/6990. Special Topics in Spanish. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FLS 6563. Spanish Readings for Graduates I. (3)** Three hours lecture. A service course for students desiring a reading knowledge of Spanish for research or advanced degrees.

**FLS 6573. Spanish Readings for Graduates II. (3)** (Prerequisite: FLS 6563 or consent of instructor). Three hours lecture. A service course for non-majors who desire a reading knowledge of Spanish for research or advanced degrees.

**FLS 7000. Directed Individual Study.** Hours and credits to be arranged.

**FLS 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**FLS 8223. Seminar in the Picaresque Novel. (3)** (Prerequisite: Graduate standing).

**FLS 8253. Seminar in the Novel of the 19th Century. (3)** (Prerequisite: Graduate standing).

**FLS 8263. Seminar in the Novel of the 20th Century. (3)** (Prerequisite: Graduate standing).

**FLS 8283. The Contemporary Spanish-American Novel and Short Story. (3)** (Prerequisite: Graduate standing). Three hours lecture. A study of major contemporary Spanish-American novels and short stories.

**FLS 8323. Seminar in the Drama of the Golden Age. (3)** (Prerequisite: Graduate standing).

**FLS 8333. Seminar in the Drama of the 19th Century. (3)** (Prerequisite: Graduate standing).

**FLS 8343. Seminar in the Drama of the 20th Century. (3)** (Prerequisite: Graduate standing).

**FLS 8443. Modernismo. (3)** (Prerequisite: Graduate standing). Three hours lecture. A study of the most relevant modernists and their works (1888-1916).

**FLS 8513. Spanish Literature of the Middle Ages. (3)** (Prerequisite: FLS 8663). Three hours lecture. A study of Spanish literary masterpieces and movements from *Poema del Cid* to the 16th Century.

**FLS 8663. Old Spanish. (3)** (Prerequisite: Graduate standing). Three hours lecture. A philological study of the development of Old Spanish from Vulgar Latin. Reading of texts.

**FLS 8990. Special Topics in Spanish. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Department of FORESTRY

Office: 105 Thompson Hall

Professors Belli, Daniels, Dicke, Ezell, Hodges\*, Hughes, Land, Matney, Richards (head), Sizemore\*, Stanturf\*, Stuart, and Trauggott; Associate Professors Bonner\*, Dean\*, Evans, Grace, Grado, Munn, Parker, Roberts, Schultz, and Vozzo\*\*, Assistant Professors Cooke\*, Coleman\*, Connor\*, Duzan\*, Gaddis, Grebner, Londo, and Roberts

**FO 1101. Forest Resources Survey. (1)** One hour lecture. Survey of the professional resource manager's role and career opportunities in providing forest-based goods and services. Not open to Forest Resources majors with senior standing.

**FO 2111. Dendrology Laboratory. (1)** (Corequisite: FO 2112). Four hours laboratory. Field exercises to promote the recognition and identification of trees and other woody plants.

**FO 2112. Dendrology. (2)** (Prerequisite: BIO 1203; Corequisite: FO 2111). Two hours lecture. Introduction to the identification and systematic classification of trees and other woody plants.

**FO 2213. Forest Measurements. (3)** (Prerequisite: ST 2113 or equivalent). Three hours lecture. Principles of measurement for standing and felled trees. Inventory and sampling theory for forested lands.

**FO 2990. Special Topics in Forestry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FO 3012. Introduction to Forest Communities. (2)** (Prerequisites: PSS 3301, PSS 3303, FO 2112, FO 2111). Field exercises to gain practical knowledge of soil-geology-ecology interrelationships through trips to various physiographic regions.

**FO 3015. Forest Description and Analysis. (4)** (Prerequisites: FO 2213). Field and laboratory exercises to gain practical experience with forest and land measurement techniques and equipment. Mapping inventory, and analysis of forested tracts.

**FO 3101. Computer Application for Forest Resources Laboratory. (1)** (Co-requisite: FO 3102). Two hours laboratory. Practice and demonstration of general and professional software packages used in upper level courses and professional settings in Forest Resources.

**FO 3102. Computer Applications for Forest Resources. (2)** (Prerequisite: Three hours of courses in the School of Forest Resources or consent of instructor. Co-requisite: FO 3101). Two hours lecture. Application of microcomputer concepts in forest resources with emphasis in Forestry, and general and professional software packages in professional settings.

**FO 3113. Forest Recreation Management. (3)** Three hours lecture. Studies of the management of forest resources for outdoor recreation.

**FO 3123. Forest Ecology and the Global Environment. (3)** (Prerequisite: Three hours of courses in the College of Forest Resources or consent of instructor. Co-requisite: FO 3101). Three hours lecture. Intro-

**FO 3201. Forest Fire Laboratory. (1)** (Corequisite: FO 3202). Four hours laboratory on alternate weeks. Field applications and demonstrations of fire control and management techniques that complement theory learned in FO 3202.

**FO 3202. Forest Fire. (2)** (Corequisite: FO 3201). Two hours lecture. Forest fire control and use. Aspects of fire effects, prevention, detection, suppression and the use of prescribed burning in forest management.

**FO 4000. Directed Individual Study.** Hours and credits to be arranged.

**FO 4113/6113. Forest Resource Economics. (3)** (Prerequisites: AEC 2713 or equivalent). Three hours lecture. Basic principles of forest resource valuation; economics applied to production, conversion, marketing and consumption of forest products and benefits.

**FO 4121/6121. Principles of Silviculture Laboratory. (1)** (Corequisite: FO 4123/6123). Four hours laboratory. Investigative field and laboratory exercises used to complement concepts presented in FO 4123/6123, develop interpretive abilities, and improve reporting skills.

**FO 4123/6123. Principles of Silviculture. (3)** (Prerequisite: FO 3012; corequisite: FO 4121/6121). Three hours lecture. Natural principles governing establishment, development, and functioning of forest ecosystems. Includes ecology, genetics, physiology, tree growth, reproduction, site, stand dynamics, energetics, hydrology, nutrition, and succession.

**FO 4213/6213. Forest Biometrics. (3)** (Prerequisite: FO 3102, FO 3101, and FO 3015). Three hours lecture. Applications of mensurational and statistical principles and techniques in determination of forest growth and yield. Advanced topics of forest resource inventory.

**FO 4221/6221. Practice of Silviculture Laboratory. (1)** (Prerequisite: FO 4123/6123 or WF 4223; corequisite: FO 4223/6223). Four hours laboratory. Application of silviculture practices and operations under given forest land management objectives.

**FO 4223/6223. Practice of Silviculture. (3)** (Prerequisite: FO 4123/6123, FO 4121/6121 or WF 3133 and WF 4223; corequisite: FO 4221/6221). Three hours lecture. Manipulation to obtain desired reproduction and to attain optimum development under given forest land management objectives.

\* Adjunct.

**FO 4231/6231. Forest Operations and Harvesting Laboratory. (1)** (Corequisite: FO 3015). Four hours laboratory. Investigative field and laboratory exercises used to complement concepts presented in FO 4233/6233.

**FO 4233/6233. Forest Operations and Harvesting. (2)** (Prerequisites: FO 3015, FO 4231/6231). Three hours lecture. Study of practical, managerial, and logistic considerations associated with harvesting and other forest operations, as well as their social, environmental and legal influences.

**FO 4241/6241. Reforestation and Tree Improvement Laboratory. (1)** (Corequisite: FO 4242/6242). Three hours laboratory. Field and indoor exercises, and field trips to a seed orchard and nursery, are used to illustrate methods and concepts presented in FO 4242/6242.

**FO 4242/6242. Reforestation and Tree Improvement. (2)** (Prerequisite: FO 4123/6123, FO 4121/6121). Two hours lecture. Biology of forest reproduction. Methods of genetic improvement, vegetative propagation, and technology, and nursery management. Deployment, planting, and culture for plantation establishment.

**FO 4253/6253. Timber Procurement. (3)** (Prerequisites: FO 4231/6231, FO 4233/6233). Lectures and field exercises dealing with the problems of timber procurement to include planning for harvest, methods of handling and transport, legal and safety considerations.

**FO 4311/6311. Spatial Technologies in Natural Resources Management Laboratory. (1)** (Prerequisites: FO 3015 or consent of instructor; corequisite: FO 4313/6313). Three hours laboratory. Fundamentals of scale, area, height and stand volume determinations from aerial imagery; planimetric and topographic mapping; image interpretation; GPS and GIS; applications to natural resources.

**FO 4313/6313. Spatial Technologies in Natural Resources Management. (2)** (Prerequisite: FO 3015 or consent of instructor; corequisite: FO 4311/6311). Three hours lecture. Fundamentals of scale, area, height, and stand volume determinations from aerial imagery; planimetric and topographic mapping; image interpretation; GPS and GIS; applications to natural resource inventory.

**FO 4321/6321. Forest Resource Management Laboratory. (1)** (Corequisite: FO 4323/6323). Four hours laboratory. Practical application of forest resource management principles, emphasizing identification and analysis of resource management problems. Specific topics include problem identification, financial analysis, and mathematical programming.

**FO 4323/6323. Forest Resource Management. (3)** (Prerequisites: FO 4213/6213, FO 4113/6113, FO 4233/6233, FO 4231/6231; Corequisite: FO 4321/6321). Three hours lecture. Application of economic principles and decision-making techniques to forest management problems. Topics include advanced forest valuation, timber taxation, stand-level management, and harvest scheduling.

**FO 4343/6343. Forest Administration and Organization. (3)** Three hours lecture. Hierarchy and land structuring of forest organizations. Legal aspects of administering forest land holdings.

**FO 4353/6353. Forestry Law. (3)** (Prerequisite: Junior standing or consent of instructor). Three hours lecture. A comprehensive study of the laws relating to forestry and forest operations with emphasis on real property law, environmental law, forest taxation law and contract law.

**FO 4413/6413. Natural Resources Policy. (3)** (Prerequisite: Senior standing). Three hours lecture. Current topics relating to natural resources policy which affect management decisions and practices in the public and private sectors of natural resources use.

**FO 4421/6421. Professional Practices Laboratory. (1)** (Corequisite: FO 4423/6423). Four hours laboratory. Forest resource data collection analysis.

**FO 4423/6423. Professional Practice. (3)** (Prerequisite: FO 4323/6323, FO 4321/6321; corequisite: FO 4421/6421). Three hours lecture. Development of forest resource alternatives and recommendations for a specific forest property.

**FO 4443/6443. International Forest Resources and Trade. (3)** (Prerequisite: Consent of Instructor). Three hours lecture. A study of the world's wood consumption, marketing arrangements, community forestry, and forestry in economic development.

**FO 4451/6451. Remote Sensing Applications Laboratory. (1)** (Co-requisite: FO 4452/6452. Prerequisites: A basic image interpretation or remote sensing course or consent of instructor). Three hours laboratory. Practical approaches to interpretation of remote sensing data. Emphasis is on computer applications for image analysis.

**FO 4452/6452. Remote Sensing Applications. (2)** (Corequisite FO 4451/6451; Prerequisite: A basic image interpretation or remote sensing course or consent of instructor). Two hours lecture. An introduction to remote sensing with emphasis on analysis and applications of digital image data in inventory, monitoring, and management of renewable natural resources.

**FO 4463/6463. Forest Hydrology. (3)** (Prerequisite: PSS 3301, PSS 3303, FO 4223/6223, FO 4221/6221, or consent of instructor).

Three hours lecture. Synthesis of current information on the fundamental properties and processes of forest soils, hydrology, and water quality with emphasis on watershed and ecosystem management factors.

**FO 4471/6471/ GIS for Natural Resource Management. (1)** (Corequisite: FO 4472/6472. Prerequisite: Junior standing). Three hours laboratory. Computer laboratory exercises that stress development, management and use of digital geographic data for management of natural resources.

**FO 4472/6472. GIS for Natural Resource Management. (2)** (Corequisite: FO 4471/6471. Prerequisite: Junior standing). Two hours lecture. Introduction to geographic information systems (GIS) with emphasis on collection, encoding, storage, retrieval, and analysis of spatial data for use in management of natural resources.

**FO 4483/6483. Forest Soils. (3)** (Prerequisite: PSS 3301, PSS 3303, FO 4123/6123, FO 4121/6121, or consent of instructor). Three hours lecture. Synthesize current information on fundamental properties and processes of forest soils with emphasis on applications to silviculture, soil conservation, and sustainable management of forested ecosystems.

**FO 4631/6631. Tree Form and Function Laboratory. (1)** (Prerequisites: Introductory statistics such as ST 2113 or FO 4213, graduate standing or consent of instructor). (Co-requisite: FO 4633/6633). Three hours laboratory. Introduction to tree physiology measurement techniques and instrumentation, data analysis and interpretation.

**FO 4633/6633. Tree Form and Function. (3)** (Prerequisite: BIO 1203). (Co-requisite for 6633: FO 6631). Three hours lecture. Physiology growth, and development of forest trees. Topics include carbohydrate source-sink relations, tree hydraulic architecture, forest canopy-atmosphere gas exchange.

**FO 4990/6990. Special Topics in Forestry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FO 7000. Directed Individual Study.** Hours and credits to be arranged.

**FO 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**FO 8111-8211. Graduate Seminar. (1-1)** Credit in 2 semesters allowed. Review of and discussion of current forestry issues. Presentation of student reports.

**FO 8123. Tree Seed. (3)** (Prerequisite: BIO 4203/6203 or consent of instructor). Two hours lecture. Three hours laboratory. Principles and practices of tree seed production, methods, and factors involved in harvesting, processing, storing, and testing of tree seed.

**FO 8133. Forest Ecophysiology. (3)** (Prerequisite: FO 4432/6432, BIO 4214/6214, or Consent of Instructor). Three hours lecture. Fall semester. An exploration of environment-plant interactions, and physiological mechanisms for injury from, and resistance to, environmental stress, with emphasis on forest communities.

**FO 8143. Advanced Forest Economics. (3)** Three hours lecture. Application of current theory and techniques of economics to forestry. Emphasis is on the use of quantitative tools to improve decision-making in forest resource management.

**FO 8153. Quantitative Forest Ecology. (3)** (Prerequisites: MA 1723 and ST 8114 or consent of instructor). Three hours lecture. Analytical models, fitting model coefficients to data, life tables, spatial patterns, interspecific competition, and species diversity.

**FO 8163. Nonmarket Forest Values. (3)** Three hours lecture. (Prerequisite: FO 4133 or equivalent or consent of Instructor). The course will deal with the valuation of nonmarket, non-timber outputs or amenities derived from the forest.

**FO 8211. Graduate Seminar. (1-1)** Credit in 2 semesters allowed. Review of and discussion of current forestry issues. Presentation of student reports.

**FO 8213. Advanced Silviculture. (3)** (Prerequisite: FO 4223 or consent of instructor). Three hours of lecture and/or field trips once per week. Spring semester. Silvicultural practices in context of the total ecological principles in decision making process. Emphasis on silviculture of bottomland hardwoods.

**FO 8223. Seminar in Forest and Wildland Resources and Use. (3)** Three hours. Biological and social bases for forest and wildland use; conservation and management through applications of science and public policy.

**FO 8233. Advanced Forest Inventory. (3)** Three hours lecture. Design and analysis of forest resource inventories. Growth functions, yield tables, measures of site quality and stocking, and advanced sampling topics.

**FO 8243. Advanced Forest Resource Management and Planning. (3)** (Prerequisite: FO 8143). Three hours lecture. Emphasis is on the assessment of multiple-use alternatives. Data needs, resource trade-offs, and economic and policy implications are discussed.

**FO 8293. Master of Forestry Professional Paper. (3)** For Master of Forestry students only. Demonstration of ability to compile, synthesize, and evaluate information, and to effectively communicate analyses and conclusions.

**FO 8990. Special Topics in Forestry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing

subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FO 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of FOREST PRODUCTS

Office: Forest Products Laboratory

Professors Bullard (Interim Department Head), Amburgey, Barnes, Borazjani, Ingram, Kim, Nicholas, Schultz, Seale, Sellers and Steele; Associate Professor Diehl; Assistant Professor Zhang

**FP 1103. Wood Technology and Products. (3)** Three hours lecture. A survey of wood structures, properties and products, including reconstituted wood products, chemicals from wood and wood preservation.

**FP 2990. Special Topics in Forest Products. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FP 3012. Introduction to Forest Industries. (2)** 40 hours per weeks for two weeks of laboratory (industry tours). Guided introduction to forest products industries and processes.

**FP 4000. Directed Individual Study.** Hours and credits to be arranged.

**FP 4013/6013. Wood Anatomy. (3)** (Prerequisite: FP 1103 or consent of instructor). Two hours lecture. Three hours laboratory. Anatomy of commercial timber species; elements of botanical microtechnique, fundamentals of microscopy, and fundamental properties: gross and minute structural characteristics of wood leading to identification.

**FP 4023/6023. Wood Chemistry. (3)** (Prerequisite: CH 1053 and CH 1051 or CH 1223 and CH 1221). Three hours lecture. Introduction to the distribution, chemical structure, reactions and uses of the chemical components of wood including cellulose, hemicellulose, lignin, and extractives.

**FP 4113/6113. Adhesives and Finishes for Wood. (3)** (Prerequisite: CH 1053, FP 1103, or consent of instructor). Two hours lecture. Three hours laboratory. Theory and technology of adhesion; adhesive types, application equipment; fundamentals of coating technology; wood finishes; finishing systems; evaluation of glued, finished products; market volumes.

**FP 4123/6123. Lumber Manufacturing. (3)** (Prerequisite: Consent of instructor). Two hours lecture. Three hours laboratory. Raw materials, production methods and product specifications for sawn wood products. Machinery and plant layout. Operation, control, and analysis of lumber manufacturing systems; markets.

**FP 4143/6143. Composite Wood Products. (3)** (Prerequisite: FP 4113 or consent of instructor). Two hours lecture. Three hours laboratory. Study of physical and chemical parameters affecting reconstituted wood products; laboratory investigation of processing methods; industrial standards and quality control; markets.

**FP 4213/6213. Wood Deterioration and Preservation. (3)** (Prerequisite: Consent of instructor). Two hours lecture. Three hours laboratory. Thermal, biological, and mechanical agents of wood products deterioration; biological control; design considerations; wood preservatives, preservation systems; treatability; preservative effectiveness; standards, pollution control.

**FP 4223/6223. Furniture Production I. (3)** (Prerequisite: FP 1130 or consent of instructor). Two hours lecture. Three hours laboratory. The theory of furniture production; materials for furniture; manufacturing machines and their functions; wood machining and sanding; finishing; industrial processes; marketing.

**FP 4233/6233. Furniture Production II. (3)** (Prerequisite: FP 1103 or consent of instructor). Two hours lecture. Three hours laboratory. General principles of upholstered furniture design; frame construction and analysis; material selection; fasteners; joint construction; and testing standards.

**FP 4253/6253. Quantitative Methods in Forest Products and Furniture. (3)** (Prerequisite: MA 1613 or MA 1713, BIS 1013 or concurrent). Three hours lecture. Application of economic principles to the production and marketing of forest products; production theory of single and multiproduct firms; computer applications.

**FP 4313/6313. Environmental Principles. (3)** (Prerequisites: FP 3012 or Consent of instructor). Three hours lecture. Environmental regulations pertaining to Forest Products industries. Handling and transport of hazardous compounds. Sources of environmental problems, fate in the environmental, and common control technologies.

**FP 4323/6323. Physical Properties of Wood. (3)** (Prerequisite: FP 1103, MA 1613, PH 1113, or consent of instructor). Two hours lecture. Three hours laboratory. Equation derivation; dimensional behavior; psychometry; thermal properties; electricity; moisture movement; case studies/problems.

**FP 4353/6353. Forest Products Marketing. (3)** (Prerequisites: FP 3012 and junior standing). Marketing and practices used by forest products and furniture producing companies as related to differentiated vs non-differentiated products by consumers.

**FP 4413. Professional Practice. (3)** (Prerequisite: Senior standing). Three hours independent study. Seniors will be exposed to all FP faculty members and required to prepare both written and oral reports on a variety of FP topics.

**FP 4423/6423. Mechanical Properties of Wood. (3)** (Prerequisite: FP 1103, MA 1613, PH 1113, or consent of instructor). Two hours lecture. Three hours laboratory. Strength and elasticity of wood and wood composites; variation in properties as function of structure, moisture, temperature and time; derivation of working stresses; structural design.

**FP 4990/6990. Special Topics in Forest Products. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FP 7000. Directed Individual Study.** Hours and credits to be arranged.

**FP 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**FP 8111. Research Seminar. (1)** Review of current research work in wood science and technology; the scientific method; philosophy of research.

**FP 8113. Advanced Wood Physics. (3)** (Prerequisite: Consent of instructor). Two hours lecture. Three hours laboratory. Wood-fluid relationships; interfacial properties of wood; thermal and electrical properties of wood; current topics in wood physics.

**FP 8123. Advanced Lignocellulosic Chemistry. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Carbohydrate chemistry; chemistry of cellulose and cellulose, hemicellulose, lignins, extractives, and bark; pulping and bleaching chemistry; analysis of lignocellulosic materials; biodegradation of lignocellulosics; biomass products.

**FP 8133. Environmental Issues in Forest Products. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Environmental impact, regulations, management of wood treatment by-products and chemical wastes; biodegradation microorganisms; bioremediation; biomass residues; soil, sediment, water, air contaminations; current clean-up technologies.

**FP 8143. Ultrastructure of Wood. (3)** (Prerequisites: Course in basic wood anatomy and identification, comparable to FP 4014/6014). Two hours lecture. Three hours laboratory. The study of the formation, anatomy, structure and chemical properties of wood and wood fibers with an introduction to microscopic and spectroscopic methods of investigation.

**FP 8213. Advanced Wood Mechanics. (3)** (Prerequisite: Consent of instructor). Two hours lecture. Three hours laboratory. Study of elastic and viscoelastic behavior of wood composites; fracture in wood; stress analysis; current topics in wood mechanics.

**FP 8990. Special Topics in Forest Products. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FP 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of FOOD SCIENCE and TECHNOLOGY

Office: 107 Herzer Building

Professors White (head), Chen, Haque, Marshall, Rogers, Althen, and Silva;  
Assistant Professor Chen.

**FST 1103. Introduction to Food Science. (3)** Three hours lecture. An introductory course that relates how the disciplines of chemistry, microbiology and nutrition are involved in preservation, handling, distribution, and metabolism of foods. (May be taught as a correspondence course).

**FST 1113. Food and the Consumer. (3)** Three hours lecture. A study of the food chain from the producer to the consumer with emphasis on consumer education relative to man's food supply. (Same as GA 2113).

**FST 2112. Food Products Evaluation. (2)** One hour lecture. Two hours laboratory. Sensory examination of food products; common defects, causes, and remedies. Basic methods of evaluation of different types of foods.

**FST 2664. Food Processing. (4)** (Prerequisite: consent of instructor). Three hours lecture. Two hours laboratory. Introduction of processing technology involved with manufacture of dairy, red meat, poultry, fish, and fruit/vegetable products.

**FST 2990. Special Topics in Food Science and Technology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FST 3111. Food Science Seminar. (1)** One hour lecture. Preparation and presentation on specially assigned current topics in Food Science.

**FST 3142. Meats Judging I. (2)** Spring semester. Four hours laboratory. Grading and judging meat carcasses and cuts, study of packing house operation. (Same as ADS 3142).

**FST 3412. Selection Evaluation and Use of Meats. (2)** Fall semester. One hour lecture. Two hours laboratory. Identification, selection, cutting grading, care, storage and cooking cuts of meat. (Same as ADS 3412).

**FST 4000. Directed Individual Study.** Hours and credits to be arranged.

**FST 4114/6114. Analysis of Food Products. (4)** (Prerequisites: CH 2503). Three hours lecture. Three hours laboratory. Chemistry and technology of food products processing and physical and chemical methods of analyzing foods and biological products.

**FST 4123/6123. Fermented Foods Processing. (3)** (Prerequisites: BIO 3304). Three hours lecture. Three hours laboratory. Fundamental concepts of microbial cultures used in various fermented foods, with emphasis on the manufacture of cheese, cultured dairy products and other foods.

**FST 4143/6143. Dairy Foods Processing. (3)** Two hours lecture. Two hours laboratory. Basic concepts of processing, freezing, and concentrating milk and milk products. Emphasis on fluid milk products, frozen dairy desserts, and dried products.

**FST 4153/6153. Food Plant Management. (3)** (Prerequisite: Senior standing or consent of instructor). Two hours lecture. One hour laboratory. A study of problems associated with the general management of food processing plants.

**FST 4164/6164. Quality Assurance of Food Products. (4)** (Prerequisites: BIO 3304). Two hours lecture. Four hours laboratory. Principles, methods, and techniques involved in evaluating essential parameters for commercial, state and federal control of food products.

**FST 4173/6173. Food Packaging. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Objectives and requirements of packaging; composition, characteristics, chemical and physical properties, selection and adaptation of packaging materials and packages.

**FST 4241/6241. Applied Food Chemistry. (1)** (Prerequisite: BCH 3613 and prior credit for/or current enrollment in FST 4243/6243). Two hour lab. Basic laboratory experiments to provide understanding of the function and interactions of chemical components in food.

**FST 4243/6243. Composition and Chemical Reactions of Foods. (3)** Spring semester. (Prerequisites: CH 1053 and CH 2503 or equivalent). Three hours lecture. Nature and chemical behavior of food constituents including proteins, lipids, carbohydrates, minerals, water, enzymes and pigments; properties of food systems as related to commercial preparation. (Same as ADS 4243/6243).

**FST 4313/6313. Food Industry Nutrition Issues. (3)** (Prerequisite: consent of instructor). Three hours lecture. Designed to help food technologists understand scientific evidence, changing demographics and lifestyles, and consumer perceptions influence food product demand and thus diet quality. (Same as NTR 4313/6313).

**FST 4314/6314. Meats Processing. (4)** Spring semester. Three hours lecture. Two hours laboratory. Survey of the meat industry with emphasis on slaughtering, cutting, curing, cooling, care, storage and manufacturing meats and meat products. (Same as ADS 4314/6314).

**FST 4414/6414. Microbiology of Foods. (4)** (Prerequisite: BIO 3404). Two hours lecture. Four hours laboratory. Isolation and classification of the microorganisms associated with spoilage of commercial and domestic preserved foods. (Same as BIO 4414/6414).

**FST 4513/6513. Poultry Processing. (3)** Two hours lecture. Two hours laboratory. Operation and study of modern processing equipment; grading poultry and eggs; killing, dressing, eviscerating, and packaging poultry; studying methods of retail and wholesale marketing. (Same as PO 4513/6513).

**FST 4563. Food Products Evaluation. (3)** Basic principles and applications in food product measurements, including physical (viscosity, texture), chemical (ph, acidity), microbiological (bacteria, yeast), and sensory methods will be discussed. (This course is designed for certification programs and not for students enrolled in degree programs at MSU).

**FST 4573/6573. Food Engineering Fundamentals. (3)** (Prerequisites: MA 1713, PH 1123, or consent of instructor.) Three hours lecture. Fundamentals of engineering as applied to food and agricultural products. Emphasis on units and dimensions, thermodynamics, mass and energy balances, fluid flow and heat transfer.

**FST 4583/6583. Food Preservation Technology. (3)** Two hours lecture. Two hours laboratory. Basics and unit operations on thermal processing, refrigeration/freezing, concentration/dehydration, fermentation, preservatives, baking, low thermal processes, modified atmospheres, wastewater, and shelf-life will be discussed. (Same as PSS 4583/6583).

**FST 4593/6593. New Food Product Development. (3)** (Prerequisite: Senior Level Standing). Two hours lecture. Two hours laboratory. New product development, original idea through preliminary appraisal, economic and technological feasibility studies, laboratory developments, organoleptical and consumer testing, and revisions to final decision making.

**FST 4990/6990. Special Topics in Food Science and Technology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FST 4613/6613. Seafood Processing. (3)** Two hours lecture. Two hours laboratory. A study of basis food science and technology principles directed toward seafood and aquaculture food harvesting, processing, marketing, and regulation.

**FST 7000. Directed Individual Study.** Hours and credits to be arranged.

**FST 8000. Thesis Research/Thesis.**

**FST 8111-8141. Food Science Seminar. (1)** One hour lecture. Preparation and presentation of reports on specially assigned current topics in Food Science.

**FST 8113. Advanced Food Microbiology. (3)** (Prerequisite: FST/BIO 4414/6614). Three hours lecture. Advanced concepts in food microbiology emphasizing food quality and safety.

**FST 8143. Advanced Food Chemistry. (3)** (Prerequisites: FST 4243/6243). Three hours lecture. Designed for students to recognize and appreciate the various colloidal phenomena encountered in foods, and to develop a knowledge of techniques employed in their investigation.

**FST 8163. Flavor and Food Acceptance. (3)** (Prerequisite: CH 2503). Three hours lecture. Sensory responses with emphasis on smell, taste, tact and appearance as related to foods. Techniques of panel and physicochemical methods of testing.

**FST 8253. Nutrition and Food Science Research Techniques. (3)** Spring semester. One hour lecture. Six hours laboratory. Application of various instruments and techniques for assay of food and biological material. (Same as NTR 8253).

**FST 8333. Food Law. (3)** (Prerequisite: Consent of Instructor). Two hours lecture. Two hours laboratory. Role of Law, Mandatory and Optional food regulations exercised by State, Federal and International Agencies on Food Quality, Safety, Wholesomeness and Nutrition.

**FST 8423. Meat Science. (3)** Summer semester. (Prerequisites: CH 4513/6513 or equivalent and BIO 3304 or equivalent). Three hours lecture. Basic study of the value of meat and how this information is applied to the evaluation, processing and preservation of meat, meat products and meat by-products. (Same as ADS 8423)

**FST 8513. Poultry and Food Science Readings. (3)** (Prerequisite: PO 6513 or 3 hours in related courses offered in Animal and Dairy Sci-

ences or Horticulture). One hour lecture. Six hours library research weekly. An intensive study of poultry food science literature dealing with chemical, microbial, physical and organoleptic attributes of eggs and poultry meats. (Same as PO 8513).

**FST 8572. Advanced Food Technology. (2)** (Prerequisites: FST 6583 and/or consent of instructor). Two hours lecture. Introduction and discussion of recent developments in Food Science and Technology including aseptic processing, microwave technology, food irradiation, separation techniques, and modified atmosphere packaging.

**FST 8983. Ingredient Technology. (3)** Three hours lecture. A specialized study of the major food ingredients including functionality, applications, formulations, and legal considerations for formulated products.

**FST 8990. Special Topics in Food Science and Technology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**FST 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## GENERAL AGRICULTURE

(For departmental information, see Agricultural Information Science and Education.)

**GA 1111. Survey of Agriculture. (1)** One hour lecture. A study of the over-all function, organization and operation of the agricultural industry in the United States and the world.

**GA 2113. Food and the Consumer. (3)** Three hours lecture. A study of the food chain from the producer to the consumer with emphasis on consumer education relative to man's food supply. (Same as FST 1113).

**GA 2990. Special Topics in General Agriculture. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## GENERAL BUSINESS

**GB 2990. Special Topics in General Business. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GB 3011. Academic Peer Advising I. (1)** (Prerequisites: Junior standing and consent of instructor, for Business majors only). One hour lecture. Study of the role, benefits, objectives, and practice of academic peer advising.

**GB 3021. Academic Peer Advising II. (1)** (Prerequisites: GB 3011 and consent of Instructor, for Business majors only). One hour lab. Laboratory application of academic peer advising.

**GB 3031. Academic Peer Advising III. (1)** (Prerequisites: GB 3011, GB 3021, and consent of Instructor, for Business majors only). One hour lab. Laboratory application of academic peer advising.

**GB 4853. Business Policy. (3)** (Prerequisite: Graduating senior). Three hours lecture. Administrative process under conditions of uncertainty. Emphasis in integrating knowledge acquired in the functional areas of business administration in formulating administrative policies.

**GB 4990/6990. Special Topics in General Business. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GB 8101. Comprehensive Study. (1)** (Prerequisite: Consent from the Director of Graduate Studies in Business). Preparation for master's level comprehensive examination to be taken by masters students needing a comprehensive program of study.

**GB 8853. Policy Strategy. (3)** (Prerequisite: Final semester MBA). Three hours lecture. Corporate, business and functional level in strategic positioning. Emphasis on strategy formation, implementation, and evaluation on profit and non-profit institutions through lecture and case analysis/

**GB 8990. Special Topics in General Business. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## GENERAL ENGINEERING

Office: 106 McCain Engineering Building

Professors Bennett and Taylor

Instructors Brocato, Dobberfuhr, and Garretson

**GE 2990. Special Topics in General Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GE 3011. Engineering Entrepreneurship Seminar. (1)** Two hours seminar. Current topics in engineering entrepreneurship to enable students to better understand the role of the entrepreneur in creating start-up companies and leading young existing companies.

**GE 3513. Technical Writing. (3)** (Prerequisites: Completion of English composition requirements; junior standing). Three hours lecture. Instruction and practice in technical writing for scientific and engineering fields, emphasizing analysis and development of correspondence, progress and research reports, instruction, and proposals.

**GE 4990/6990. Special Topics in General Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GE 8990. Special Topics in General Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GE 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of GEOSCIENCES

(Courses are listed under GG (Geology) and are found below and GR (Geography) which follows Genetics listing.)

Office: 109 Hilburn Hall

Professors Binkley, Mylroie, Schmitz and Wax;  
Professors Emeritus Kaye, Laswell, Myers, and Russell;  
Associate Professors Dewey and Panuska;  
Assistant Professors Brown, Lynch, Mack and Rodgers

**GG 1111. Earth Sciences I Laboratory. (1)** Two hours laboratory. Laboratory for GG 1113, but may be scheduled without GG 1113. Includes study of earth materials, maps, and aerial photographs. Planned primarily as a science elective for the non-geology major.

**GG 1113. Survey of Earth Sciences I. (3)** Three hours lecture. Study of the Earth in space, the materials of which the Earth is composed, and the processes affecting change on the Earth. Planned primarily as a science elective for the non-geology major.

**GG 1121. Earth Sciences II Laboratory. (1)** Two hours laboratory. Laboratory for GG 1123, but may be scheduled without GG 1123. Includes the study of fossils, geologic maps, and geologic cross sections. Planned primarily as a science elective for the non-geology major.

**GG 1123. Survey of Earth Sciences II. (3)** (Prerequisite: GG 1113, or equivalent). Three hours lecture. Origin and development of the Earth through geologic time. Planned primarily as a science elective for the non-geology major.

**GG 1133. Planetary Geology. (3)** Three hours lecture. Process oriented examination of the planets and their satellites with emphasis on the "Earth-like" planets and moons.

**GG 1151. Earth Materials and Processes Laboratory. (1)** (Prerequisite: Consent of instructor). Two hours laboratory. Study of natural earth materials and the processes acting upon them. Designed to accompany GG 1153.

**GG 1153. Geology for Scientists and Engineers. (3)** Three hours lecture. Introduction to physical geology, earth materials and earth processes for professional careers related to the earth sciences. Designed to accompany GG 1151.

**GG 1161. Earth's History Laboratory. (1)** (Prerequisite: GG 1153 or equivalent). Two hours laboratory and field work. Includes the study of fossils, geologic maps, geologic sections and their use in interpreting Earth's history. Designed to accompany GG 1163.

**GG 1163. Earth's History. (3)** (Prerequisite: GG 1153 or equivalent). Three hours lecture. An in-depth consideration of the physical and biological evolution of the Earth through geologic time. Designed to accompany GG 1161.

**GG 1183. Honors in Physical Geology. (3)** (Prerequisite: Open through invitation only.) Three hours lecture. The principles of physical geology, earth materials and earth processes. GG 1151 may be taken to satisfy laboratory requirements.

**GG 1193. Honors in Historical Geology. (3)** (Prerequisite: Open through invitation only.) Three hours lecture. History of the earth as recorded in rocks and fossils, and the history of geologic thought. GG 1161 may be taken concurrently to satisfy laboratory requirements.

**GG 2990. Special Topics in Geology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GG 3133. Introduction to Environmental Geology. (3)** (Prerequisite: GG 1113, 1153, or 1183). Three hours lecture. Consideration of those aspects of earth science concerned with problems arising from intensive use of earth by modern society.

**GG 3603. Introduction to Oceanography. (3)** (Prerequisite: GG 1113, 1153, or 1183). Three hours lecture. A survey of the basic principles and applications of science to the study of the marine environment.

**GG 3613. Water Resources. (3)** (Prerequisite: GG 1113 or equivalent or consent of instructor.) Three hours lecture. Introduction to the location, use, recovery and environmental problems of surface and subsurface waters.

**GG 4000. Directed Individual Study.** (Prerequisite: Junior standing). Hours and credits to be arranged.

**GG 4033/6033. Resources and the Environment. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Formation and development of natural resources involving the basic evolution, planning, and design of a typical lignite coal mine, including environmental monitoring and reclamation.

**GG 4063/6063. Development of Fossil Fuel Resources. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Formation, deposition, and extraction of fossil fuel resources. Petroleum and coal will be the main fossil fuels examined.

**GG 4113/6113. Micropaleontology. (3)** (Prerequisite: GG 4203 or equivalent). Three hours lecture. A study of microscopic fossils. May be taken with GG 4201.

**GG 4114/6114. Mineralogy. (4)** (Prerequisites: GG 1111 and CH 1223, or equivalents). Three hours lecture. Three hours laboratory. The physical and chemical properties of minerals; crystallography, origin, distribution, association, uses, and identification of minerals.

**GG 4123/6123. Petrology. (3)** (Prerequisite: GG 4114, or equivalent). Two hours lecture. Three hours laboratory. The origin, occurrence, and classification of the major rock types.

**GG 4133/6133. Principles of Paleogeology. (3)** (Prerequisite: GG 4203 or equivalent or consent of instructor). Three hours lecture. A study of paleogeology with special emphasis on marine paleogeology. May be taken with GG 4201.

**GG 4153/6153. Engineering Geology. (3)** (Prerequisite: GG 1113 or equivalent). Two hours lecture. Two hours laboratory. Application of geologic principles to location and construction of engineering structures; engineering properties of geologic materials; engineering application of equipment used by geologists.

**GG 4201/6201. Practicum in Paleontology. (1)** (Prerequisites: GG 1163 and BIO 1504 or equivalent). One hour lecture. Two hours laboratory. Laboratory for GG 4203, but may instead be taken with GG 4113 or GG 4133. A practicum in morphology of fossils, biostratigraphy, and paleogeology.

**GG 4203/6203. Principles of Paleobiology. (3)** (Prerequisites: GG 1163 and BIO 1504, or equivalents). Three hours lecture. Three

hours laboratory. An introductory study of topics in paleobiology. May be taken with GG 4201.

**GG 4233/6233. Applied Geophysics. (3)** (Prerequisite: Consent of instructor). Three hours lecture. A survey of the basic principles and applications of geophysics with major emphasis on petroleum exploration.

**GG 4304/6304. Principles of Sedimentary Deposits I. (4)** (Prerequisite: GG 1123 or equivalent). Three hours lecture. Three hours laboratory. Treatment of sediment and sedimentary rock. Emphasis on texture, fluid processes, deposition, structure, and diagenesis; stratigraphic analysis; and application to subsurface flow systems.

**GG 4333/6333. Geowriting. (3)** Three hours lecture. Weekly library research on controversial topics in geology presented in class as written professional papers.

**GG 4403/6403. Gulf Coast Stratigraphy. (3)** (Prerequisite: GG 4304 or equivalent). Three hours lecture or field trips. Systematic study of the stratigraphy of the Gulf Coast; actual field experience substituted for class work, when conditions permit.

**GG 4413/6413. Structural Geology. (3)** (Prerequisites: GG 4123 or consent of instructor). Two hours lecture. Two hours laboratory. Application of the principles of mechanics to the forces deforming the rocks of the Earth's crust; emphasis on structures in sedimentary rocks.

**GG 4433/6433. Subsurface Methods. (3)** (Prerequisite: GG 4443 and GG 4413, or equivalent). One hour lecture. Four hours laboratory. The study of subsurface geologic methods including contouring, sampling study, various types of logging, and the interpretation of subsurface data.

**GG 4443/6443. Principles of Sedimentary Deposits II. (3)** (Prerequisite: GG 4304). Three hours lecture. Application of principles from GG 4304. Introduces facies associations produced in depositional environments, systems, and systems tracts, tectonics and sedimentation, basin classification, and sequence analysis.

**GG 4503/6503. Geomorphology. (3)** (Prerequisite: Consent of instructor). Three hours lecture. The origin and characteristics of land forms based on a consideration of geologic processes, stages of development, and geological structure.

**GG 4523/6523. Coastal Environments. (3)** (Prerequisite: GG 1113 or consent of instructor). Three hours lecture. An introduction to world coastal environments, with emphasis upon major shoreline-shaping processes, geographical variation in coastal landforms, human impacts, and environmental concerns.

**GG 4613/6613. Physical Hydrogeology. (3)** (Prerequisite: GG 3613 or consent of instructor). Three hours lecture. Advanced study of the interrelationship of ground water and its geologic environment with emphasis on occurrence, distribution, and movement.

**GG 4623/6623. Chemical Hydrogeology. (3)** (Prerequisite: CE 3523, CE 8563, or GG 4613/6613 or consent of instructor). Three hours lecture. Advanced study of groundwater and its environment with emphasis on the chemical interaction of water with porous solids and the transport of chemical constituents.

**GG 4990/6990. Special Topics in Geology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GG 7000. Directed Individual Study.** Hours and credits to be arranged.

**GG 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**GG 8164. Earth Sciences I. (4)** (Prerequisite: Consent of the Head of Department). Three hours lecture. Two hours laboratory and field work. Comprehensive study of physical aspects of earth sciences, including geology, geophysics, oceanography, and atmospheric and space sciences. Planned primarily for teachers of science.

**GG 8223. Advanced Paleontology. (3)** (Prerequisite: GG 4203 or equivalent). Two hours lecture. Two hours laboratory and field trips. Deals with topics in advanced paleontology.

**GG 8413. Paleomagnetism. (3)** (Prerequisite: Consent of instructor). Three hours lecture. In depth examination of the geomagnetic field and magnetization of rocks and minerals with emphasis on practical application to geologic problems.

**GG 8443. Advanced Structural Geology. (3)** (Prerequisite: Major in geology including GG 4413 or equivalent). Three hours lecture. A study of major tectonic units and the forces involved in their formation.

**GG 8561. Geoscience Seminar. (1)** (Prerequisite: Graduate standing). Review of current geoscience literature; preparation and presentation of formal papers.

**GG 8572. Geologic Literature. (2)** (Prerequisite: Major in geology). A reading course with emphasis on library research.



**GG 8713. Regional Geology of Eastern North America. (3)** (Prerequisite: Major in geology). Three hours lecture. A study of physiography, structure, and stratigraphy of eastern North America.

**GG 8723. Regional Geology of Western North America. (3)** (Prerequisite: Major in geology). Three hours lecture. A study of physiography, structure, and stratigraphy of western North America.

## GENETICS

(For the interdisciplinary graduate programs in Genetics, consult College of Agriculture and Life Sciences section of this catalog, and the *Graduate Bulletin*.)

**GNS 2990. Special Topics in Genetics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GNS 3103. Genetics I. (3)** (Prerequisites: MA 1313 and BIO 1504 or BIO 1203). (Same as PO 3103 and BIO 3103).

**GNS 4102/6102. Genetics II. (2)** (Prerequisite: GNS 3103). (Same as PO 4102/6102).

**GNS 4133/6133. Human Genetics. (3)** (Prerequisite: BIO 1504 or consent of instructor). Three hours lecture. Principles of Mendelian and molecular genetics as applied to humans. Description and causes of human genetic diseases and other anomalies. (Same as BIO 4133/6166).

**GNS 4282/6282. Genetics and Pest Management. (2)** (Same as EPP 4282/6282).

**GNS 4303/6303. Poultry Breeding and Hatchery Management. (3)** Three hours lecture. Principles of inbreeding, linebreeding, crossbreeding, heritability, pedigree records embryonic development; study of mortality peaks; causes of low fertility and hatchability.

**GNS 4805/6805. Biochemical Methods. (5)** (Prerequisite: Coregistration in BCH 4613/6613). One hour lecture. Eight hours laboratory. A comprehensive course to teach the student the modern methods of biochemistry including molecular biology. (Same as BCH 4805/6805).

**GNS 4990/6990. Special Topics in Genetics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GNS 6123. Animal Breeding. (3)** Fall semester. (Prerequisite: PO 3103). Three hours lecture. The basis for genetic improvement of livestock, including the study of variation, heritable characteristics, mating

**GG 8990. Special Topics in Geology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

systems and methods of estimating breeding values. (Same as ADS 4123/6123.)

**GNS 6713. Molecular Biology. (3)** (Prerequisite: Coregistration in BCH 4613/6613). Three hours lecture. A study of basic molecular process such as synthesis of DNA, RNA, and protein in both prokaryotic and eukaryotic cells. Offered fall semester. (Same as BCH 4713/6713).

**GNS 7000. Directed Individual Study.** Hours and credits to be arranged.

**GNS 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**GNS 8113. Advanced Plant Breeding. (3)** Three hours lecture. An intense review of methods of plant improvement and the application of these methods to modern plant breeding. (Same as PSS 8513 and PSS 8573).

**GNS 8143. Biometrical Genetics in Plant Breeding. (3)** (Same as PSS 8543).

**GNS 8233. Advanced Breeding. (3)** (Same as ADS 8233).

**GNS 8453. Statistical Genetics. (3)** (Same as ADS 8453).

**GNS 8533. Genetic Variation. (3)** (Same as PSS 8533).

**GNS 8643. Molecular Genetics. (3)** (Prerequisites: PO 3103 or BIO 3103 and Coregistration in BCH 4613/6613). Three hours lecture. Study of the gene and its expression with emphasis on structure and function in higher organisms. (Same as BCH 8643 and PHY 8643).

**GNS 8990. Special Topics in Genetics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GNS 9000. Dissertation Research/Dissertation.**

## GEOGRAPHY

(For departmental information, see GEOSCIENCES, GG.)

**GR 1114. Elements of Physical Geography. (4)** Three hours lecture. Two hours laboratory. Systematic study of the elements of the environmental process that form and characterize the earth's natural landscapes. May be taken as a science elective.

**GR 1123. Introduction to World Geography. (3)** Three hours lecture. A survey of the world's regions, with emphasis upon locational aspects, physical and cultural diversity, and environmental issues.

**GR 1603. Introduction to Meteorology. (3)** (Prerequisite: GR 1114, GR 1123, or equivalent). Three hours lecture. Descriptive study of weather with the objective of gaining appreciation of the variety of atmospheric phenomena. Explanation of daily weather events, their causes and impacts.

**GR 2013. Cultural Geography. (3)** Three hours lecture. Study of human occupancy of the Earth, treating geographic aspects of population, settlement, origin and diffusion of cultural traits, resource utilizing systems, and political factors.

**GR 2313. Maps and Remote Sensing. (3)** Two hours lecture. Two hours laboratory. Fundamental principles of cartography and remote sensing, including types and applications. Attention is given to interpretation of surface features, environmental problem solving, and environmental planning.

**GR 2990. Special Topics in Geosciences. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**GR 3113. Conservation of Natural Resources. (3)** Three hours lecture. Consideration of the current problems associated with the conservation of soils, forests, waters, minerals, and wild life in the United States and the world.

**GR 3323. Computer Applications in Geoscience. (3)** (Prerequisite: CS 1013 or consent of instructor). Three hours lecture. Use of computer software in geosciences. Preparation of professional and technical documentation, graphical analyses, and computer modeling in geology, meteorology, climatology, geography and environmental science.

**GR 4000. Directed Individual Study.** Hours and credits to be arranged.

**GR 4103/6103. Geography of Tourism. (3)** (Prerequisites: GR 1123 or equivalent). Three hours lecture. Study of the spatial aspects of recreation and tourism, with emphasis upon social, economic, and environmental impacts.

**GR 4123/6123. Urban Geography. (3)** Three hours lecture. Historic trends in distribution and growth of urban settlements, urban location theory; economic bases, functions, and structure of cities and metropolitan areas; urban problems; planning.

**GR 4203/6203. Geography of North America. (3)** Three hours lecture. A regional survey of the United States and Canada with emphasis upon place names, physical landscapes, historical settlement patterns, cultural regions, and environmental issues.

**GR 4213/6213. Geography of Latin America. (3)** Three hours lecture. A regional survey of Latin America with emphasis upon place names, physical environments, cultural landscapes and their evolution, and environmental issues.

**GR 4223/6223. Geography of Europe. (3)** Three hours lecture. A regional survey of Europe with emphasis upon placements, physical environments, cultural landscapes, geopolitical evolution, end environmental issues.

**GR 4233/6233. Geography of Asia. (3)** Three hours lecture. A regional survey of Asia with emphasis upon placenames, physical geography, cultural diversity and cultural landscapes, geopolitical conflicts, and environmental issues.

**GR 4243/6243. Geography of Russia and the Former Soviet Republics. (3)** Three hours lecture. A regional survey of the former Soviet Union republics with emphasis upon placenames, physical environments, ethnic diversity, geopolitical evolution, and environmental issues.

**GR 4253/6253. Geography of Africa. (3)** Three hours lecture. A regional survey of the African continent with emphasis upon place names, physical geography, cultural diversity and cultural landscapes, geopolitical changes, and environmental issues.

**GR 4263/6263. Geography of the South. (3)** Three hours lecture. A regional survey of the South with emphasis upon physical and cultural landscapes, settlement patterns, ethnic diversity, tourism development, and environmental issues.

**GR 4273/6273. Geography of Mississippi. (3)** Two hours lecture. Two hours laboratory or field work. A detailed survey of Mississippi with emphasis upon physical landscapes, population, settlement patterns, cultural/economic regions, tourism development and environmental issues.

**GR 4401/6401. Weather Analysis I. (1)** (Prerequisite: GR 1603 or equivalent). One hour lecture. Two hours laboratory. Introduction to real-time weather information such as Difax charts, satellite and radar imagery, and text data. Emphasis placed on Newscasting.

**GR 4411/6411. Weather Analysis II. (1)** (Prerequisite: GR 4401/6401). One hour lecture. Two hours laboratory. Continuation of Weather Forecasting I. Advanced analysis of current weather data in Nowcasting.

**GR 4421/6421. Weather Forecasting I. (1)** (Prerequisite: GR 4411/6411). Two hours laboratory. Introduction to the process of creating and disseminating weather forecasts. Use of current weather data in creating daily forecasts for the local area.

**GR 4431/6431. Weather Forecasting II. (1)** (Prerequisite: GR 4421/6421). One hour lecture. One hour laboratory. Continuation of Weather Forecasting I. Emphasis placed on disseminating both oral and written forecasts for the local area.

**GR 4503/6503. Practicum in Broadcast Meteorology I. (3)** (Prerequisite: GR 1603 or equivalent). Two hours lecture. Two hours laboratory. Introduction to television weather broadcasts with emphasis on creating accurate forecasts and on the techniques or communicating weather information to the public.

**GR 4513/6513. Practicum in Broadcast Meteorology II. (3)** (Prerequisite: GR 4503/6503). Two hours lecture. Two hours laboratory. Continuation of Practicum in Broadcast Meteorology I. Emphasis is placed on understanding the television studio as related to weathercasting.

**GR 4523/6523. Practicum in Broadcast Meteorology III. (3)** (Prerequisite: GR 4513/6513). Two hours lecture. Two hours laboratory. Continuation of Practicum in Broadcast Meteorology II. Emphasis placed on producing weather graphics for weather broadcasts.

**GR 4533/6533. Practicum in Broadcast Meteorology IV. (3)** (Prerequisite: GR 4523/6523). Two hours lecture. Two hours laboratory. Continuation of Practicum in Broadcast Meteorology III. Emphasis placed on studio performance of weathercasts.

**GR 4603/6603. Climatology. (3)** (Prerequisite: GR 1114 or GR 1123, or equivalent). Three hours lecture. Study of the elements and controls of weather and climate, distribution and characteristics of climatic regions.

**GR 4613/6613. Applied Climatology. (3)** (Prerequisites: GR 4633 or equivalent.) Two hours lecture. Two hours laboratory. Problem solving in today's world in topics such as bioclimatology, agricultural climatology and land use climatology.

**GR 4633/6633. Statistical Climatology. (3)** (Prerequisites: GR 4603/6603 or equivalent.) Two hours lecture. Two hours laboratory. A survey of the types of statistical weather data available. Manipulation of the data on various temporal and spatial scales.

**GR 4640/6640. Meteorological Internship. (1-6)** (Prerequisite: Consent of Instructor). Hours and credits to be arranged. Internship with television station, private company or government agency under supervision of instructor.

**GR 4653/6653. Satellite and Radar Meteorology. (3)** (Prerequisite: GR 4603/6603). Three hours lecture. Study of the history, the opera-

tions, and the applications of satellites and radar in weather analysis. Theory of meteorological measurements in determinations of atmospheric structure.

**GR 4703/6703. Severe Weather. (3)** (Prerequisites: GR 1603 or equivalent.) Three hours lecture. Descriptive study of severe and unusual weather across the earth. Explanation of variations in severe weather in both spatial and temporal scales.

**GR 4713/6713. Synoptic Meteorology I. (3)** (Prerequisites: GR 4603/6603 or equivalent.) Two hours lecture. Two hours laboratory. Fundamental principles behind weather forecasting. Physical processes in the atmosphere, atmospheric circulation systems, air mass analysis, frontogenesis and frontolysis.

**GR 4743/6743. Synoptic Meteorology II. (3)** (Prerequisite: GR 4713/6713). Two hours lecture. Two hours laboratory. Advanced analysis and detailed case studies of meteorological phenomena related to weather forecasting problems. Short and long-range forecasting techniques are presented.

**GR 4813/6813. Natural Hazards and Processes. (3)** (Prerequisites: GR 1114 or equivalent.) Three hours lecture. A survey of natural phenomena in geology, oceanography and astronomy as applied to meteorology. Detailed study of earthquakes, volcanoes, ocean movements, and solar activity.

**GR 4990/6990. Special Topics in Geosciences. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

**GR 4913/6913. Thermodynamic Meteorology. (3)** (Prerequisite: GR 1603 or equivalent). Three hours lecture. Examination of the meteorological stability within the earth's atmosphere. Focus on analysis of the various stability indices related to predicting severe weather.

**GR 4943/6943. Air pollution Meteorology. (3)** (Prerequisite: GR 1603 or equivalent). Three hours lecture. Introduction to air pollution meteorology with emphases on types of pollutants, meteorological conditions associated with air pollution, and examination of air pollution models.

**GR 7000. Directed Individual Study.** Hours and credits to be arranged.

**GR 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**GR 8313. Advanced Cultural Geography. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Study and analysis of population distribution, densities, and movements; rural and urban settlement patterns and features; principles of cultural geography.

**GR 8323. Geography for Teachers. (3)** (Prerequisite: GR 1123 or equivalent). Three hours lecture. Systematic overview of geography designed for in-service teachers. Organized around the National Geography Standards, class lectures are augmented by lessons presented by K-12 teachers.

**GR 8400. Field Methods in Geosciences. (1-3)** (Prerequisite: Consent of Instructor). Hours and credits to be arranged. May be taken twice. Provides field experience in the geosciences through planned and supervised outdoor projects and field trips.

**GR 8542. Geographic Literature. (2)** (Prerequisite: Major or minor in geography). A reading course with emphasis on library research.

**GR 8990. Special Topics in Geosciences. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

## HIGHER EDUCATION

Advisors: Merrily Dunn and Maureen Wilson

(For departmental information, see COUNSELOR EDUCATION.)

**HED 7000. Directed Individual Study.** Hours and credits to be arranged.

**HED 8113. Administration of Student Personnel Services in Higher Education. (3)** Three hours lecture. One hour laboratory. A study of the organization and administration of student personnel services with emphasis on health services, placement, financial aid and student housing.

**HED 8123. University and Community College Governance. (3)** Three hours lecture. A comprehensive survey of the field of administration of the community college and the university.

**HED 8133. University and Community College Instruction. (3)** Three hours lecture. A study of teaching methods and techniques, de-

velopment of course content and instructional aids, and evaluation of student performance in the university and community college.

**HED 8143. Seminar in University and Community College Education. (3)** Three hours lecture. An in-depth analysis of current problems, strengths and issues confronting community college and university administrators and faculty.

**HED 8153. University and Community College Curriculum Development. (3)** Three hours lecture. A study of the practices, trends, and issues in university and community college programs of study and curriculum offerings.

**HED 8710. Practicum in University and Community College. (1-3)** Observation and supervised teaching activities in a university or community college.

**HED 8723. Internship in University and Community College Education (3)** Directed off-campus experiences designed to relate ideas and concepts to problems encountered in managing higher education programs.

**HED 8990. Special Topics in Higher Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to of-

fer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Department of HISTORY

Office: 214 Allen Hall

Professors Uzoigwe (Head), Mabry, Godbold, Grill and Haug;  
Professors Emeritus James, Lowery, Moore, Parrish, Radvanyi and Scott;  
Associate Professors Willman, Jenkins, Crowell and Damms;  
Assistant Professors Foote, Hale, Lester, Messer and Wu.

**HI 1063. Early U.S. History. (3)** Three hours lecture. A survey of U.S. history through Reconstruction.

**HI 1073. Modern U.S. History. (3)** Three hours lecture. A continuation of HI 1063, covering the period from Reconstruction to the present.

**HI 1083. Problems in American Civilization. (3)** (Prerequisite: Open through invitation only). An honors course for freshmen. Three meetings each week. Readings, discussions, and reports.

**HI 1163. World History Before 1500. (3)** Three hours lecture. A survey of world history since prehistory until about 1500.

**HI 1173. World History Since 1500. (3)** Three hours lecture. A survey of world history since about 1500 until the present.

**HI 1183. Problems in Modern World Civilization. (3)** (Prerequisite: Open through invitation only). An honors course for freshmen. Three meetings each week. Readings, discussions, and reports.

**HI 1213. Early Western World. (3)** Three hours lecture. A survey of western world history from ancient times to about 1600.

**HI 1223. Modern Western World. (3)** Three hours lecture. A continuation of HI 1213, covering the period from the 17th century to the present.

**HI 1313. East Asian Civilizations to 1300. (3)** Three hours lecture. A survey of China and Japan and their peoples through a multi-disciplinary approach from pre-history until the thirteenth century.

**HI 1323. East Asian Civilizations Since 1300. (3)** Three hours lecture. A survey of China and Japan and their peoples through a multi-disciplinary approach from 1300 to the present.

**HI 2203. International Security and Strategic Studies. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Survey of the security and strategic interests of the major powers and weapons technology. Strategic doctrines, arms control, and civil defense. (Same as PS 2203).

**HI 2990. Special Topics in History. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**HI 3213. History of Sports in America. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. An examination of the role of sports in American history from colonial to modern times.

**HI 3333. Mississippi History. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A survey of Mississippi history examining economic, social, political, geographical, and cultural aspects of the state's past.

**HI 3703. The Western Church: Beginning to Reformation. (3)** (Prerequisites: Completion of any 1000-level course in history or philosophy and religion.) Three hours lecture. An examination of the institutions, doctrines, and spirituality of the Western Church and their impact on Western European politics, society, and culture. (Same as REL 3703).

**HI 3743. History of England. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A survey of English history from its origins to the present.

**HI 3763. Hitler and Nazi Germany. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of Adolf Hitler's personality and rise to power; and examination of the theory and practice of National Socialism.

**HI 3773. (3) History of the Holocaust. (3)** (Prerequisite: Completion of any 1000-level history course or consent of the instructor). Three hours lecture. An examination of the role of perpetrators, victims, and bystanders during the Holocaust.

**HI 3813. Modern Latin America. (3)** (Prerequisite: Completion of any 1000 level history course). Three hours lecture. An introduction to the modern history of the major Latin American nations and their importance to the United States.

**HI 3853. The United States and Latin America. (3)** (Prerequisite: Completion of any 1000-level history course.) Three hours lecture.

History of foreign policies and diplomatic relations in the nineteenth and twentieth centuries with an emphasis on strategic and security issues.

**HI 3903. Historiography and Historical Method. (3)** (Prerequisites: Junior or senior standing). Three hours lecture. The writings and interpretations of leading European and American historians, bibliographical aids, methods of research, preparation of bibliographies, practice in writing a research paper.

**HI 4000. Directed Individual Study.** Hours and credits to be arranged.

**HI 4103/6103. Colonial America. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. Study of the earliest English settlements to 1740. Emphasis on Puritanism, interaction with other people, expansion and forming of societal and political institutions.

**HI 4113/6113. U.S. History 1783-1825. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. An advanced course in the history of the United States, 1783-1825, with emphasis on economic, social, political, and constitutional developments.

**HI 4123/6123. Jacksonian America 1825-1850. (3)** (Prerequisites: Completion of any 1000-level history course). Three hours lecture. America from the beginnings of the Jacksonian movement, its political, economic and social battles, through trans-continental expansion and the Mexican War.

**HI 4133/6133. Civil War and Reconstruction 1850-1877. (3)** (Prerequisites: Completion of any 1000-level history course). Three hours lecture. Origins of the secessionist movement and the Civil War, the political and military battles of the War, and the struggle to reunify the nation.

**HI 4143/6143. Revolutionary America. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. American provinces from 1740 until 1783. Emphasis on maturation, pluralism, role in British empire, religion, Enlightenment, and causes, ideology, and conduct of the Revolution.

**HI 4153/6153. U.S. History 1877-1917. (3)** (Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of political, economic, social, and constitutional developments.

**HI 4163/6163. U.S. 1917-1945. (3)** (Prerequisites: Completion of any 1000-level history course). Three hours lecture. A study of all major aspects of American government and life through World War II.

**HI 4173/6173. U.S. History Since 1945. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of all major aspects of American government and life since the end of World War II.

**HI 4183/6183. U.S. Economic History. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of economic change in the United States and its impact on political and social development. (Same as EC 4183/6183).

**HI 4203/6203. Diplomatic History of the U.S. (3)** (Prerequisites: Completion of any 1000-level history course). Three hours lecture. A study of American foreign policy from the founding of the Republic to the present time.

**HI 4233/6233. War, Peace, and Society: The American Experience. (3)** (Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of the military history of the United States from colonial times to the present.

**HI 4243/6243. American Life and Thought. (3)** Three hours lecture. A survey of the changing lives and ideas of Americans from colonial to modern times. Family life, religion, recreation, dress, communities, social theories, medicine.

**HI 4253/6253. Religion in America. (3)** (Prerequisite: Completion of any 1000 level history course). Three hours lecture. Surveys history of religion in America, emphasizing interaction with social and political developments. (Same as REL 4253/6253).

**HI 4263/6263. America's Viet Nam War. (3)** (Prerequisite: Completion of any 1000 level history course). Three hours lecture. Analysis of the U.S. conduct of Viet Nam War including such as: Cold War context, presidential decision-making, military doctrine, domestic opposition, and legacy.

**HI 4273/6273. Women in American History. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the economic, political, and social activities of women in American history. Emphasis on Southern women.

**HI 4283/6283 History of Southern Women. (3)** Three hours lecture. The lives and images of women in the South from colonial times to the present. Native-, African-, and European-American women to be studied.

**HI 4303/6303. The Old South. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. Development of the Old South from colonization through the slavery controversy and the Civil War.

**HI 4313/6313. The New South. (3)** (Prerequisites: Completion of any 1000-level history course). Three hours lecture. Southern life from Reconstruction times to the present.

**HI 4323/6323. The American West. (3)** (Prerequisites: Completion of any 1000-level history course). Three hours lecture. A survey of the western frontier in American history from colonial times to 1900.

**HI 4363/6363. African-American History and Culture. (3)** (Prerequisite: Completion of any 1000 level history course). African-Americans from their African origins to the present, emphasizing black-white relations in the making of America.

**HI 4373/6373. History of Modern Civil Rights Movement. (3)** (Prerequisite: Completion of any 1000 level history course). Three hours lecture. A history of the Black struggle for equality in the United States between 1930 and 1970.

**HI 4403/6403. The Ancient Near East. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the origins and development of civilizations in Mesopotamia, Egypt, and Syria-Palestine from prehistoric times to the end of the Persian period. (Same as REL 4403/6403).

**HI 4413/6413. Ancient Greece and Rome. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A survey of the civilization of ancient Greece and Rome.

**HI 4563/6563. Viet Nam Between Revolution and War, 1940-1990. (3)** (Prerequisite: completion of any 1000-level history course or consent of instructor). Three hours lecture. The drama of modern Viet Nam that defined an entire era of decolonization and Cold War division. Historical roots, competing political visions, and sociocultural changes.

**HI 4583/6583. China Since 1800. (3)** (Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. China's tumultuous centuries of imperial decline, foreign assault, and nationalist and communist revolutions. Cultural and social transformations and the quest for institutional and economic modernization.

**HI 4593/6593. Japan Since 1600. (3)** (Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. Examines the major political, cultural, economic, military and diplomatic events that have brought Japan from sheltered feudalism to international preeminence.

**HI 4603/6603. Medieval Civilization. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of medieval institutions and culture.

**HI 4623/6623. The Vikings. (3)** (Prerequisite: Junior standing or consent of the instructor). Three hours lecture. A survey in English of the Vikings and the Viking Age. (Same as FL 4623/6623)

**HI 4643/6643. Renaissance and Reformation. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. The Renaissance and its relation to religion, politics, and social life; origins of the Reformation movement and its effect on Europe in early modern times.

**HI 4653/6653. The History of Science and Technology. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. Science and technology from Newton to the present, emphasizing the relationship between scientific innovation and technological application.

**HI 4673/6673. Europe, 1789-1914. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the political, economic, and intellectual foundations of nineteenth century society.

**HI 4683/6683. Europe: The First World War to Hitler. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. European development from the beginning of the First World War to the beginning of the Second World War.

**HI 4693/6693. Europe: The Second World War to the Common Market. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. European development from the beginning of the Second World War to the present time.

**HI 4703/6703. England to 1485. (3)** (Prerequisite: Completion of any 1000 level history course). Three hours lecture.

**HI 4713/6713. Tudor and Stuart England. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. The development of English institutions during the Tudor and Stuart periods.

**HI 4733/6733. Constitutional and Legal History of England. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. An intensive study of the constitutional and legal history of England.

**HI 4753/6753. History of Russia. (3)** (Prerequisite: Completion of any 1000-level history course.) Three hours lecture. The political, social, cultural, and economic development of Russia from Kievan to Soviet times.

**HI 4763/6763. History of Modern Germany. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. The history of German institutions in modern times.

**HI 4773/6773. History of Modern France. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. The history of French institutions in modern times.

**HI 4783/6783. African Civilization to 1880. (3)** (Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. This is a survey course which traces the major developments in Africa to 1880.

**HI 4793/6793. Modern Africa. (3)** (Prerequisite: Completion of any 1000-level history course or consent of instructor). Three hours lecture. This course traces Africa's history from 1880 to the present. It discusses how Africa lost and regained its sovereignty and the dilemma of independence.

**HI 4833/6833. Colonial Latin America. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A survey of Latin America in the colonial era: geographical setting, native cultures, conquest and colonization, Portuguese and Spanish colonial administration, cultural development.

**HI 4843/6843. Latin-American Republics. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. Modern Latin-American republics from the wars of independence to the present day, with special attention to Inter-American relations.

**HI 4853/6853. Modern Mexico. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. The political, economic, and social development of the Mexican nation from Independence through the age of dictators to the Great Revolution and its aftermath.

**HI 4903/6903. The Far East. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the impact of western civilization on China, Japan, and India in the nineteenth and twentieth centuries.

**HI 4913/6913. The Administration of Archives and Manuscript Collections. (3)** (Prerequisite: HI 3903 or consent of instructor). Three hours lecture. An introduction to archival theory and practice, including the evaluation, arrangement and description of archival materials in university, business, state, and federal depositories.

**HI 4923/6923. A Practicum in Archival Administration. (3)** (Prerequisite: HI 4913/6913). Nine hours laboratory. In-service training in processing manuscript materials including a semester assignment of handling all facets of a manuscript collection.

**HI 4990/6990. Special Topics in History. (1-9)** (Credit and title to be arranged). This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

### General

**HI 7000. Directed Individual Study.** Hours and credits to be arranged.

**HI 8000. Thesis Research and Thesis.**

**HI 8803. Graduate Colloquium. (3)** (Prerequisite: Graduate standing). Three hours lecture. Topical focus to be determined by the faculty member conducting the colloquium. (May be taken for credit more than once).

**HI 8923. Historiography and Historical Method. (3)** (Prerequisite: Graduate standing). Three hours lecture. The writings and interpretations of leading European and American historians; bibliographical aids in history; methods of research; preparation of bibliographies; practice in writing a research paper.

**HI 8990. Special Topics in History. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**HI 9000. Dissertation Research and Dissertation.**

#### Directed Readings

**HI 8103. Readings in Colonial American History. (3)** (Prerequisite: Graduate standing).

**HI 8113. Readings in U.S. History, 1783-1825. (3)** (Prerequisite: Graduate standing).

**HI 8123. Readings in Jacksonian America. (3)** (Prerequisite: Graduate standing).

**HI 8133. Readings in the Civil War and Reconstruction. (3)** (Prerequisite: Graduate standing).

**HI 8153. Readings in U.S. History, 1877-1917. (3)** (Prerequisite: Graduate standing).

**HI 8163. Readings in Contemporary United States. (3)** (Prerequisite: Graduate standing).

**HI 8203. Readings in American Diplomatic History. (3)** (Prerequisite: Graduate standing).

**HI 8233. Readings in American Military History. (3)** (Prerequisite: Graduate standing).

**HI 8263. Readings in American Economic Developments. (3)** (Prerequisite: Graduate standing).

**HI 8273. Readings in Women in American History. (3)** (Prerequisite: Graduate standing).

**HI 8283. Readings in Women in Southern History. (3)** (Prerequisite: Graduate standing).

**HI 8293. Readings in History of American Families. (3)** (Prerequisite: Graduate standing).

**HI 8303. Readings in the Old South. (3)** (Prerequisite: Graduate standing).

**HI 8313. Readings in the New South. (3)** (Prerequisite: Graduate standing).

**HI 8323. Readings in the American West. (3)** (Prerequisite: Graduate standing).

**HI 8353. Readings in African-American History and Culture. (3)** (Prerequisite: Graduate standing).

**HI 8733. Readings in Colonial Latin America. (3)** (Prerequisite: Graduate standing).

**HI 8743. Readings in Latin-American Republics. (3)** (Prerequisite: Graduate standing).

**HI 8403. Readings in Ancient History. (3)** (Prerequisite: Graduate standing).

**HI 8423. Readings in Medieval History. (3)** (Prerequisite: Graduate standing).

**HI 8443. Readings in Renaissance and Reformation. (3)** (Prerequisite: Graduate standing).

**HI 8503. Readings in European History, 1600-1789. (3)** (Prerequisite: Graduate standing).

**HI 8523. Readings in European History, 1789-1914. (3)** (Prerequisite: Graduate standing).

**HI 8533. Readings in European History, 1914-Present. (3)** (Prerequisite: Graduate standing).

**HI 8613. Readings in English History, 1485-1714. (3)** (Prerequisite: Graduate standing).

**HI 8623. Readings in English History Since 1714. (3)** (Prerequisite: Graduate standing).

**HI 8753. Readings in Russian History. (3)** (Prerequisite: Graduate standing).

**HI 8763. Readings in the Far East. (3)** (Prerequisite: Graduate standing).

#### Seminars

**HI 8813. Seminar in U.S. History Before 1877. (3)** (Prerequisite: Graduate standing).

**HI 8823. Seminar in U.S. History Since 1877. (3)** (Prerequisite: Graduate standing).

**HI 8833. Seminar in Southern History. (3)** (Prerequisite: Graduate standing).

**HI 8843. Seminar in Latin-American History. (3)** (Prerequisite: Graduate standing).

**HI 8853. Seminar in European History Before 1789. (3)** (Prerequisite: Graduate standing).

**HI 8863. Seminar in European History Since 1789. (3)** (Prerequisite: Graduate standing).

**HI 8883. US Agricultural History, 1500-2000. (3)** (Prerequisite: Graduate standing). Three hours seminar. An intensive study of agricultural and rural development in the United States and its impact on social, economic, and political changes.

**HI 8913. Seminar in Quantitative Methods for Historical Research. (3)** (Prerequisite: Graduate standing).

### School of HUMAN SCIENCES

Office: 128 Lloyd-Ricks

Interim Director: Gary B. Jackson

Professors Dodson and Taylor;

Associate Professors Bateman, P. Miller, and Oakley;

Assistant Professors Byrd, Cheek, Lokken, Malone, and B. Miller;

Instructor Sutphin; Lecturer: Bioley, Batchelder, Boutwell, Carroll, Hauser,

Johnson, Jones, Lewis, and Matich

**HS 1711. Professional Protocol. (1)** One hour lecture. The essentials of professional protocol and accepted standards of social usage.

**HS 1523. Visual Design in Dress. (3)** Three hours lecture. Application of basic art principles to selection and design of clothing; physical, cultural, social, aesthetic, and psychological aspects of dress.

**HS 1533. Apparel Design I. (3)** One hour lecture. Four hours laboratory. Principles of clothing construction; problems involving fabric selection, use of commercial patterns, basic fitting.

**HS 1701. Survey of Human Sciences. (1)** One hour lecture. Introduction to the field of human sciences through a study of its history and the variety of professional careers available.

**HS 1802. Professional Seminar I. (2)** Two hours lecture. Overview of individual development and the family life cycle with emphasis on professional opportunities in the field.

**HS 2203. Science of Food Preparation. (3)** One hour lecture. Four hours laboratory. A study of foods and the principles underlying handling and preparation of food products to maintain the highest standard of quality.

**HS 2233. Meal Management. (3)** One hour lecture. Four hours laboratory. Planning, preparing, and serving meals; emphasis on management of time, energy, and money in relation to feeding the family.

**HS 2273. Introduction to Hospitality Beverages. (3)** Three hours lecture. Overview of history, identification and management of hospitality beverages and the venues from which they are served.

**HS 2283. Child Health and Nutrition. (3)** Three hours lecture. Nutrition requirements during pregnancy and lactation, and of infants and young children; birth defects from metabolic errors; related health of young children.

**HS 2293. Individual and Family Nutrition. (3)** Three hours lecture. Fundamental principals of human nutrition and the practical application of this knowledge in the selection of adequate diets.

**HS 2523. Introductory Textiles. (3)** (Prerequisite: CH 1043). Two hours lecture. Two hours laboratory. A basic study of fibers, yarns, fabric structure, and factors influencing selection, appearance, care and serviceability of textiles and fabrics.

**HS 2553. Fashion Merchandising. (3)** Three hours lecture. A survey of the entire fashion industry as it relates to fashion merchandising.

**HS 2573. Microcomputer Applications for Human Sciences. (3)** Two hours lecture. Two hours laboratory. Application of microcomputer technology for human sciences.

**HS 2593. Apparel/Sewn Product Analysis and Evaluation. (3)** Two hours lecture. Two hours laboratory. Analysis of design and construction entities that affect cost, consumer perception, consumer satis-

faction, marketability and profits of various items of apparel/sewn products.

**HS 2613. Introduction to Interior Environments. (3)** (Prerequisite: ART 1123 or consent). Two hours lecture. Two hours laboratory. Introduction to design theory and its application in the development of criteria for interior environments.

**HS 2633. Interior Materials, Treatments and Resources. (3)** (Prerequisite: HS 2523 or concurrent enrollment). Three hours lecture. Materials, equipment, services and resources available to the interior designer for meeting clients' needs.

**HS 2803. Pre-natal and Infant Development. (3)** Two hours lecture. Two hours laboratory. Biological and environmental influences; behavioral and developmental patterns, from the onset of pregnancy to toddlerhood.

**HS 2813. Child Development I. (3)** (Prerequisite: PSY 1013). Two hours lecture. Two hours laboratory. Developmental characteristics of children with emphasis on the early years; implications for care and guidance. Observation and participation in the Child Development and Family Studies Center.

**HS 2990. Special Topics in Human Sciences. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**HS 3000. Field Experience. (1-6)** (Prerequisite: Consent of instructor). Supervised field experience for human sciences students; an internship in an approved, option-related situation.

**HS 3113. Wine Appreciation. (3)** Three hours lecture. Principles of wine identification, evaluation and service with emphasis on the wines of Europe and the United States.

**HS 3263. Nutrition Research in Food and Nutrition. (3)** (Prerequisites: ST 2113, HS 2293). Two hours lecture. Two hours laboratory. Introduction to food and nutrition research methods, application of computer and related technologies in nutrition research through design and development of a research project.

**HS 3273. Beverage Systems Management. (3)** (Prerequisite: HS 2273 or consent of instructor). Three hours lecture. Operation of hospitality beverage facilities. Includes design, staffing, training, responsible service, procurement, pricing, systems controls and marketing.

**HS 3274. Quantity Food Production and Service. (4)** (Prerequisite: HS 2233 or consent of instructor). One hour lecture. Eight hours laboratory. Principles and methods of preparation and service of food in quantity.

**HS 3283. Food Service Organization and Management. (3)** Three hours lecture. Introduction to the foodservice system concept, functional subsystems, and management of financial and human resources.

**HS 3303. Consumer Economics. (3)** (Prerequisite: EC 2113 or Junior Standing and consent of instructor). Three hours lecture. Economic principles as they apply to consumer situations, and the consumer's relation to the American and world economy.

**HS 3553. Fashion Retailing. (3)** (Prerequisites: HS 2553 or consent of instructor). Three hours lecture. Specific problems, procedures and practices in fashion retailing.

**HS 3563. Visual Merchandising. (3)** (Prerequisite: HS 2553 or consent of instructor). Two hours lecture. Two hours laboratory. Principles of window and interior display, individual and group participation in designing and executing displays for commercial and educational purposes.

**HS 3573. Historic Costume. (3)** Two hours lecture. Two hours laboratory. Survey of costume from prehistoric to modern times with emphasis on social, cultural, political, and technological changes impacting fashion, preservation, documentation, and exhibition of artifacts.

**HS 3593. Merchandising and Promotion Strategies. (3)** (Prerequisite: HS 2553 or consent of instructor). Three hours lecture. A study of fashion presentation techniques and production requirements in the primary, secondary and retail settings.

**HS 3611. Portfolio Presentation: Methods and Media. (1)** (Prerequisites: HS 2613, ART 1213, ART 1133, EG 1513). One hour lecture. Portfolio presentation techniques for the professional practice of interior design.

**HS 3623. Space Planning. (3)** (Prerequisite: HS 2613). Two hours lecture. Two hours laboratory. Physical and socio-economic aspects of planning residential and non-residential spaces.

**HS 3643. History of Interiors I. (3)** Three hours lecture. A survey of furniture styles, ornament, designers, and accessories associated with period interiors from the early Egyptian period through 1850.

**HS 3653. History of Interiors II. (3)** (Prerequisite: HS 3643 or consent of instructor). Three hours lecture. Technological advancement and

subsequent evolution of design philosophies reflected in furnishings and interiors of the late nineteenth and twentieth centuries.

**HS 3663. Color and Lighting for Interiors. (3)** (Prerequisite: HS 2613). One hour lecture. Four hours laboratory. Concentrated study of color and light relationships as they apply to the visual, technical and functional aspects of interior spaces.

**HS 3673. Environments for Special Needs. (3)** (Prerequisite: HS 2613 or consent of instructor). Three hours lecture. Laws, attitudes, conditions, specifications, and environmental issues affecting private and public spaces.

**HS 3803. Child Care Procedures. (3)** (Prerequisites: HS 2813). Two hours lecture. Two hours laboratory. Selection of appropriate equipment and supplies; program planning for nursery school and day care centers, observation and participation in the Child Development Center.

**HS 3813. Child Development II. (3)** (Prerequisites: HS 2813 and junior standing). Three hours lecture. An intensified exploration of child development theory, research and methodology used in the study of the young child (birth to five). Major emphasis on process of development.

**HS 3823. Designing Child Care Programs. (3)** (Prerequisites: HS 3803 and HS 3813). Two hours lecture. Two hours laboratory. Designing programs for nursery-age children with emphasis on children's developmental characteristics as related to appropriate learning experiences.

**HS 4000. Directed Individual Study in Human Sciences.** Hours and credits to be arranged.

**HS 4193/6193. Social and Cultural Aspects of Food. (3)** Three hours lecture. A study of international, regional and religious history, customs, beliefs and other impacts upon food preparation and consumption.

**HS 4213. Nutrition Public Policy and Promotion. (3)** (Prerequisite: HS 2293). Three hours lecture. Addresses the role of the public and private sectors in identifying and addressing the nutritional needs of various population groups.

**HS 4233/6233. Medical Nutrition Therapy. (3)** (Prerequisites: HS 3213, HS 4223, BCH 3613, BIO 2014 or consent of instructors). Two hours lecture. Two hours laboratory. Treatment of human diseases through nutrient modification. (Same as NTR 6233)

**HS 4243/6243. Nutrition Throughout the Life Cycle. (3)** (Prerequisite: HS 4223/6223 or consent of instructor). Three hours lecture. Study of interrelationships of physiological, biochemical and sociological factors and nutrient needs of individuals and groups during the life cycle; infancy through the later years. (Same as NTR 6243).

**HS 4253/6253. Human Nutrition I. (3)** (Prerequisites: BIO 2014 and CH 2503 or equivalent). Three hours lecture. Advanced human nutrition: digestion, metabolism, function, requirements, and recommendations for carbohydrates, lipids, proteins and water. (Same as NTR 4253/6253).

**HS 4273/6273. Nutritional Assessment. (3)** (Prerequisite: BCH 3613 and HS 4223 or equivalent). Two hours lecture. Two hours laboratory. Selection, utilization, interpretation, and evaluation of anthropometric, laboratory, clinical and dietary methods available for the assessment of nutritional status.

**HS 4274/6274. Advanced Food Service Management. (4)** (Prerequisites: HS 3274, HS 4283). One hour lecture. Eight hours laboratory. Practical experience in the management of quantity food production for specialty dinners and catering, including purchasing and cost accounting.

**HS 4283/6283. Purchasing Food and Equipment for Foodservice Systems. (3)** Three hours lecture. Procuring food and equipment for foodservice systems. Product specifications, cost-effectiveness, value analysis, and quality standards.

**HS 4293/6293. Human Nutrition II. (3)** (Prerequisites: BIO 4253/6253 or consent of instructor). Three hours lecture. Advanced human nutrition and metabolism with emphasis on the functions, requirements, and recommendations of the regulatory nutrients (vitamins and minerals) and water. (Same as NTR 4293/6293).

**HS 4313/6313. Family Resource Management. (3)** Three hours lecture. Decision-making in the family and operation of the household as affected by family values, philosophies, resources, and socio-economic conditions.

**HS 4323/6323. Consumer Issues and Policy. (3)** (Prerequisite: HS 3303 or consent of instructor). Three hours lecture. An assessment of policies and programs relating to information, product safety, and channels of appeal for the individual.

**HS 4333/6333. Families, Legislation and Public Policy. (3)** (Prerequisite: Junior Standing). Three hours lecture. An examination of the impact of legislation and public policy on the well being of the family with emphasis on policy and family change.

**HS 4343/6343. Apparel Design II. (3)** (Prerequisite: HS 1533 or consent). One hour lecture. Four hours laboratory. Advanced problems

and techniques for clothing construction; creative expression through application of techniques of flat pattern design.

**HS 4403. Introduction to Gerontology. (3)** Three hours lecture. An introduction to the dynamics of the aging process and strategies for maximizing life satisfaction during aging.

**HS 4423/6423. Teaching Human Sciences. (3)** (Prerequisite: Consent of advisor). Three hours lecture. The function of human sciences education in the educational system. Curriculum structure, classroom methods, media and evaluation.

**HS 4440/6440. Workshop in Human Sciences. (1-3)** This course addresses current issues in human sciences.

**HS 4450/6450. Work Experience in Human Sciences Related Occupations. (3-6)** Work experience in two phases of occupational human sciences, development of a program of work, and incorporating the work experience into curricula.

**HS 4462. Curriculum in Human Sciences. (2)** (Prerequisites: Senior standing and admission to Teacher Education). Two hours lecture. Spring semester. Bases for curriculum planning, exemplar curriculum, and customizing curriculums.

**HS 4513/6513. Social-Psychological Aspects of Clothing. (3)** (Prerequisite: Three hours Sociology or Psychology). Three hours lecture. Exploration of the sociological and psychological aspects of wearing apparel; man's response to and use of clothing as an aspect of behavior at different life stages.

**HS 4523/6523. Problems In Consumer Textiles. (3)** (Prerequisite: HS 2523). Three hours lecture. In-depth study of consumer selection of contemporary textiles; end-use performance and care; opportunity for individual investigation and analysis.

**HS 4563. Intermediate Textiles. (3)** (Prerequisite: HS 2523). Two hours lecture. Two hours laboratory. A basic study of dyes, color applications, finishes and physical testing used in manufacturing textiles.

**HS 4583/6583. Home-Based Entrepreneurship. (3)** Three hours lecture. Exploration of services/products that have potential for home-based businesses with emphasis on business, marketing, and management skills necessary for operation of these businesses.

**HS 4613/6613. Residential Interior Design Studio I. (3)** (Prerequisite: HS 2613, HS 4733 or concurrent enrollment). One hour lecture. Four hours laboratory. Integration of the total living environment, through the application of the design elements and technical aspects of the field.

**HS 4623/6623. Commercial Interior Design Studio I. (3)** (Prerequisite: HS 4613). One hour lecture. Four hours laboratory. Actual practice in the commercial design field through the execution of commercial design problems.

**HS 4643/6643. Residential Interior Design Studio II. (3)** (Prerequisite: HS 4613). One hour lecture. Four hours laboratory. Integration of the total living environment, through the application of the design elements and technical aspects of the interior design field.

**HS 4653/6653. Commercial Interior Design Studio II. (3)** (Prerequisite: HS 4623/6623). One hour lecture. Four hours laboratory. Advanced study of commercial interior design problems through the individual research and the execution of design solutions.

**HS 4663/6663. Professional Procedures and Practices for Interior Designers. (3)** (Prerequisite: HS 4613, HS 4623). Three hours lecture. Professional opportunities as they relate to individual competencies. Study of studio procedures, ethics, business and legal aspects. Preparation of resume and portfolio presentation.

**HS 4683/6683. Current Housing Problems of Families. (3)** (Prerequisite: Junior standing). Three hours lecture. Analysis of current housing problems confronting families, their historical development, government policies and remedial measures.

**HS 4693. Furniture Design. (3)** (Prerequisite: EG 1513, HS 3643, HS 3653 and consent of instructor). Two hours lecture. Two hours laboratory. Exploration of the basic methods and processes of furniture design.

**HS 4701. Internship Placement Seminar. (1)** (Prerequisite: Junior standing and consent of instructor). One hour lecture. Preparation for an internship in a chosen specialization.

**HS 4702. Human Sciences Senior Seminar. (2)** (Prerequisite: Senior standing in Human Sciences). Two hours lecture. Examination of current societal issues and trends using an integrative approach. Emphasis on professional development and effectiveness in Human Sciences.

**HS 4710/6710. Study Tour. (1-3)** Experiential learning through travel in the United States or abroad focusing on specialized areas of study in human sciences.

**HS 4733/6733. Computer-Aided Design for Human Sciences. (3)** (Prerequisites: CS 1013 or equivalent). Two hours lecture. Two hours laboratory. Applications of computer-aided design for interior design,

fashion merchandising, child development, human sciences education, consumer economics, foods and nutrition.

**HS 4750. Internship. (6-8)** (Prerequisite: Minimum of senior standing, 2.0 and consent of instructor). Individual work experience in an approved setting under supervision of Mississippi State University faculty.

**HS 4803/6803. Art of Parenting. (3)** (Prerequisite: Junior standing). Three hours lecture. Study of the child as a part of the family in a dynamic transactional system. Emphasis on economics, stress, practical problems and child services.

**HS 4813/6813. Adult Development: The Middle Years. (3)** (Prerequisite: PSY 1013 and junior standing). Three hours lecture. Theory and perspectives on adulthood in contemporary society, adjustment to internal and environmental changes, role structures, supportive networks and public policy issues.

**HS 4823/6823. Development and Administration of Child Service Programs. (3)** (Prerequisite: HS 3813 or concurrent enrollment). Three hours lecture. Planning, administering, and evaluating the organizational structure of a variety of child service programs.

**HS 4834. The Hospitalized Child. (4)** (Prerequisites: HS 3813 or concurrent enrollment, junior standing and permission of the instructor). Three hours lecture. Two hours laboratory. A pre-practicum development approach to the special needs of the hospitalized infant, child, and adolescent.

**HS 4843/6843. Family Interaction. (3)** (Prerequisites: SO 1203 and PSY 1013 or HS 4853). Three hours lecture. Interaction within functional families; focus on the family as a system, on diversity and roles, and on effective interactions.

**HS 4853/6853. The Family: A Transactional Approach. (3)** (Prerequisite: Three hours Sociology or Psychology and Junior Standing). Three hours lecture. The impact of internal and external factors on the development of individual and family relationships throughout the life cycle.

**HS 4863/6863. Consumer Aspects of Aging. (3)** (Prerequisite: HS 3303 or consent of instructor). Three hours lecture. Analysis of the decisions, issues and research related to the consumer aspects of aging from a global and national perspective.

**HS 4886, 4896. Student Teaching Vocational Human Sciences. (6,6)** (Both courses to be taken concurrently). (Prerequisites: Admission to Teacher Education and senior standing). Supervised observation and directed teaching in respective field of endorsement.

**HS 4990/6990. Special Topics in Human Sciences. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**HS 7000. Directed Individual Study in Human Sciences.** Hours and credits to be arranged.

**HS 8233. Maternal, Infant, and Child Nutrition. (3)** Three hours lecture. Nutritional needs during reproduction and growth; problems in nourishing women during the reproductive period, infants, and children; indices of growth and development. (Same as NTR 8233.)

**HS 8243. Community Nutrition. (3)** (Prerequisite: HS 3213 or consent of instructor). Three hours lecture. Nutrition services and problems in the community. Supervised experience in methods for determining and implementing action programs in nutrition education. (Same as NTR 8243.)

**HS 8261. Dietetic Internship Seminar. (1)** (Prerequisite: Admission into the School of Human Sciences Dietetic Internship/Graduate Studies Program). One hour lecture. Selection of current topics in foods, nutrition or dietetics and in-depth review of current literature for critical analysis presentation. (Same as NTR 8261).

**HS 8273. Dietetic Internship Capstone. (2)** (Prerequisite: Admission into the School of Human Sciences Dietetic Internship/Graduate Studies Program). Three hours lecture. Theoretical aspects of dietetics gained through the study of resources, technology, professional standards, and other factors that influence entry-level practice.

**HS 8286. Supervised Practice Experience. (6)** (Prerequisite: Admission into the School of Human Sciences Dietetic Internship/Graduate Studies Program). Supervised practice experiences in clinical, community, and food service systems settings. May be repeated for credit.

**HS 8523. Advanced Textiles. (3)** (Prerequisite: HS 2523 and HS 4563) Three hours lecture. Mechanics of textiles related to performance, health, safety, protection degradability and recycling; non-woven processing of specialty fiber-fabrics; barrier textiles and industrial fabrics.

**HS 8990. Special Topics in Human Sciences. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**INTERNATIONAL BUSINESS**

Office: 355-356 McCool Hall

Director: Lox

**IB 2990. Special Topics in International Business. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**IB 3900. Internship Work. (1-6).** (Prerequisite: approval of the International Business Director). Business topics examined by student during work semester. Student evaluations are assigned on satisfactory/unsatisfactory basis.

**IB 3913. Principles of International Business. (3)** (Prerequisites: Senior standing in business or consent of instructor.) An overview of the major forms of international business: Exports and imports, overseas investments, production and marketing operations, licensing, financing and other international business services.

**IB 4903. Internship Academic Report. (3)** (Prerequisite: Satisfactory performance in IB 3900). Individual work experience under faculty guidance in business. Scholarly paper on approved topic required.

**IB 4990/6990. Special Topics in International Business. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis

to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**IB 8612. Managing in the Global Business Environment. (2)** Two hours lecture. Analysis of the global environmental elements which impact and are impacted by organizations: global politics and economics, culture, international competition, natural resources, technology. (Same as MGT 8612).

**IB 8913. International Business Environment. (3)** (Prerequisites: The equivalent of ACC 2023, EC 2123, FIN 3113, FIN 3123, MGT 4113, and MKT 3013 or consent of instructor). Study of the management problems, strategies, and techniques arising from the international transfer of goods, services, human resources, technology, finance, or ownership.

**IB 8990. Special Topics in International Business. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**Department of INDUSTRIAL ENGINEERING**

Office: 125 McCain Engineering Building

Professors Brown (head), Bowden, Bullington, and Usher;

Professors Emeriti Cotton, Parker, and Oswalt;

Associate Professors Duffy, Greenwood, and Smyer

Assistant Professors Jin, Kim, and McGilberry

**IE 1911. Introduction to Industrial Engineering. (1)** Three hours laboratory. Concepts of industrial engineering, emphasizing the total systems approach. Introduction to analysis and design of general and industrial systems.

**IE 2990. Special Topics in Industrial Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**IE 3113. Motion and Time Study. (3)** Two hours lecture. Two hours laboratory. A study of the techniques for analysis of production systems, the design of work stations, and the development of time standards. (for non-IE students). (Same as TKI 3363).

**IE 3124. Industrial Ergonomics. (4)** (Co-requisite: IE 4613). Three hours lecture. Three hours laboratory. Analysis of work tasks; ergonomic design principles for manual work design, workplace design, and work environment design; work measurement; and design of wage payment plans.

**IE 3323. Manufacturing Processes. (3)** (Prerequisites: Grade of C or better in IE 3913, Co-requisites: CHE 3413 and IE 4613). Two hours lecture. Three hours laboratory. Manufacturing processes and materials; interrelationship of product design, material properties, and processing methods; robotics and CAM systems; economic factors in material, process, and equipment selection.

**IE 3913. Engineering Economy I. (3)** (Prerequisite: MA 1713). Three hours lecture. Principles of evaluating alternative engineering proposals. Economic measures of effectiveness, costs and cost estimates, basic comparative models, break even and replacement analysis.

**IE 3934. Information Systems for Industrial Engineering. (4)** (Corequisite: IE 1911). Three hours lecture. Three hours laboratory. An introduction to the design and development of information systems for use in industrial engineering applications.

**IE 4000. Directed Individual Study.** Hours and credits to be arranged.

**IE 4113/6113. Human Factors Engineering. (3)** (Prerequisite: Junior standing in engineering). Two hours lecture. Three hours laboratory. Human capabilities and limitations affecting communications and responses in man-machine systems. Emphasis on physiological and psychological fundamentals.

**IE 4123/6123. Psychology of Human-Computer Interaction. (3)** (Prerequisite: PSY 3713 or CS 4663/6663 or IE 4113/6113 or consent of the instructor). Two hours lecture. Two hours laboratory. Exploration of psychological factors that interact with computer interface usability. Interface design techniques and usability evaluation methods are emphasized. (Same as CS 4673/6673 and PSY 4743/6743).

**IE 4173/6173. Occupational Safety Engineering. (3)** (Prerequisite: Junior standing). Three hours lecture. Causes and prevention of industrial accidents. Analysis of hazardous processes and materials. Design of occupational safety systems and programs.

**IE 4333/6333. Production Control Systems I. (3)** (Prerequisite: Grade of C or better in IE 4613). Three hours lecture. Principles, analysis, and design of production and inventory planning and control. Demand forecasting, production scheduling and control systems and introduction to CPM.

**IE 4353/6353. Materials Handling. (3)** (Prerequisite: IE 3123). Three hours lecture. Analysis and design of materials handling systems and components. Introduction to facilities design.

**IE 4373/6373. Automation. (3)** Two hours lecture. Three hours laboratory. Introduction to the various technologies used in both design and manufacturing automation.

**IE 4393/6393. Concurrent Engineering. (3)** (Prerequisite: Junior or Senior standing). Three hours lecture. An introduction to the implementation, application, and management of concurrent engineering, as well as, the tools and techniques that support new product development.

**IE 4513/6513. Engineering Administration. (3)** (Prerequisite: Senior or graduate standing in engineering). Three hours lecture. Study of problems confronting the engineering manager. Includes: Organization and communication theory, internal and external relationships and responsibilities, and designing and implementing managerial systems.

**IE 4533/6533. Project Management. (3)** (Prerequisites: Grade of C or better in IE 4613). Three hours lecture. Use of CPM, PERT, and GERT for planning, managing and controlling projects. Computer procedures for complex networks.

**IE 4543/6543. Logistics Engineering. (3)** (Prerequisite: IE 4613 and senior or graduate standing). Three hours lecture. Analysis of complex logistics networks. Integration or supply, production, inventory, transportation, and distribution. Strategies for reducing logistics costs and lead times. Customer-supplier partnerships.

**IE 4553/6553. Engineering Law and Ethics. (3)** (Prerequisite: Senior standing in engineering). Three hours lecture. The engineer and his relations to the law, to the public, and the ethics of his profession. Includes contracts, patents, copyrights, sales agreements, engineering specifications.

**IE 4573/6573. Process Improvement Engineering. (3)** Three hours lecture. Introduction to quality and productivity improvement methodologies and tools. The design and implementation of continuous improvement systems in organizations.

**IE 4613/6613. Engineering Statistics I. (3)** (Prerequisite: MA 1723). Three hours lecture. Introduction to statistical analysis. Topics include: probability, probability distributions, data analysis, and statistical inferences. Simple, multiple, and polynomial models for regression and correlation.

**IE 4623/6623. Engineering Statistics II. (4)** (Prerequisite: Grade of C or better in IE 4613). Three hours lecture. Continuation of IE 4613/6613. Introduction to engineering applications of regression, experimental design and analysis, and nonparametric methods.

**IE 4653/6653. Industrial Quality Control I. (3)** (Prerequisite: IE 4613). Three hours lecture. The theory and application of statistical quality control: statistical process control and statistical acceptance sampling.



**IE 4673/6673. Reliability Engineering. (3)** (Prerequisites: IE 4613 and MA 3253). Three hours lecture. Probability functions and statistical methods for component life testing and system reliability prediction. System availability and maintainability. Redundancy in time-dependent and time-independent situations.

**IE 4713/6713. Operations Research I. (3)** (Prerequisites: CS 1213 and IE 4613). Mathematical techniques of decision making, queuing, networks, simulation and dynamic programming.

**IE 4733/6733. Linear Programming I. (3)** (Prerequisites: CS 1213 and MA 3113). General theory of linear programming and its application; the simplex algorithm, revised simplex algorithm, duality, sensitivity transportation algorithm, assignment algorithm network analysis, and goal programming. (Same as MA 4733/6733).

**IE 4753/6753. Systems Engineering and Analysis. (3)** (Prerequisite: IE 4613). Three hours lecture. Systems concepts, methodologies, models, and tools for analyzing, designing, and improving new and existing human-made systems.

**IE 4773/6773. Systems Simulation I. (3)** (Prerequisites: CS 1233 or equivalent and grade of C or better in IE 4613). Three hours lecture. Introduction to mathematical techniques of queuing and the principles of stochastic simulation. The statistics of simulation. Use of C programming and special purpose simulation languages.

**IE 4915/6915. Design of Industrial Systems. (5)** (Prerequisites: Grade of C or better in the following courses : IE 3124, IE 3323, and IE 4333). Two hours lecture. Eight hours laboratory. The fundamental procedures and techniques in design of operational systems. Emphasis on both sub-systems and total systems.

**IE 4990/6990. Special Topics in Industrial Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**IE 7000. Directed Individual Study.** Hours and credits to be arranged.

**IE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**IE 8153. Cognitive Engineering. (3)** Three hours lecture. Implications of human perceptual, cognitive, and psycho-motor capabilities on the design of systems for effective, efficient and safe human-machine performance.

**IE 8333. Production Control Systems II. (3)** (Prerequisites: IE 4333 and consent of instructor). Three hours lecture. Inventory systems, static and dynamic production planning, operations scheduling and forecasting systems.

**IE 8343. Artificial Intelligence in Manufacturing. (3)** (Prerequisite: Computer programming ability and consent of instructor). Three hours lecture. Introduction to artificial intelligence techniques used in manufacturing. Topics include the application of expert systems, neural networks, machine learning, and discussion of current research.

**IE 8353. Manufacturing Systems Modeling. (3)** (Prerequisites: IE 4733 and IE 4773). Three hours lecture. A study of models used to de-

scribe and analyze manufacturing systems. Development of models using queuing networks, mathematical programming, simulation, and other techniques.

**IE 8373. Computer Integrated Manufacturing. (3)** (Consent of instructor). Three hours lecture. An investigation of computer integrated manufacturing and the technologies that support its implementation.

**IE 8583. Enterprise Systems Engineering. (3)** (Prerequisite: Consent of Instructor). Three hours lecture. Focuses on the design and improvement of an enterprise through the use of engineering tools and methods, based on the systems perspective of industrial engineering.

**IE 8713. Mechanics and Control of Manufacturing Systems. (3)** Three hours lecture. Design and operation of computer controlled machine tools. Kinematics and control of robot manipulators. Industrial applications of robots. (Same as ME 8713).

**IE 8723. Operations Research II. (3)** (Prerequisite: IE 4713). Problem formulation, general inventory theory, restricted inventory models. Markovian and queuing processes, sequencing and coordination, game theory, search problems.

**IE 8733. Decision Theory. (3)** (Prerequisite: IE 4613). Three hours lecture. A quantitative development of the decision making process. Criteria for decision making. Treatment of risk under uncertainty and in conflict situations.

**IE 8743. Nonlinear Programming I. (3)** (Prerequisite: IE 4733 or MA 4733). Three hours lecture. Optimization of nonlinear functions; quadratic programming, gradient methods, integer programming; Lagrange multipliers and Kuhn-Tucker theory.

**IE 8753. Dynamic Programming. (3)** (Prerequisites: MA 2733 and IE 4613). Three hours lecture. Study of serial and nonserial multistage systems—both deterministic and stochastic. Principles of optimality. Application of dynamic programming to industrial and management problems.

**IE 8773. Systems Simulation II. (3)** (Prerequisite: IE 4773/6773). Three hours lecture. Continuation of IE 4773/6773. Includes: Advanced theory and practice of simulation. The statistics of simulation. Simulation languages. Continuous simulations.

**IE 8783. Neural Networks in Optimization. (3)** (Prerequisites: IE 4733/6733). Three hours lecture. A study of neural network models and their applications to optimization problems.

**IE 8913. Engineering Economy II. (3)** (Prerequisites: IE 3913 and IE 4713). Three hours lecture. Advanced principles and methods for engineering analysis of industrial problems. Topics include criteria for decisions, project investment and analysis, and elements of risk and uncertainty.

**IE 8990. Special Topics in Industrial Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**IE 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## INSURANCE, RISK MANAGEMENT, and FINANCIAL PLANNING

Office: 326 McCool Hall

(For departmental information, see FINANCE and ECONOMICS.)

**INS 3413. Introduction to Personal Financial Planning. (3)** (Cross listed with FIN 3003). Three hours lecture. The individual's acquisition and management of an optimal personal income and expenditure pattern over a lifetime to best meet his/her financial objectives. (Not open to finance majors or as part of GBA Finance Concentration).

**INS 2990. Special Topics in Insurance. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**INS 3103. Principles of Insurance. (3)** (Prerequisite: Junior standing). Three hours lecture. A study of the principles and concepts of insurance plus a survey of personal coverages such as Homeowners, Automobile, Life and Health insurance.

**INS 3203. Property and Casualty Insurance. (3)** Three hours lecture. A study of the major issues in property and casualty insurance including property and liability coverages, company operations, rate making, and international concepts.

**INS 3303. Life and Health Insurance. (3)** Three hours lecture. The nature and function of life insurance; policy forms and provisions; reserves; company organization; legal aspects; taxation and practical application.

**INS 3403. Financial Planning. (3)** (Prerequisites: FIN 3123, and INS 3103, INS 3303 or consent of instructor). Three hours lecture. A study dealing with the problems of the individual in the creating, conserv-

ing, and disposing of an estate through the use of property, securities, and insurance.

**INS 3503. Employee Benefits. (3)** Three hours lecture. A comprehensive study of employee benefit plans available to employers, including the principles and concepts necessary to design and implement successful employee benefit programs.

**INS 4000. Directed Individual Study. (1-3)** Hours and Credits to be arranged with instructor.

**INS 4503/6503. Enterprise Risk Management. (3)** (Prerequisites: FIN 3123, MGT 3113, MKT 3013, or consent of instructor.) Three hours lecture. A study of the principles, concepts and techniques to manage pure risk exposures which organizations face while pursuing their objectives.

**INS 4990/6990. Special Topics in Insurance. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**INS 8512. Enterprise Risk Management Seminar. (2)** (Prerequisite: Consent of instructor). Two hours lecture. A study of the principles, concepts, techniques and implementation to manage those risks which an organization faces while pursuing its goals and objectives.

**INS 8521. International Risk Management. (1)** (Prerequisite: Consent of instructor). One hour lecture. Study of principles, concepts and techniques to manage speculative and pure risk exposures which or-

ganizations face while pursuing their goals and objectives in international commerce.

## INTERNATIONAL STUDENT EXCHANGE

Office: 608 Allen Hall

**ISE 4100-4200. International Student Exchange.** (Prerequisite: Acceptance into the International Student Exchange Program). Grades from the host institution will be transferred and recorded at MSU after each semester the student participates in the program.

**ISE6100-6200. International Student Exchange.** (Prerequisite: Acceptance into the International Student Exchange Program). Grades from the host institution will be transferred and recorded at MSU after each semester the student participates in the program.

## Department of LANDSCAPE ARCHITECTURE

Office: 130 Lloyd Ricks

Professors Man (Head), and Melby ;  
Professor Emeritus Bishop and Martin;  
Associate Professors Clark, and Cook;  
Assistant Professor Milburn, Mulley, Ray, and Wilkerson;

**LA 1153. Introduction to Landscape Architecture. (3)** Six hours studio/lab. Acquaints students with the profession's design vocabulary, application, types of work, and initial experiences dealing with the creation of and evaluation of three dimensional space.

**LA 1172. Freshman Seminar Landscape Architecture. (2)** Two hours seminar. An introduction to the profession of landscape architecture including professional opportunities and an overview of the body of the knowledge.

**LA 1223. Use of Computers in Landscape Architecture. (3)** One hour lecture. Four hours studio/lab. A review of computer technology and its application to the practice of Landscape Architecture.

**LA 1253. Design Fundamentals in Landscape Architecture. (3)** One hour lecture. Six hours studio/lab. The investigation and application of problem solving techniques, learning of basic drawing fundamentals, and exploration of the nature of creativity associated to landscape architecture issues.

**LA 1701. Introduction to Landscape Contracting. (1)** Two hours laboratory. A survey of the construction industry with emphasis on landscape contracting and the roles of principals involved. Opportunities in the landscape industry.

**LA 1712. Landscape Contracting Internship I. (2)** (Prerequisites: LA 1701; completion of 12 hours; 2.0 GPA). Internship of planned, progressive and supervised experiential learning with a landscape contracting firm.

**LA 1803. Landscape Architecture Appreciation. (3)** Three hours lecture. A survey of landscape architecture encompassing design, construction, management, maintenance and practice. Emphasis on development and improvement of home, neighborhood and community environment. (For non-majors.)

**LA 2323. Presentation Methods and Media. (3)** (Prerequisite: None; recommended: ART 1123 & ART 1213). Six hours studio/lab. Delineation and professional presentation techniques for the practice of Landscape Architecture utilizing traditional and contemporary presentation approaches.

**LA 2334. Plant Specifications For Small Properties. (4)** (Prerequisite: PSS 3473). One hour lecture. Six hours studio. Plant selection, design and specifications for small properties in response to environmental conditions and user needs.

**LA 2423. History of Landscape Architecture. (3)** Three hours lecture. Historic developments of Landscape Architecture Profession.

**LA 2433. Landscape Systems and Plant Communities. (3)** One hour lecture. Four hours laboratory. The nature, scope and relevancy of landscape systems and their respective plant communities as they relate to land planning and landscape architectural design.

**LA 2453. Site Inventory and Analysis. (3)** One hour lecture. Four hours studio/lab. The collection, presentation, and use of pertinent site related data. Conventional non-technical methods of presentation of data and computer generated formats are considered and analyzed.

**LA 2701. Landscaped Contracting Seminar I. (1)** (Prerequisite: LA 1712). One hour lecture. Weekly seminar to investigate topics related to modern landscape practices experienced in LA 1712 LC Internship I. Formal presentations of internship case studies.

**LA 2712. Landscape Contracting Internship II. (2)** (Prerequisites: LA 1712, LA 2701, and 2.00 GPA). Internship of planned, progressive and supervised experiential learning with a landscape contracting firm.

**LA 2990. Special Topics in Landscape Architecture. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses.

(Courses limited to two offerings under one title within two academic years).

**LA 3544. Landscape Architecture Construction I. (4)** (Prerequisite: none; Recommended: ABE 2873 & MA 1323). Two hours lecture. Four hours studio/lab. Course is concerned with land surveying, landscape architecture grading, road alignments and calculations for cut and fill volumes.

**LA 3555. Landscape Architecture Design Studio I. (5)** (Prerequisites: LA 1153, LA 1253, LA 1223, LA 2323, & LA 2453). Two hours lecture. Six hours studio/lab. A landscape architectural design process applied to site planning for small acreages. Emphasis on accommodation and application of design principles to site design elements.

**LA 3603. Design of the Golf Environment. (3)** (Prerequisite: LA 1803). Three hours lecture. Defining site development concerns of a golf complex, addressing areas of history, design, construction and maintenance.

**LA 3623. Urban Planning Theory. (3)** Three hours lecture. Open to majors and non-majors. Survey of principles and practice of urban planning. Emphasis on the planning process and use of a city's police power to regulate use of land.

**LA 3644. Landscape Architecture Construction II. (4)** (Prerequisite: none; Recommended: LA 3544). Two hours lecture. Four hours studio/lab. Calculations for storm-water management, best management practices, surface and subsurface drainage systems, basic hydrology and erosion and sediment control design and practices.

**LA 3652. Case Studies of Executed Works in Landscape Architecture. (2)** (Prerequisite: LA 3655). Special five to ten day on-site observation visit for the study of notable LA projects and construction methods with lectures.

**LA 3655. Landscape Architecture Design Studio II (5)** (Prerequisites: LA 1153, LA 1253, LA 1223, LA 2323 & LA 2453). Two hours lecture. Six hours studio/lab. Deals with program and site specific requirements, inventory and analysis, construction detailing, economic issues, social impact, and planting design applied to medium scale projects.

**LA 3701. Landscape Contracting Seminar II. (1)** (Prerequisite: LA 2712). One hour lecture. Weekly seminar to investigate topics related to modern landscape practices experienced in LA 2712 LC Internship II. Formal presentations of internship case studies.

**LA 3712. Landscaping Contracting Internship III. (2)** (Prerequisites: LA 2712, LA 3701, and 2.00 GPA). Internship of planned, progressive and supervised experiential learning with a landscape contracting firm.

**LA 3713. Landscape Contracting I. (3)** (Prerequisites: ABE 1073 and EG 1513). Two hours lecture. Two hours laboratory. Study of the nature, scope, and application of the varied construction materials used in landscape projects; and, the construction processes related to landscape development.

**LA 3721. Landscape Contracting Field Trip I. (1)** (Prerequisite: LA 1701). Five to ten day trip to visit landscape contracting firms and observe completed works.

**LA 3742. Landscape Architecture Internship. (2)** (Prerequisite: Satisfactory completion of semester six of B.L.A. program with an overall G.P.A. of 3.0 in the Junior Year). Supervised experiential learning with a professional office or public agency.

**LA 4000. Directed Individual Study.** Hours and credits to be arranged.

**LA 4344. Landscape Architecture Construction IV. (4)** (Prerequisites: LA 3274 or consent of instructor). Two hours lecture. Four hours laboratory. Preparation of landscape architectural construction plans,

details, and specifications for outdoor lighting, for irrigation, and for septic systems.

**LA 4701. Landscape Contracting Seminar III. (1)** (Prerequisite: LA 3712). One hour lecture. Weekly seminar to investigate topics related to modern landscape practices experienced in LA 3712 LC Internship III. Formal presentations of internship case studies.

**LA 4721. Landscape Contracting Field Trip II. (1)** (Prerequisite: LA 3721). Five to ten day trip to visit with landscape contracting firms and observe completed works.

**LA 4723. Professional Practice of Landscape Architecture. (3)** Three hours lecture. Office management, contracting, budgeting, design proposals, supervision of construction contracts, professional liability, and professional ethics.

**LA 4724. Landscape Contracting II. (3)** (Prerequisites: LA 3713 or LA 4334). Two hours lecture. Four hours laboratory. Analysis of legal, financial, and management aspects of landscape contracts; and quantity surveying, cost estimation, and critical path management of landscape construction projects.

**LA 4733. Landscape Contracting III. (3)** (Prerequisites: LA 4724, ACC 2013, and MGT 3113). Two hours lecture. Two hours laboratory. Theory and practice of managing a Landscape Construction Firm. Case studies of contemporary issues.

**LA 4744. Landscape Contracting IV. (4)** (Prerequisite: LA 4724 and PSS 4414). Two hours lecture. Two hours laboratory. Application levels studies of post-construction management practices of landscape projects.

**LA 4755. Landscape Architecture Design Studio III. (5)** (Prerequisites: LA 1153, LA 1253, LA 1223, LA 2323 & LA 2453). Two hours lecture. Six hours studio/lab. The design process applied to intermediate size project, with emphasis on providing shelter for society. Integration of techniques for design development into a holistic process.

**LA 4844. Design of Sustainable Communities. (4)** (Prerequisite: none; Recommended: MA 1313 and MA 1323). Three hours lecture. Two hours studio/lab. Nature of materials used in landscape architecture, their physical attributes and liabilities that contribute to their use in a safe and healthy manner.

**LA 4855. Landscape Architecture Capstone Studio. (5)** (Prerequisites: LA 3555, LA 3655, LA 4755, LA 3544, LA 3644, LA 4723). Twelve hours studio/lab. A self-directed course that includes an approved terminal project including proposal, analytical design process, master plan, support drawings, and construction documents of selected plan elements.

**LA 4990/6990. Special Topics in Landscape Architecture. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**LA 5544. Golf Course Architecture I. (4)** (Prerequisite: LA 4445 and PSS 4414). One hour lecture. Six hours studio. Comprehensive stud-

ies of golf course architecture, including analysis, design, irrigation, construction detailing, cost analysis, and management concerns.

**LA 7000. Directed Individual Study.** Hours and credit to be arranged.

**LA 8000. Thesis Research/Thesis.** Hours and credit to be arranged.

**LA 8512. Landscape Architecture Graduate Studio I. (2)** (Prerequisite: admission to the Master of Landscape Architecture). Four hours studio. Emphasis on holistic approaches to sustainable watershed planning and management. Course deals specifically with prevention of destruction of habitat, biological stress, and hydrologic changes.

**LA 8522. Landscape Architecture Graduate Studio II. (2)** (Prerequisite: admission to the Master of Landscape Architecture). Four hours studio. Application of spatial analytical techniques and Geographic Information Systems to the execution of landscape planning problems in the Mississippi region.

**LA 8532. Landscape Architecture Graduate Studio III. (2)** (Prerequisite: second year standing in the Master of Landscape Architecture). Four hours studio. Emphasis on community based planning and design, including consideration of natural resource planning, main street revitalization, open space planning, community design, and small town planning.

**LA 8711. Seminar in Watershed Planning and Management. (1)** (Prerequisite: admission to the Master of Landscape Architecture program or consent of the instructor). One hour seminar. Examination of major elements of watershed planning and management pertinent to landscape architecture, with particular emphasis on emerging trends in the field.

**LA 8721. Seminar in Landscape Management. (1)** (Prerequisite: admission to the Master of Landscape Architecture program or consent of the instructor). One hour seminar. Examination of major elements of landscape management pertinent to landscape architecture, with particular emphasis on emerging trends in the field.

**LA 8731. Seminar in Community Based Planning. (1)** (Prerequisite: second year standing in the Master of Landscape Architecture program or consent of the instructor). One hour seminar. Examination of major elements of community based planning pertinent to landscape architecture, with particular emphasis on emerging trends in the field.

**LA 8741. Seminar in Landscape Architecture Thesis. (1)** (Prerequisite: second year standing in the Master of Landscape Architecture program or consent of the instructor). One hour seminar. Preparation of a detailed proposal, selection of the student's thesis committee, and submission of the proposal to the Graduate Studies Committee for review and approval.

**LA 8990. Special Topics in Landscape Architecture. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years.)

## TEACHING/LEARNING CENTER

Office: 267 Allen Hall

**LSK 0023. Developmental Studies Laboratory. (3)** Six hours laboratory. Computer tutorials and study skills for intermediate algebra, basic English and effective reading. Designed especially for students who have attended the Summer Developmental Program.

**LSK 1001 Freshman Seminar. (1)** Multi-disciplined, campus-wide approach to orientation to the university, and strategies for employing personal and university resources.

**LSK 1013. Effective Reading. (3)** (Is designed to prepare a student to comprehend college level reading materials; does not count toward a degree.) Three hours lecture. Comprehension and vocabulary improvement through the use of computer-aided-instruction and directed group activities.

**LSK 1011. Study Skills for College. (1)** Development of study principles and skills needed for college.

**LSK 1023. College Reading and Study Skills. (3)** Three hours lecture. Development of reading and study skills needed for college.

**LSK 2013. Speed Reading. (3)** Three hours lecture per week. Development of techniques for increasing rate of comprehension for all types of reading material.

**LSK 2990. Special Topics in Learning Skills. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Department of MATHEMATICS and STATISTICS

Office: 410 Allen Hall

Professors Ebanks (Head), Neumann, Razzaghi, Reed, Shivaji, and Xu;

Associate Professors Aktosum, Dang, DuBien, Gerard, Johnson, L. Miller, V. Miller, Oppenheimer, Pearson, Qian and Smith;

Assistant Professors Dobson, Fabel, Harvill, Jonkman, Knudson, Okhuysen, Sarkissian, B. Scarborough and Wu;

Instructor Daniels

Students who have credit for one or more upper division mathematics courses will not receive repeat credit for a mathematics course numbered below MA 2000. Students who have credit for MA 1713 are not permitted to enroll in any mathematics course numbered below MA 1713 without departmental approval.

**MA 0003. Developmental Mathematics. (3)** (MA 0003 is a developmental course designed to prepare a student for university mathemat-

ics courses at the level of MA 1313 College Algebra: credit received for this course will not be applicable toward a degree). Three hours lecture. Real numbers fractions, decimal fractions, percent, algebraic expressions, factoring, algebraic fractions, linear equations/inequalities, integral exponents, quadratic equations.

**MA 0103. Intermediate Algebra. (3)** (MA 0103 is designed to prepare a student for MA 1313 College Algebra) Three hours lecture. Real

numbers, algebraic expressions, factoring, algebraic fractions, linear equations/inequalities, quadratic equations, Pythagorean Theorem. Does not count toward any degree.

**MA 1303. Quantitative Reasoning. (3)** (Prerequisites: ACT Math subscore 20, or grade of C or better in MA 0103. High School Credit in Algebra I, Algebra II, and Geometry, or equivalent. MA 1303 is a general education core alternative to MA 1313; credit may be earned for both MA 1303 and MA 1313 but the completion of same will not satisfy the MSU core requirement of “three hours of mathematics beyond the level of College Algebra”.) Three hours lecture. Descriptive statistics, normal and binomial distributions sampling, probability, hypotheses testing; logical statements and arguments; graphical solution of systems of equations/inequalities; estimation and approximation.

**MA 1313. College Algebra. (3)** (Students with credit in MA 1713 will not receive credit for this course. Prerequisite: ACT Math subscore 20, or grade of C or better in MA 0103). Three hours lecture. Review of fundamentals; linear and quadratic equations; inequalities; functions; simultaneous equations; topics in the theory of equations.

**MA 1323. Trigonometry. (3)** (Students with credit in MA 1713 will not receive credit for this course. Prerequisite: ACT Math subscore 24, or grade of C or better in MA 1313). Three hours lecture. The trigonometric functions: identities; trigonometric equations: applications.

**MA 1413. Structure of the Real Number System. (3)** (Prerequisite: a C or better in MA 1313 or an ACT Math sub-score of 24). Three hours lecture. The nature of mathematics; introductory logic; structure and development of the real number system. (For Elementary and Special Education majors only).

**MA 1423. Problem Solving with Real Numbers. (3)** (Prerequisite: a C or better in MA 1413). Three hours lecture. Proportions, percent problems, probability, counting principles, statistics. (For Elementary or Special Education majors only).

**MA 1433. Informal Geometry and Measurement. (3)** (Prerequisites: a C or better in both MA 1413 and MA 1423). Three hours lecture. Measurements and informal geometry. (For Elementary and Special Education majors only).

**MA 1453. Precalculus with Graphing Calculators. (3)** (Prerequisites: Math ACT 22 or C or better in MA 1313). Three hours lecture. Properties, applications, and graphs of linear, quadratic, polynomial, exponential, logarithmic, and trigonometric functions; trigonometric identities, equations and inverses; inequalities; conic sections; polar and parametric equations. (Degree credit will not be granted for MA 1453 and either MA 1313 or MA 1323. This course is intended to prepare students to take MA 1713 Calculus I).

**MA 1463. Finite Mathematics and Introduction to Calculus. (3)** (Prerequisite: ACT Math subscore 24, or grade of C or better in MA 1313). Three hours lecture. Matrices and systems of linear equations; introduction to calculus.

**MA 1613. Calculus for Business and Life Sciences I. (3)** (Prerequisite: ACT Math subscore 24, or grade of C or better in MA 1313). Three hours lecture. Algebraic and some transcendental functions, solutions of systems of linear equations, limits, continuity, derivatives, applications.

**MA 1623. Calculus for Business and Life Sciences II. (3)** (Prerequisite: MA 1613). Three hours lecture. Antiderivatives, the definite integral, applications of the definite integral, functions of two or more variables, partial derivatives, maxima and minima, applications.

**MA 1713. Calculus I. (3)** (Prerequisite: ACT Math subscore 26, or grade of C or better in MA 1323). Three hours lecture. Analytic geometry; functions; limits; continuity; derivatives of algebraic functions; applications of the derivative.

**MA 1723. Calculus II. (3)** (Prerequisite: Grade of C or better in MA 1713). Three hours lecture. Antidifferentiation; the definite integral; applications of the definite integral; differentiation and integration of transcendental functions.

**MA 1763. Honors Calculus I. (3)** (Prerequisite: Open through invitation only). Honors section of MA 1713.

**MA 1773. Honors Calculus II. (3)** (Prerequisite: Open through invitation only). Honors section of MA 1723.

**MA 2733. Calculus III. (3)** (Prerequisite: Grade of C or better in MA 1723). Three hours lecture. Further methods of integration; polar coordinates; vectors; infinite series.

**MA 2743. Calculus IV (3)** (Prerequisite: Grade of C or better in MA 2733). Three hours lecture. Differential calculus of functions of several variables; multiple integration; vector calculus.

**MA 2783. Honors Calculus III. (3)** (Prerequisite: Open through invitation only). Honors section of MA 2733.

**MA 2793. Honors Calculus IV. (3)** (Prerequisite: Open through invitation only). Honors section of MA 2743.

**MA 2990. Special Topics in Mathematics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer devel-

oping subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MA 3053. Foundations of Mathematics. (3)** (Prerequisite: MA 1723). Three hours lecture. The logical structure of mathematics; the nature of a mathematical proof; applications to the basic principles of algebra and calculus.

**MA 3113. Introduction to Linear Algebra. (3)** (Prerequisite: MA 1723). Three hours lecture. Vector spaces; matrices; linear transformations; systems of linear equations; characteristic values and characteristic vectors.

**MA 3163. Introduction to Modern Algebra. (3)** (Prerequisite: MA 3113). Three hours lecture. Rings, integral domains, and fields with special emphasis on the integers, rational numbers, real numbers and complex numbers; theory of polynomials.

**MA 3213. Mathematical Writing. (3)** (Prerequisites: MA 3163 or coregistration in MA 3163 and either junior/senior standing in mathematics or consent of instructor.) Three hours lecture. Refinement of specialized writing skills needed for effective communication in the mathematical sciences.

**MA 3253. Differential Equations I. (3)** (Prerequisite: MA 2743 or coregistration in MA 2743). Origin and solution of differential equations; series solutions; Laplace Transform methods; applications.

**MA 3313. Numerical Methods. (3)** (Prerequisites: MA 2733, MA 3113, and a knowledge of FORTRAN.) Three hours lecture. Programming of basic algorithms of numerical methods; computational errors; linear systems of equations; nonlinear equations; interpolation; numerical differentiation and integration; least squares approximations. (Not open to students enrolled in or having credit for MA/CS 4313 or MA/CS 4323.) (Same as CS 3313.)

**MA 3353. Differential Equations II. (3)** (Prerequisite: MA 3253). Three hours lecture. Systems of differential equations; matrix representations; infinite series solution of ordinary differential equations; selected special functions; boundary-value problems; orthogonal functions: Fourier series.

**MA 3463. Foundations of Geometry. (3)** (Prerequisite: MA 1723). Three hours lecture. The structural nature of geometry; modern methods in geometry: finite geometrics.

**MA 3513. History of Mathematics. (3)** (Prerequisite: MA 2733 or coregistration in MA 2733). Three hours lecture. A historical development of mathematicians and their most important contributions will be emphasized.

**MA 4000. Directed Individual Study.** Hours and credits to be arranged.

**MA 4133/6133. Discrete Mathematics. (3)** (Prerequisites: MA 3163 or consent of instructor). Three hours lecture. Sets, relations, functions, combinatorics, review of group and ring theory, Burnside's theorem, Polya's counting theory, group codes, finite fields, cyclic codes, and error-correcting codes.

**MA 4143/6143. Graph Theory. (3)** (Prerequisites: MA 3113 or consent of instructor). Three hours lecture. Basic concepts, graphs, and matrices, algebraic graph theory, planarity and nonplanarity, Hamiltonian graphs, digraphs, network flows, and applications.

**MA 4153/6153. Matrices and Linear Algebra. (3)** (Prerequisites: MA 3113 and MA 3253). Three hours lecture. Linear transformations and matrices; eigenvalues and similarity transformations; linear functionals, bilinear and quadratic forms; orthogonal and unitary transformations; normal matrices; applications of linear algebra.

**MA 4163/6163. Group Theory. (3)** (Prerequisite: MA 3163 or consent of the instructor). Three hours lecture. Elementary properties: normal subgroups; factor groups; homomorphisms and isomorphisms; Abelian groups; Sylow theorems; composition series; solvable groups.

**MA 4173/6173. Number Theory. (3)** (Prerequisite: MA 3113). Three hours lecture. Divisibility: congruences; quadratic reciprocity; Diophantine equations; continued fractions.

**MA 4313/6313. Numerical Analysis I. (3)** (Prerequisites: CS 1213 or equivalent, MA 3113, and MA 2743). Three hours lecture. Matrix operations; error analysis; norms of vectors and matrices; transformations; matrix functions; numerical solutions of systems of linear equations; stability; matrix inversion; eigen value problems; approximations. (Same as CS 4313/6313).

**MA 4323/6323. Numerical Analysis II. (3)** (Prerequisites: CS 1213 or equivalent, MA 3113 and MA 3253). Three hours lecture. Numerical solution of equations; error analysis; finite difference methods; numerical differentiation and integration; series expansions; difference equations; numerical solution of differential equations. (Same as CS 4323/6323).

**MA 4353/6353. Multivariable Calculus. (3)** (Prerequisite: MA 2743, MA 3113, MA 3253). Three hours lecture. Vectors: scalar functions, gradients relative extrema, Taylor series; vector functions, diver-

gence, curl, Laplacian; line, surface, and volume integrals; Greens's and Stokes' theorems, orthogonal curvilinear coordinates.

**MA 4373/6373. Introduction to Partial Differential Equations. (3)** (Prerequisite: MA 3253). Three hours lecture. Linear operators: linear first order equations; the wave equation; Green's function and Sturm—Liouville problems; Fourier series; the heat equation; Laplace's equation.

**MA 4513/6513. Applied Probability and Statistics for Secondary Teachers. (3)** (Prerequisite: MA 1723). Three hours lecture. (Credit not available for students with credit in MA-ST 4543/6543). Graphical methods of presenting data; analysis of data; probability, binomial distribution, normal distribution; random sampling; linear regression and correlation.

**MA 4523/6523. Introduction to Probability. (3)** (Prerequisite: MA 2733). Three hours lecture. Basic concepts of probability, conditional probability, independence, random variables, discrete and continuous probability distributions, moment generating function, moments, special distributions, central limit theorem. (Same as ST 4523/6523).

**MA 4533/6533. Introductory Probability and Random Processes. (3)** (Prerequisites: MA 3113 and MA 2743). Three hours lecture. Probability, law of large numbers, central limit theorem, sampling distributions, confidence intervals, hypothesis testing, linear regression, random processes, correlation functions, frequency and time domain analysis. (Credit can not be earned for this course and MA/ST 4523/6523.)

**MA 4543/6543. Introduction to Mathematical Statistics I. (3)** (Prerequisite: MA 2743.) Three hours lecture. Combinatorics; probability, random variables, discrete and continuous distributions, generating functions, moments, special distributions, multivariate distributions, independence, distributions of functions of random variables. (Same as ST 4543/6543.)

**MA 4553/6553. Foundations of Analysis for Secondary School Teachers. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Elementary set theory; the real numbers as a complete ordered field; mathematical induction; introduction to metric spaces; convergence theorems.

**MA 4563/6563. Theory of Equations for Secondary School Teachers. (3)** (Prerequisite: MA 1723). Three hours lecture. Complex numbers; polynomials and their properties; roots of algebraic equations; systems of linear equations; determinants and matrices.

**MA 4573/6573. Introduction to Mathematical Statistics II. (3)** (Prerequisite: MA 4543/6543.) Three hours lecture. Continuation of MA-ST 4543/6543. Transformations, sampling distributions, limiting distributions, point estimation, interval estimation, hypothesis testing, likelihood ratio tests, analysis of variance, regression, chi-square tests. (Same as ST 4573/6573.)

**MA 4583/6583. Numerical Methods and Computer Programming for Secondary School Teachers. (3)** (Prerequisite: MA 1723). Three hours lecture. Introduction to computer programming; flow charts and BASIC language; elementary numerical and statistical methods including basic probability.

**MA 4633/6633. Advanced Calculus I. (3)** (Prerequisite: MA 2743). Three hours lecture. Theoretical investigation of functions; limits; differentiability and related topics in calculus.

**MA 4643/6643. Advanced Calculus II. (3)** (Prerequisite: MA 4633/6633). Three hours lecture. Rigorous development of the definite integral; sequences and series of functions; convergence criteria; improper integrals.

**MA 4733/6733. Linear Programming I. (3)** (Prerequisites: CS 1213 and MA 3113). General theory of linear programming and its application: simplex algorithm, revised simplex algorithm, duality, sensitivity transportation algorithm, assignment algorithm, network analysis and goal programming. (Same as IE 4733/6733 and CS 4013/6013).

**MA 4753/6753. Applied Complex Variables. (3)** (Prerequisite: MA 2743). Three hours lecture. Analytic functions: Taylor and Laurent expansions; Cauchy theorems and integrals; residues; contour integration; introduction to conformal mapping.

**MA 4853/6853. Workshop in Microcomputing Techniques for Teachers. (3)** (Prerequisite: Graduate standing or consent of instructor). Three hours lecture. Interim term; intensive 7-day workshop. Techniques and methods of using microcomputers and the BASIC language in problem solving. (Same as CS 4073/6073).

**MA 4990/6990. Special Topics in Mathematics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MA 4933/6933. Mathematical Analysis I. (3)** (Prerequisite: MA 4633/6633 or equivalent). Three hours lecture. Metric and topological spaces; functions of bounded variation and differentiability in normed spaces.

**MA 4943/6943. Mathematical Analysis II. (3)** (Prerequisite: MA 4933/6933). Three hours lecture. Riemann-Stieltjes integration, sequences and series of functions; implicit function theorem; multiple integration.

**MA 4953/6953. Elementary Topology. (3)** (Prerequisite: MA 4633/6633). Three hours lecture. Definition of a topological space, metric space, continuity in metric spaces and topological spaces; sequences; accumulation points; compactness, separability.

**MA 7000. Directed Individual Study.** Hours and credits to be arranged.

**MA 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**MA 8113. Modern Higher Algebra I. (3)** (Prerequisite: MA 4163/6163). Three hours lecture. A study of the basic mathematical systems with emphasis on rings, fields, and vector spaces.

**MA 8123. Modern Higher Algebra II. (3)** (Prerequisite: MA 8113). Three hours lecture. A continuation of the topics introduced in MA 8113.

**MA 8133. Advanced Discrete Mathematics. (3)** (Prerequisite: MA 4133/6133 or consent of instructor). Three hours lecture. Inversion formulas, finite fields, block designs, algebraic graph theory, mathematical modeling.

**MA 8203. Foundations of Applied Mathematics I. (3)** (Prerequisites: MA 3113, MA 3253 or consent of instructor.) Three hours lecture. Principles of applied mathematics including topics from perturbation theory, calculus of variations, and partial differential equations. Emphasis of applications from heat transfer, mechanics, fluids.

**MA 8213. Foundations of Applied Mathematics II. (3)** (Prerequisite: MA 8203). Three hours lecture. A continuation of MA 8203 including topics from wave propagation, stability, and similarity methods

**MA 8233. Linear Control Systems. (3)** (Prerequisites: MA 8313 and either MA 4153 or consent of instructor). Three hours lecture. Stability analysis for linear systems; singular solutions; solution of the matrix Riccati equation; applications of orthogonal functions in control problems.

**MA 8243. Mathematics Theory of Optimal Control. (3)** (Prerequisite: MA 8283 or MA 8233 or consent of instructor). Three hours lecture. Hamilton-Jacobi Theory; sufficient conditions for optimality, controllability, and observability; analysis and synthesis of optimal control systems; computational aspects of control theory.

**MA 8253. Operational Mathematics. (3)** (Prerequisite: MA 4753/6753). Three hours lecture. Theory and applications of Laplace, Fourier, and other integral transformations: introduction to the theory of generalized functions.

**Courses numbered MA 8273, 8283, 8293 and 8313 have as prerequisites at least one of the courses MA 4633/6633, MA 4153/6153, 4353/6353, 4753/6753.**

**MA 8273. Special Functions. (3)** Three hours lecture. Infinite products: asymptotic series; origin and properties of the special functions of mathematical physics.

**MA 8283. Calculus of Variations. (3)** Three hours lecture. Functionals: weak and strong extrema; necessary conditions for extrema; sufficient conditions for extrema; constrained extrema; direct methods; applications.

**MA 8293. Integral Equations. (3)** Three hours lecture. Equations of Fredholm type: symmetric kernels; Hilbert-Schmidt theory; singular integral equations; applications; selected topics.

**MA 8313. Ordinary Differential Equations I. (3)** Three hours lecture. Linear systems of differential equations; existence and uniqueness; second order systems; systems with constant coefficients; periodic systems; matrix comparison theorems; applications and selected topics.

**MA 8323. Ordinary Differential Equations II. (3)** (Prerequisite: MA 8313). Three hours lecture. Existence, uniqueness, continuation of solutions of nonlinear systems; properties of solutions of linear and nonlinear equations including boundedness, oscillation, asymptotic behavior, stability, and periodicity; application.

**MA 8333. Partial Differential Equations I. (3)** (Prerequisite: MA 4373/6373 or consent of instructor). Three hours lecture. Solution techniques; existence and uniqueness of solutions to elliptic, parabolic, and hyperbolic equations; Green's functions.

**MA 8343. Partial Differential Equations II. (3)** (Prerequisite: MA 8333). Three hours lecture. A continuation of the topics introduced in MA 8333.

**MA 8363. Numerical Solution of Systems of Nonlinear Equations. (3)** (Prerequisites: MA 4313/6313 and MA 4323/6323). Three hours lecture. Basic concepts in the numerical solution of systems of nonlinear equations with applications to unconstrained optimization.

**MA 8383. Numerical Solution of Ordinary Differential Equations I. (3)** (Prerequisites: MA 4313/6313 and MA 4323/6323). Three hours lecture. General single-step, multistep, multivalued, and extrapolation

tion methods for systems of nonlinear equations; convergence; error bounds; error estimates; stability; methods for stiff systems; current literature.

**MA 8393. Numerical Solution of Ordinary Differential Equations II. (3)** (Prerequisite: MA 8383). Three hours lecture. A continuation of topics introduced in MA 8383.

**MA 8443. Numerical Solution of Partial Differential Equations I. (3)** (Prerequisites: MA 4313/6313, MA 4323/6323, and MA 4373/6373 or consent of instructor). Three hours lecture. Basic concepts in the finite difference and finite element methods; methods for parabolic equations; analysis of stability and convergence.

**MA 8453. Numerical Solution of Partial Differential Equations II. (3)** (Prerequisite: MA 8443). Three hours lecture. Methods for elliptic equations; iterative procedures; integral equation methods; methods for hyperbolic equations; stability; dissipation and dispersion.

**MA 8463. Numerical Linear Algebra. (3)** (Prerequisite: MA 4323/6323). Three hours lecture. Basic concepts of numerical linear algebra.

**MA 8473. Advanced Numerical Analysis I. (3)** (Prerequisite: MA 4933/6933). Three hours lecture. Approximation theory. Theoretical aspects of computational mathematics.

**MA 8483. Advanced Numerical Analysis II. (3)** (Prerequisite: MA 8473). Three hours lecture. Approximate solution of linear and nonlinear operator equations.

**MA 8633. Real Analysis I. (3)** (Prerequisite: MA 4943/6943). Three hours lecture. Lebesgue measure and Lebesgue integrals; convergence theorems, differentiation and L spaces.

**MA 8643. Real Analysis II. (3)** (Prerequisite: MA 8633). Three hours lecture. General measures; the Radon-Nikodym theorem and other topics.

**MA 8663. Functional Analysis I. (3)** (Prerequisite: MA 8643). Three hours lecture. Hilbert spaces; Banach spaces; locally convex spaces; Hahn-Banach and closed graph theorems; principle of uniform boundedness; weak topologies.

**MA 8673. Functional Analysis II. (3)** (Prerequisite: MA 8663). Three hours lecture. Continuation of topics introduced in MA 8663.

**MA 8713. Complex Analysis I. (3)** (Prerequisite: MA 4943/6943 or consent of instructor). Three hours lecture. Complex numbers: functions of a complex variable; continuity; differentiation and integration of complex functions; transformations in the complex plane.

**MA 8723. Complex Analysis II. (3)** (Prerequisite: MA 8713). Three hours lecture. Series; analytic continuation; Riemann surfaces; theory of residues.

**MA 8913. Introduction to Topology I. (3)** (Prerequisite: MA 4643/6643 or MA 4953/6953). Three hours lecture. Basic general topology; introduction of homotopy and homology groups.

**MA 8923. Introduction to Topology II. (3)** (Prerequisite: MA 8913). Three hours lecture. Continuation of topics introduced in MA 8913.

**MA 8981. Teaching Seminar. (1)** One hour lecture. Preparation for service as instructors in mathematics and statistics courses; includes practice lectures and exam preparation. (May be taken for credit more than once.)

**MA 8990. Special Topics in Mathematics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MA 9000. Dissertation Research. (1-6)** Hours and credits to be arranged.

**MA 9163. Selected Topics in Combinatorics. (3)** (Prerequisites: MA 8133 or consent of instructor). (May be taken for credit more than once). Three hours lecture. Continuation of one or more advanced topics introduced in MA 8133.

**MA 9313. Selected Topics in Ordinary Differential Equations. (3)** (Prerequisite: MA 8313 and consent of instructor). (May be taken for credit more than once). Three hours lecture. Topics to be chosen from such areas as Bifurcation Theory, Biological Modeling, Control Theory, Dynamical Systems, Functional Differential Equations, Nonlinear Oscillations, and Quantitative Behavior.

**MA 9333. Selected Topics in Partial Differential Equations. (3)** (Prerequisite: MA 8333 and consent of instructor). (May be taken for credit more than once). Three hours lecture. Topics to be chosen from such areas as Bifurcation Theory, Boundary Integral Methods, Evolution Equations, Maximum and Variational Principles, and Spectral Methods.

**MA 9413. Selected Topics in Numerical Analysis. (3)** (Prerequisite: Consent of instructor). (May be taken for credit more than once). Three hours lecture. Current topics in Numerical Analysis. The subject matter may vary from year to year.

**MA 9633. Selected Topics in Analysis. (3)** (Prerequisite: MA 8643 and consent of instructor). (May be taken for credit more than once). Three hours lecture. Topics will be chosen from areas of analysis of current interest.

**MA 9913. Selected Topics in Algebra. (3)** (Prerequisite: MA 8123 and consent of instructor). (May be taken for credit more than once). Three hours lecture. Topics to be chosen from such areas as valuation theory; polynomial rings; Noetherian, Prufer, Dedekind, and other domains of classical ideal theory; nonassociative algebraic systems.

## Department of MECHANICAL ENGINEERING

Office: 210 Carpenter Engineering Building

Professors Steele (head), Adebisi, Berry, Hodge, Horstemeyer, Jones, Marcum, and Taylor;

Associate Professors Cain, Chamra, Daniewicz, and Luck;

Assistant Professors Hudson, Parsons, Patton, and Schneider;

Instructor Emplincourt;

**ME 1111. Introduction to Mechanical Engineering. (1)** (Prerequisite: Freshman standing or consent of instructor). One hour lecture. Introduction to the mechanical engineering curriculum, the profession, and career opportunities. Historical perspective; the support role of the department, college, and university; student roles and responsibilities.

**ME 2990. Special Topics in Mechanical Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ME 3113. Engineering Analysis. (3)** (Prerequisites: Computer Literacy, MA 3113, MA 3253, and PH 2213). Three hours lecture. Analysis of engineering problems requiring the use of engineering fundamentals and mathematical techniques of analysis with computer applications.

**ME 3123. The Engineer and Society. (3)** (Prerequisite: junior standing). Three hours lecture. History of civilization from a technological perspective; world ecology and the maintenance of a sustainable society. Engineering professionalism, philosophy and lifestyles for career success.

**ME 3313. Heat Transfer. (3)** (Prerequisites: EM 3313, MA 3253, and ME 3533 or ME 3513). Three hours lecture. A study of the fundamental principles of heat transfer; processes; steady and transient conduction in solids; thermal radiation; and convective processes.

**ME 3403. Materials and Manufacturing in Design. (3)** (Prerequisites: CH 1223 and EM 2413, Corequisite EM 3213). Three hours lecture. Behavior, testing and processing of engineering materials. Emphasis is placed on the interrelation of design with processing and material selection.

**ME 3423. Mechanics of Machinery. (3)** (Prerequisites: EM 2433 and ME 3113). Three hours lecture. Analysis of mechanisms for motions, velocities, accelerations, and forces.

**ME 3513. Thermodynamics I. (3)** (Prerequisites: CH 1223, MA 2733, and PH 2213). Three hours lecture. Definitions; properties of a pure substance; work and heat; First and Second Laws; entropy; ideal gases.

**ME 3523. Thermodynamics II. (3)** (Prerequisite: ME 3513). Three hours lecture. Mixtures of ideal gases; irreversibility and availability; vapor power cycles; gas power cycles; refrigeration cycles; flow through nozzles and turbine blades; combustion; chemical equilibrium.

**ME 3533. Thermodynamics. (3)** (Prerequisite: MA 1723). Three hours lecture. Definitions; work and heat; pure substances; fundamental laws; processes; externally reversible cycles; entropy; vapor and gas power cycles; heat transfer.

**ME 3613. System Dynamics. (3)** (Prerequisites: EM 2433, ME 3113, EM 3313, and ECE 3183). Three hours lecture. Mathematical description of mechanical, electrical, hydraulic and pneumatic systems. Transient and frequency response of linear systems.

**ME 3701. Experimental Orientation. (1)** (Prerequisites: credit or registration in ME 3523 and a technical junior level writing course). Three hours laboratory. Measurements: their accuracy and usefulness; reporting; measurements of pressure, temperature, mass, weight, volume, speed, time, frequency, torque, power, area, force, and displacement.

**ME 4000. Directed Individual Study.** Hours and credits to be arranged.

**ME 4223/6223. Mechanical Systems Analysis. (3)** (Prerequisites: EM 3413 or ME 3613 and senior standing). Three hours lecture.

Fourier methods, shock spectra, signature analysis, relation to specific phenomena and malfunctions; acoustical aids; field measurement analysis; random functions, correlations; mobility and impedance methods.

**ME 4333/6333. Energy Systems Design. (3)** (Prerequisites: ME 3313 and ME 3113). Three hours lecture. Comprehensive design problems requiring engineering decisions, data acquisition, codes/standards compliance. Emphasis upon energy systems components: heat exchangers, piping networks, pumps. Fluid transients, system modeling.

**ME 4343/6343. Intermediate Heat Transfer. (3)** (Prerequisite: ME 3313). Three hours lecture. Condensation and boiling, analytical and numerical techniques for conduction and convection, gray-body and spectral-dependent radiation, transient and steady-state thermal modeling.

**ME 4353/6353. Alternate Energy Sources. (3)** (Prerequisite: ME 3313). Three hours lecture. Analysis and design of systems using energy derived from solar, hydro, geothermal, wind, ocean, waste, and biomass sources.

**ME 4373/6373. Air Conditioning. (3)** (Prerequisites: ME 3523 and ME 3313). Three hours lecture. Psychometrics; comfort conditions; determination of heat losses and gains; determination of sizes of elements; energy usage estimating; residential and commercial systems.

**ME 4383/6383. Heat Exchanger Design. (3)** (Prerequisites: ME 3313 and EM 3313). Three hours lecture. Thermal design and application of various types of heat exchangers including: surface selection, design, sizing, rating, and operational challenges.

**ME 4403. Machine Design. (3)** (Prerequisite: EM 3213). Three hours lecture. Applied stress analysis and material strength theories for sizing and selecting materials of machine elements. Selection of gears, cams, belts, springs. Design projects.

**ME 4413/6413. Casting and Joining. (3)** (Prerequisite: ME 3403 or consent of instructor). Three hours lecture. Fundamentals of solidification in casting and joining processes, including design applications.

**ME 4423/6423. Machining and Forming. (3)** (Prerequisite: ME 3403 or consent of instructor). Three hours lecture. Fundamentals of mechanical processing of metals, including bulk and sheet forming techniques.

**ME 4443/6443. Mechanical Systems Design. (3)** (Prerequisites: ME 3423 and ME 4403). Three hours lecture. Mechanical design projects involving analysis; industrial standards and considerations for safety and manufacturability; the use of computers in design and manufacturing automation ((CAD/CAM).

**ME 4453/6453. Lubrication. (3)** (Prerequisite: Senior standing). Three hours lecture. Friction of solids and fluids. Lubricants. Theory of sliding bearings. Multi-dimensional bearings with constant forces and velocities. Film, hydrodynamic, and gas lubrication. Design of bearings.

**ME 4463/6463. Engineering Design. (3)** (Prerequisites: ME 3613 and Senior standing). Three hours lecture. In-depth topics in mechanical design. Design of friction devices, hydrodynamic drives, and shells of revolution. Design for thermal creep, thermal stresses, surface contact, and impact.

**ME 4473/6473. Kinematic Theory and Design of Mechanisms. (3)** (Prerequisites: ME 3423). Three hours lecture. Advanced kinematic theory of plane mechanisms. Velocity and acceleration analysis, coupler curves, centrodes, precision points, graphical and computer synthesis of 4 bar mechanism.

**ME 4483/6483. Computer-Aided Design. (3)** (Prerequisite: ME 4403). Three hours lecture. Role of computers in design process, CAD tools, design software development, numerical methods, finite elements, design optimization, shape description, presentation of design data, data structures.

**ME 4493/6493. Concurrent Engineering. (3)** (Prerequisite: Junior or Senior standing). Three hours lecture. An introduction to the implementation, application, and management of concurrent engineering, as well as, the tools and techniques that support new product development.

**ME 4543/6543. Combustion Engines. (3)** (Prerequisites: ME 3523 and ME 3313). Three hours lecture. Application of thermodynamics, heat transfer, and combustion in the determination of performance characteristics of various engines, e.g., internal combustion, jet, and rocket engines.

**ME 4553/6553. Refrigeration. (3)** (Prerequisites: ME 3523 and ME 3313). Three hours lecture. Vapor compression, air, ejector, and absorption cycle analysis; refrigerants; equipment and control; application; compound systems; low-temperature refrigeration.

**ME 4563/6563. Fundamentals of Combustion. (3)** (Prerequisites: ME 3523 and ME 3313). Three hours lecture. Equilibrium, dissociation, deflagration, detonation, jet mixing, chemical reactions in compressible flow, mass transfer, heat transfer with chemical reaction.

**ME 4623/6623. Control Systems. (3)** (Prerequisite: ME 3613 and ECE 3283). Three hours lecture. Principles of closed loop mechanical,

electrical, hydraulic, pneumatic, and thermodynamic systems. Design of control systems.

**ME 4633/6633. Microprocessors in ME. (3)** (Prerequisite: ECE 3283). Two hours lecture. Three hours laboratory. Course for non-Electrical Engineering majors with emphasis on Mechanical Engineering applications. Microprocessor based systems with breadboard system designs: EPROM programming; A/D, D/A conversion; controls.

**ME 4643/6643. Automation of Mechanical Systems. (3)** (Prerequisites: ME 3613 and ECE 3283). Three hours lecture. An introduction to the design of automated equipment and processes. Automation of processes using fluid power equipment and industrial controllers.

**ME 4653/6653. Fluid Power Control. (3)** (Prerequisite: Senior standing). Three hours lecture. Analysis of fluid power components and their integration into systems to power machinery. Introduction to sequential control.

**ME 4721. Experimental Techniques I. (1)** (Prerequisites: ME 3701, EM 3313, and credit or registration in ME 3313). Three hours laboratory. Application of principles of experimental design, statistics, uncertainty analysis, instrument response, data acquisition and data reduction to obtain experimental solutions to problems in engineering.

**ME 4731. Experimental Techniques II. (1)** (Prerequisite: ME 4721). Three hours laboratory. Continuation of ME 4721. Plan and use the microcomputer to record data and control experiments in traditional mechanical engineering subject areas. Analyze and report results.

**ME 4823/6823. Compressible Flow and Turbomachinery. (3)** (Prerequisites: EM 3313 and ME 3523). Three hours lecture. Fundamental principles, shock and expansion waves, generalized one-dimensional flows, simple processes, energy transfer in turbomachines, turbomachine efficiencies, multi-dimensional effects.

**ME 4833/6833. Intermediate Fluid Mechanics. (3)** (Prerequisite: ME 3313). Three hours lecture. Differential equations of fluid mechanics, Newtonian and non-Newtonian fluids, boundary-layer theory, laminar and turbulent solutions, compressible flow with applications.

**ME 4990/6990. Special Topics in Mechanical Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ME 7000. Directed Individual Study.** Hours and credits to be arranged.

**ME 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**ME 8011. Graduate Seminar. (1)** Presentation and discussion of research and current mechanical engineering literature by students, faculty, and visiting lecturers. Attendance required for students in Mechanical Engineering Graduate Program.

**ME 8213. Engineering Analysis I. (3)** Three hours lecture. The formulation of mathematical methods of advanced engineering problems and the use of mathematical techniques for their solution: equilibrium, eigenvalue, and propagation problems.

**ME 8243. Finite Elements in Mechanical Engineering. (3)** (Prerequisites: ME 4403 and EM 3213). Three hours lecture. Concepts and applications of finite element analysis in mechanical engineering problems.

**ME 8253. Fatigue and Fracture in Engineering Design. (3)** Three hours lecture. Stress analysis of cracked components. Prediction and prevention of fatigue failure and fracture.

**ME 8313. Conductive Heat Transfer. (3)** Three hours lecture. Closed form analytical and approximate numerical solutions to one, two, and three dimensional steady-state and transient problems in conduction heat transfer.

**ME 8323. Radiative Heat Transfer. (3)** Three hours lecture. Thermal radiation through non-absorbing and absorbing media; integral equations for radiative transfer; unified method for radiation-exchange calculations; solar terrestrial, and planetary radiation.

**ME 8333. Convective Heat Transfer. (3)** Three hours lecture. Analytical and empirical methods of solution of problems in laminar and turbulent, natural and forced convective heat transfer. Stability; thermal boundary layer techniques; multiphase systems.

**ME 8343. Two-Phase Flow and Heat Transfer. (3)** (Prerequisites: ME 3313 and EM 3313). Three hours lecture. Two-phase fluid mechanics and heat transfer processes in engineering systems. Pool boiling, flow boiling, and convective condensation.

**ME 8363. Computational Heat Transfer. (3)** (Prerequisite: Consent of Instructor). Three hours lecture. Application of numerical techniques to elliptic and parabolic problems in engineering heat transfer and fluid flow. Discretization techniques; linearization; stability analysis. (Same as ASE 8363).

**ME 8403. Principles of Computer-Aided Design and Manufacturing. (3)** Three hours lecture. CAD/CAM principles and tools presented in generic and basic forms; engineering and design applications; numerical control part programming and manufacturing.

**ME 8513. Classical Thermodynamics. (3)** Three hours lecture. Postulational treatment of the physical laws of equilibrium, thermostatics. Equations of state, processes, equilibrium stability, reactive systems, phase transitions.

**ME 8613. Dynamical Systems. (3)** Three hours lecture. Mathematical description and simulation of systems with mechanical, electrical, pneumatic, and hydraulic components; state variables; bondgraphs; stability; observability and controllability.

**ME 8623. Adaptive Prediction and Control. (3)** Three hours lecture. Parameter estimation, linear control, prediction, adaptive control, stochastic parameter estimation, Kalman filtering.

**ME 8713. Mechanics and Control of Manufacturing Systems. (3)** Three hours lecture. Design and operation of computer controlled machine tools. Kinematics and control of robot manipulators. Industrial applications of robots. (Same as IE 8713).

**ME 8733. Experimental Procedures. (3)** Three hours lecture. Design of experiments; instrumentation; data acquisition; and correlation and evaluation of results.

**ME 8743. Stress Analysis. (3)** (Prerequisite: EM 3213). Two hours lecture. Three hours laboratory. Analysis of stress distributions in machine and structural members by the experimental methods of

photoelasticity, electrical-resistance strain gages, and brittle coating; dynamic stress analysis.

**ME 8813. Viscous Flow I. (3)** Three hours lecture. Fundamental laws of motion for a viscous fluid; classical solutions of the Navier-Stokes equations; inviscid flow solutions; laminar boundary layers; stability criteria.

**ME 8823. Viscous Flow II. (3)** (Prerequisite: ME 8813 or equivalent). Three hours lecture. Numerical solution techniques for viscous flow equations. Turbulence and turbulence modeling. Current literature and topics.

**ME 8843. Unstructured Grid Technology. (3)** (Prerequisites: ASE 8413, proficiency in computer programming, and consent of instructor). Three hours lecture. Unstructured grid generation based on Delaunay, Advancing-Front, Iterative Point Placement, and Local-Reconnection techniques. Implementation of unstructured Finite-Element/Volume methods for engineering applications.

**ME 8990. Special Topics in Mechanical Engineering. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ME 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of MANAGEMENT and INFORMATION SYSTEMS

Office: 3103 McCool Hall

Professors Smith (Head), Arnett, Cochran, Lehman, R. Pearson, Shim, Spencer, Taylor, and White;  
Associate Professors Jones, A. Pearson;

Assistant Professors Harrell-Cook, Long, Maertz, Peyrefitte, Stollack, and Vance

**MGT 2990. Special Topics in Management. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MGT 3114. Principles of Management and Production. (4)** (Prerequisites: EC 2113, BQA 2113, and junior standing). Four hours lecture. Management principles for all organizations including planning, organizing, leading, and controlling as well as the purposes, methods, tools, and procedures of production management.

**MGT 3213. Organizational Communications I. (3)** (Prerequisites: EN 1113 and junior standing). Three hours lecture. A study of the role of communications in the modern business organization. Emphasis is given to the basic writing skills applied to various forms of business communications.

**MGT 3323. Entrepreneurship. (3)** (Prerequisite: EC 2113). An introduction to the processes involved in owning and managing a business. Includes the entrepreneurial activities normally associated with starting and operating a business.

**MGT 3333. Field Studies in Entrepreneurship. (3)** (Prerequisite: MGT 3323). Three hours lecture. Students, working in groups under the direction of their professor, will assess the problems of an embryonic or operating entrepreneurial organization and recommend appropriate solutions.

**MGT 3413. Production Management. (3)** (Prerequisite: MGT 3113 and BQA 2113). Three hours lecture. Purposes, methods, tools, and procedures of production/operations management: systems used in large and small firms.

**MGT 3513. Introduction to Human Resource Management. (3)** Three hours lecture. Development of efficient programs for managing human resources. Emphasizes equal employment opportunity, performance evaluation, selection, placement, education, training, safety and health.

**MGT 3813. Organizational Behavior. (3)** (Prerequisites: MGT 3113). Three hours lecture. Study of behavioral theories used by managers to assist them in better understanding, anticipating, and influencing behavior in an organizational setting.

**MGT 4000. Directed Individual Study.** (Prerequisite: Junior standing). Hours and credits to be arranged.

**MGT 4113. Advanced Management. (3)** (Prerequisite: MGT 3113). Three hours lecture. A brief history of management thought and a study in depth of the managerial functions of planning, organizing, controlling.

**MGT 4153. Organization Theory. (3)** (Prerequisite: Final semester senior standing). Presents for analysis, discussion, and solution case-problems of actual situations met in day-to-day operation of business enterprise which require managerial action.

**MGT 4213. Organizational Communications II. (3)** (Prerequisite: MGT 3213). Three hours lecture. Study of the communication channels and media used by the firm in its relationships with the employees, the customers, the public, and others.

**MGT 4413. Introduction to Operations Research Methods. (3)** (Prerequisites: BIS 1013 or equivalent and BQA 3113). Three hours lecture. Principles of operations research for business decisions; deterministic and probabilistic models; queuing theory, Markov Chains, PERT/CPM, goal programming, simulations.

**MGT 4533. Advanced Human Resource Management. (3)** (Prerequisite: MGT 3513 or consent of instructor). Three hours lecture. Study of problems in the field of human resource management emphasizing development of the ability to analyze problems and to apply management fundamentals to human resource.

**MGT 4543. Compensation Management. (3)** (Prerequisite: MGT 3513). Three hours lecture. Compensation fundamentals, practices, and problems, including wage level determinants, wage & salary structures, merit rating, methods of wage payments, fringe benefits, & controls.

**MGT 4553. Collective Bargaining. (3)** (Prerequisite: MGT 3513). Three hours lecture. Management and union organization for collective bargaining, issues in current bargaining context, methods and procedures in bargaining, legal-administrative requirements under the NLRA as amended.

**MGT 4613. Cross-Cultural Management. (3)** (Prerequisite: MGT 3113). Three hours lecture. Study of managing in a multi-cultural environment. Focuses on global strategies, management approaches, and interactions.

**MGT 4713. Quality in Organizations. (3)** (Prerequisites: MGT 3113). Three hours lecture. An introduction to theories and tools associated with quality management in organizations. Considers the managerial, employee, organizational, and cultural changes required to enhance quality.

**MGT 4990/6990. Special Topics in Management. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MGT 7000. Directed Individual Study.** Hours and credits to be arranged.

**MGT 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**MGT 8063. Survey of Management. (3)** (Prerequisite: Graduate standing). Three hours lecture. Survey of management principles and techniques including: objective, policies, functions, leadership, organization, and production control procedures and systems as applied to all fields of business.



**MGT 8111. Human Resources Issues. (1)** (Prerequisite: MGT 8063 or equivalent). One hour lecture. Survey of nature and influences of human resource management in organizations. Case studies are used to apply and reinforce theory.

**MGT 8112. Leadership Skills for Managerial Behavior. (2)** (Prerequisite: MGT 8063 or equivalent). Two hours lecture. Survey of major behavioral skills used by managers to help them understand and influence behavior in an organizational setting.

**MGT 8113. Management Policies. (3) (Prerequisite: MGT 3113). (3)** Three hours lecture. Application of management principles and practices to policy making. Universality of management functions to all phases of business and need for policy formulation are developed.

**MGT 8121. Strategic Management. (1)** (Prerequisite: MGT 8063 or equivalent). One hour lecture. A detailed study of strategic management covering such topics as environmental analysis, competition between firms, establishing and sustaining a competitive advantage, and strategy implementation.

**MGT 8122. Strategy Field Study. (2)** (Prerequisite: MGT 8121 or equivalent). A group project based, field study of strategic issues currently facing a participating organization.

**MGT 8132. Project Management Field Study. (2)** Prerequisites: IE 6533 or equivalent and instructor consent). Two hours lecture. A project based field study requiring the application of specific project management skills in a organized setting.

**MGT 8213. Graduate Seminar in Communications. (3)** (Prerequisite: MGT 3113). Three hours lecture. Communication orientation to the managerial function. Includes study of verbal and nonverbal communication, persuasion, semantics, upward, downward and horizontal communication, communication skills, and communication programs.

**MGT 8413. Operations Research Problems. (3)** (Prerequisites: BQA 8443 and MGT 4413 or consent of instructor). Three hours lecture. Survey of major quantitative and operations research techniques useful in business decision-making, planning, and control; practice in model formulation and solution using the computer.

**MGT 8513. Human Resource Management. (3)** Three hours lecture. The nature, role, and scope, from a systems approach, of human resource management within organizations. Cases supplement lectures with real-life decision-making situations.

**MGT 8523. Seminar in Management-Industrial Relations. (3)** (Prerequisite: MGT 3113). Case studies and special reports in industrial relations.

**MGT 8612 Managing in the Global Business Environment. (2)** Two hours lecture. Analysis of the global environmental elements which

impact and are impacted by organizations: global politics and economics, culture, international competition, natural resources, technology. (Same as IB 8612).

**MGT 8813. Organizational Behavior. (3)** Three hours lecture. A study of the major behavioral theories and technologies as they relate to an organizational setting. Theory and research in the major organizational behavior areas will be emphasized.

**MGT 8823. Organization Development. (3)** (Prerequisite: MGT 3113). Study of the ways organizations can better adapt to the challenges of a modern society. The focus is on innovation, change, and action-oriented research.

**MGT 8990. Special Topics in Management. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MGT 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**MGT 9143. Development of Management Theory. (3)** (Prerequisite: approval of Instructor). Three hours lecture. Doctoral Seminar. A survey analysis and synthesis of the classical idea which have influenced the development of management and current management theory.

**MGT 9533. Seminar in Human Resource Management Literature. (3)** (Prerequisite: Approval of Instructor). Discussions and presentations pertaining to HRM literature. Emphasis on understanding the empirical that theoretical research in this area and developing individual theoretical manuscripts for presentation.

**MGT 9613. Organizational Theory and Practice. (3)** (Prerequisite: Approval of Instructor). Three hours lecture. Doctoral Seminar. Analysis and design of organization structure and dynamics of organization. Behavioral aspects of the executive factors affecting the administrative process within organizations.

**MGT 9813. Seminar in Organizational Behavior. (3)** (Prerequisite: Approval of Instructor). Discussions and presentations pertaining to OB literature. Emphasis on understanding the empirical add theoretical research in this area, and developing individual theoretical manuscripts for presentation.

**MGT 9913. Seminar in Strategy Formulation. (3)** (Prerequisite: Approval of Instructor). Doctoral seminar covering the strategic management literature in the area of strategy formulation.

**MGT 9933. Seminar in Strategy Implementation. (3)** (Prerequisite: Approval of instructor). Doctoral seminar covering the strategic management literature in the area of strategy implementation.

## Department of MARKETING, QUANTITATIVE ANALYSIS and BUSINESS LAW

Office: 301 McCool Hall

Professors Taylor (head), Bryant, Capella, Eshee, LeMay, Tahai and Webster;  
Associate Professors Engelland and Obert;  
Assistant Professors Hoffman, Liddell, Lueg, M. Moore, R. Moore, Still and Sullivan.

**MKT 2990. Special Topics in Marketing. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MKT 3013. Principles of Marketing. (3)** (Prerequisite: junior standing). Three hours lecture. A general survey of the functions, processes, institutions and costs in distribution of goods and services from producers to users.

**MKT 3213. Retailing. (3)** (Prerequisite: MKT 3013 and Junior standing). Three hours lecture. Survey of the nature, procedure and results of trade at the retail level.

**MKT 3933. International Marketing. (3)** (Prerequisites: MKT 3013, and senior standing in business/marketing.) Three hours lecture. Study of the marketing function in the global marketplace, including the techniques and strategies required when marketing in various cultural, economic, legal and political environments.

**MKT 4000. Directed Individual Study.** Hours and credits to be arranged.

**MKT 4113. Personal Selling. (3)** (Prerequisite: Junior standing). Three hours lecture. Psychology of personal selling; planning and presentation; the sales approach; the interview; closing the sale.

**MKT 4123. Advertising. (3)** (Prerequisite: MKT 3013 or consent of instructor). Three hours lecture. A course dealing with the role of advertising in society, the relation of advertising to other business activity, and the use of advertising as communication.

**MKT 4143/6143. Sales Management. (3)** (Prerequisites: MKT 3013 and MGT 3113). Three hours lecture. Application of scientific management to the selling and distribution of consumer and industrial goods.

**MKT 4233/6233. Golf Merchandising Management. (3)** (Prerequisite: PGM Major, MKT 3213). Three hours lecture. Development of marketing strategies for the organization, operation, and maintenance of operations in the golf shop and golf course environment.

**MKT 4413. Consumer Analysis and Behavior. (3)** (Prerequisite: MKT 3013). A study of the nature and dynamics of consumer markets, and the significance of these markets to marketing executives.

**MKT 4533. Marketing Research. (3)** (Prerequisites: BQA 3123 and MKT 3013). Three hours lecture. Study of modern marketing research techniques and their applications. Scope and purpose of marketing research: planning of surveys; collecting and analysis of data; preparation of reports.

**MKT 4613. Services Marketing. (3)** (Prerequisite: MKT 3013.) Three hours lecture. A study of the unique problems associated with the marketing of services and of alternative strategies with which to improve service marketing effectiveness.

**MKT 4813. Marketing Management. (3)** (Prerequisites: Marketing Graduating Senior). Marketing from managerial viewpoints: critical analysis of functions of marketing opportunity assessment, marketing planning and programming, marketing leadership and organization, evaluating and adjusting marketing effort.

**MKT 4990/6990. Special Topics in Marketing. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MKT 7000. Directed Individual Study.** Hours and credits to be arranged.

**MKT 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**MKT 8072. Survey of Marketing. (2)** (Prerequisite: Graduate standing; EC 8043, equivalent of concurrent enrollment). Two hours lecture. Survey of product, price, promotion, and distribution decisions in for-profit and non-profit settings; external environmental factors affecting marketing decisions; focus on strategic decision making.

**MKT 8112. Marketing Management. (2)** (Prerequisite: MKT 8072 or equivalent). Two hours lecture. A graduate survey of marketing focused on the strategic analysis and planning necessary to effectively match marketing strategies with changing macro, micro, and organizational environments.

**MKT 8122. Management of Delivery Systems. (2)** (Prerequisite: MKT 8072 or equivalent). Two hours lecture. Provides knowledge of operations, purchasing and logistics that is crucial to managing in the modern business world.

**MKT 8313. Marketing Policies. (3)** (Prerequisite: MKT 3013). Three hours lecture. A graduate survey of marketing focused on the analysis and planning necessary to effectively match marketing programs with competitive, economic, social, political and ethical environments.

**MKT 8323. Problems in Marketing. (3)** (Prerequisite: MKT 8112 or equivalent). Seminar. Identification of current marketing problems and the specification, evaluation and modification of strategies for their resolution, with emphasis on the use of conceptual modeling.

**MKT 8333. Seminar in Marketing—Promotion and Distribution Strategies. (3)** (Prerequisite: MKT 8313). Intensive analysis of promotion and distribution strategies as key functional marketing variables. Emphasis is on obtaining an advanced understanding of strategic and research alternatives.

**MKT 8343. Seminar in Marketing—Pricing and Product Strategies (3)** (Prerequisite: MKT 8313). Intensive analysis of pricing and product strategies as key functional marketing variables. Emphasis is on

obtaining an advanced understanding of strategic and research alternatives.

**MKT 8413. Seminar on Consumer Behavior. (3)** (Prerequisite: MKT 8313). An analysis of macro and micro consumer behavior. Particular emphasis is placed on the consumer decision process in the market place.

**MKT 8533. Research Design and Execution. (3)** (Prerequisite: Consent of instructor). Interdisciplinary; designing and executing valid quantitative research projects, development valid, reliable data collection instruments, correctly analyzing, interpreting data. Wide-range applicability. Master-doctoral-level.

**MKT 8543. Quantitative Marketing Seminar. (3)** (Prerequisites: MKT 8313 and BQA 8443 or consent of instructor). Development of marketing strategy and the solution of marketing problems using quantitative methods.

**MKT 8990. Special Topics in Marketing. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MKT 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**MKT 9333. Advanced Marketing Theory. (3)** (Prerequisite: MKT 8313). Seminar. A critical examination of the evolution of marketing concepts, terminology, principles, and theory, through analysis of the literature in the field.

## MILITARY SCIENCE

Office: 1st Floor, Middleton Hall

LTC Hickman, CPT Blacker, CPT Barton, CPT Smith  
MSG McClelland, and SFC Lee, SGT Wilson

**MS 1112. Introduction to ROTC. (2)** One hour lecture. Two hours laboratory. Increases self-confidence through team study and activities in basic drill, physical fitness, rappelling, first aid, and basic marksmanship. Students learn fundamental concepts of leadership.

**MS 1113. Leader Development A (Compression). (3)** (Students with MS 1112 or 1122 will not receive credit). Two hours lecture. Two hours laboratory. Combine MS 1112 and MS 1122. (Fall).

**MS 1122. Introduction to Leadership. (2)** One hour lecture. Two hours laboratory. Applies principles of effective leadership, develops communications skills to improve individual performance and group interaction, and relates organizational ethical values to the effectiveness of leaders.

**MS 2113. Advanced Leadership. (3)** Two hours lecture. Two hours laboratory. Applies leadership and problem-solving principles to complex case studies/simulations. Examines principles of subordinate motivation and organizational skills. (Fall).

**MS 2123. Tactics and Officership. (3)** Two hours lecture. Two hours laboratory. Introduces basic tactics. Examines national and Army values. Applies principles of ethical decision-making. Examines the legal and historical foundations, duties and functions of officers. (Spring)

**MS 2223. Leader Development B (Compression). (3)** (Students with MS 2112 or 2122 will not receive credit). Two hours lecture. Two hours laboratory. Combines MS 2112 and MS 2122.

**MS 2256. Introductory Leadership Course. (6)** (The equivalent of MS 1112, MS 1122, MS 2122; or MS 1113 and MS 2223). Summer leadership training course designed to introduce students to all facets of

the military with a focus on understanding traditional military leadership values. (Summer)

**MS 3113. Advanced Military Skills I. (3)** (Prerequisites: MS 1112, MS 1122, MS 2112, and MS 2122 or instructor's consent.) Fall semester. Three hours lecture. Two hours laboratory. Detailed instruction on squad offensive and defensive tactics, to include specialized operations. Additional instruction in combat leadership and operations orders.

**MS 3123 Advanced Military Skills II. (3)** (Prerequisite: MS 1112, MS 1122, MS 2112, MS 2122, MS 3113 or instructor's consent.) Spring Semester. Three hours lecture. Two hours laboratory. Advanced instruction on platoon tactical operations and small unit patrolling. Discussion on the operation and employment of weapons in the platoon.

**MS 3376. Advanced Leadership Course. (6)** (Prerequisite: MS 3113 and MS 3123). Summer leadership training course designed to train and to evaluate cadet's leadership ability and officer potential. (Summer)

**MS 4000. Directed Individual Study.** Hours and credits to be arranged. Maximum of six hours.

**MS 4114/6114. Leadership Challenges and Goal-Setting. (4)** (Prerequisite: Military Science Status or consent of instructor). Three hours lecture. Three hours laboratory. Plan, conduct and evaluate activities of the ROTC organization. Develop confidence in skills to lead people and manage resources. Apply Army policies and programs. (Fall)

**MS 4124/6124. Transition to Lieutenant. (4)** (Prerequisite: Military Science Senior Status or consent of instructor). Three hours lecture. Three hours laboratory. Theory and practice of the laws of war, leadership, and resolving ethical problems.

## Department of MUSIC EDUCATION

Music Building

Professors Michael R. Brown (Head), Hood, and Johus  
Associate Professors Damm, Edwards-Henry, Johns, Pappas, Payne, and Smith  
Assistant Professors Forrester, Human, Konieberg, Min and Sebba; Instructors Falcone and Payton  
Adjunct Instructors Joni Pappas, and Patilla

### Music

**MU 1010. Recital Hour. (0)** Minimum one (1) hour weekly. Performance and critique experiences in applied music. Required for music majors.

**MU 1103. African American Music. (3)** Three hours lecture. A study of African musical and cultural traditions with focus on the impact of these traditions on the development and advancement of African American Music.

**MU 1111-1121. Piano Class. (1)** Two hours laboratory. Beginning piano for non-music majors.

**MU 1113. History and Appreciation of Music. (3)** Three hours lecture. Historical development of music and the composers of the different eras; individual investigation of related special topics; individual and directed listening to musical examples.

**MU 1131. Voice Class. (1)** Two hours laboratory. Class study of Voice Production.

**MU 1211. Guitar Class. (1)** Two hours laboratory. Class study of guitar-playing techniques at the beginning level.

**MU 1213-1413. Music Theory I (3) and Music Theory II. (3)** Three hours lecture. A course for music majors in which the elements of form, melody, rhythm, and harmony of music are studied on an integrated plan.

**MU 1321-1521. Ear Training I (1) and Ear Training II. (1)** Two hours laboratory. A course for music majors utilizing micro and macro-listening to emphasize melodic, harmonic, and rhythmic patterns and relationships in music.

**MU 2011. Third Year Woodwind Ensembles. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant woodwind literature. May be repeated for credit more than once.

**MU 2111-2121. Piano Class. (1)** Two hours laboratory. Beginning piano for instrumental and vocal music majors.

**MU 2322. History and Literature of Music I. (2)** Two hours lecture. An intensive study of the history of music, composers, and significant literature with special research topics. (Primarily for music majors).

**MU 2323. History and Literature of Music II. (3)** Three hours lecture. Emphasis on classifying and identifying period and composer characteristics. (Primarily for music majors.)

**MU 2511. Marching Band. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant marching band literature. May be repeated for credit more than once. (Fall semester only).

**MU 2531. Concert Band. (1)** Concert Band. (Audition required). One to five rehearsals per week. The study and performance of significant concert band literature. May be repeated for credit more than once. (Spring semester only).

**MU 2551. Percussion Ensemble. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant percussion literature. May be repeated for credit more than once.

**MU 2561. Symphonic Band. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant symphonic band literature. May be repeated for credit more than once. (Spring semester only).

**MU 2571. Wind Ensemble. (1)** (Audition required). One to five rehearsals per week. Study, rehearsal, and performance of select literature from the wind band repertoire. May be repeated for credit more than once.

**MU 2611. Concert Choir. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant choral literature. May be repeated for credit more than once.

**MU 2613-2813. Music Theory III (3) and Music Theory IV. (3)** (Prerequisite: MU 1213-1413). Three hours lecture. A course for music majors in which the elements of form, melody, rhythm, and harmony of music are studied on an integrated plan.

**MU 2631. Starkville Community Chorus. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant choral literature. May be repeated for credit more than once.

**MU 2711. Pop/Jazz Choir. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant choral literature. May be repeated for credit more than once.

**MU 2721-2921. Ear Training III (1) and Ear Training IV. (1)** Two hours laboratory. A course for music majors utilizing micro and macro-listening to emphasize melodic, harmonic and rhythmic patterns and relationships in music.

**MU 2731. Chamber Singers. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant choral literature. May be repeated for credit more than once.

**MU 2851. Brass Ensembles. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant brass literature. May be repeated for credit more than once.

**MU 2911. Jazz Ensemble. (1)** (Audition required). One to five rehearsals per week. The study and performance of significant jazz ensemble literature. May be repeated for credit more than once.

**MU 2990. Special Topics in Music. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MU 3111-3121. Piano Class. (1)** (Prerequisite: grade of C or better in MU 2121 or equivalent or permission of instructor). Two hours laboratory. Intermediate piano for instrumental and vocal music majors; continuation of MU 2121.

**MU 3112-3122. Piano Class. (2)** (Prerequisite: Prior credit or concurrent enrollment in MU 1213-1413). Two hours laboratory. Functional

keyboard skills for music majors who read and play intermediate to advanced-level piano repertoire.

**MU 3123 Basics of Music. (3)** Three hours lecture. An exploration of basic musical elements through listening: singing; movement; and playing rhythm, melodic, and ethnic instruments, utilizing a variety of multicultural and orchestral music.

**MU 3232. History of the Organ and Organ Literature. (2)** Two hours lecture. (Prerequisite: Junior or Senior Music Education majors or others with consent of department). A survey of organ design and literature for the instrument.

**MU 3333. Orchestration. (3)** Three hours lecture. Basic arranging/orchestration techniques for chorus and band. The student will learn the practical ranges of band instruments and voices so that they can write idiomatically.

**MU 3412. Conducting. (2)** Two hours lecture. The elements of conducting, baton technique, and interpretation.

**MU 3422. Piano Literature. (2)** Two hours lecture. A study of basic piano literature and stylistic trends of the Baroque, Classical and early Romantic periods. (Required of all piano pedagogy majors.)

**MU 3442. Advanced Conducting. (2)** (Prerequisite: MU 3412 or consent of instructor). One hour lecture. Two hours laboratory. Continuation of MU 3412 with emphasis on interpretation of significant instrumental and choral literature.

**MU 3452. Advanced Piano Literature. (2)** (Prerequisite: MU 3422 or consent of instructor). Two hours lecture. A continuation of Piano Literature, MU 3422, Detailed study of the keyboard literature and its composers from approximately 1875 to the present. (Required of all piano pedagogy majors).

**MU 4000. Directed Individual Study.** Hours and credits to be arranged.

**MU 4313. Form and Analysis. (3)** (Prerequisites: MU 2214/2224). Three hours lecture. A comparative survey for music majors of the principal formal designs found in instrumental and vocal literature with emphasis on compositional techniques and harmonic structure.

**MU 4353. Traditional Harmony. (3)** Three hours lecture. Intensive study of harmonic techniques of the common practice period, including chord function complexities of the late nineteenth century.

**MU 4413. Church Music in History and Practice. (3)** Three hours lecture. A survey of the use of music in the worship service from primitive to present-day cultures.

**MU 4513. Counterpoint. (3)** Three hours lecture. Study and analysis of free and strict polyphonic techniques.

**MU 4990/6990. Special Topics in Music. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MU 7000. Directed Individual Study.** Hours and credits to be arranged.

**MU 8990. Special Topics in Music. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

### Band

Office: Band Hall

Director: Elva Kaye Lauce

**MU 2511. Marching Band. (1)**

**MU 2531. Concert Band. (1)**

### Symphonic Band

**MU 2561. Symphonic Band. (Second Semester Only). (1)**

### Wind Ensemble

**MU 2571. Wind Ensemble (1)**

### Choral

Office: Choral Building

Director: Jeff Pappas

Training in the correct principles of singing. Stress on tone quality, enunciation, pronunciation, even scale and musicianship. Repertoire for each of the choral groups during a four-year period is designed to provide participants with opportunity to study and perform standard and contemporary compositions.

**Chorus**

- MU 2611. Concert Choir. (1)**  
**MU 2631. Starkville Community Choir. (1)**

**Vocal Ensembles**

- MU 2711. Pop/Jazz Choir. (1)**  
**MU 2731. Chambers Singers. (1)**

**Instrumental Ensembles****Woodwind Ensembles**

- MU 2011. Woodwind Ensemble. (1)**

**Brass Ensembles**

- MU 2851. Brass Ensemble. (1)**

**Stage Band**

- MU 2911. Jazz Ensemble. (1)**

**APPLIED MUSIC**

Variable credit 1 or 2 hours credit: 3 hours practice per week per hour of credit. May be repeated for credit.

All students of applied music will be given proficiency examinations which will be held at the end of each semester. All Music Majors are required to perform in Student Recital on their major instrument at least once each semester. (Does not apply in the first semester of the freshman year or during the student teaching semester).

<b>MUA 1010, 2010, 3010.</b>	<b>Piano</b>
<b>MUA 1050, 2050, 3050.</b>	<b>Voice</b>
<b>MUA 1110, 2110, 3110.</b>	<b>Flute</b>
<b>MUA 1150, 2150, 3150.</b>	<b>Clarinet</b>
<b>MUA 1210, 2210, 3210.</b>	<b>Saxophone</b>
<b>MUA 1250, 2250, 3250.</b>	<b>Oboe</b>
<b>MUA 1310, 2310, 3310.</b>	<b>Bassoon</b>
<b>MUA 1350, 2350, 3350.</b>	<b>Trumpet</b>
<b>MUA 1410, 2410, 3410.</b>	<b>Horn</b>
<b>MUA 1450, 2450, 3450.</b>	<b>Trombone</b>
<b>MUA 1510, 2510, 3510.</b>	<b>Euphonium</b>
<b>MUA 1550, 2550, 3550.</b>	<b>Tuba</b>
<b>MUA 1610, 2610, 3610.</b>	<b>Percussion</b>
<b>MUA 1650, 2650, 3650.</b>	<b>Strings</b>
<b>MUA 1750, 2750, 3750.</b>	<b>Organ</b>

**MUSIC EDUCATION**

**MUE 1263. Instrumental Class. (3)** Three hours lecture. Instrumental experiences for vocal and piano majors.

**MUE 2990. Special Topics in Music Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MUE 3001. Practicum in Music Education. (1)** Two hours laboratory. Observation, discussion, and critique of elementary and secondary school music classroom settings.

**MUE 3212. Brass Techniques. (2)** Two hours lecture. Study of brass winds with emphasis on embouchure, techniques, and teaching problems.

**MUE 3213. Performance Assessment in Music Education. (3)** Three hours lecture. Limited to music majors. Methods and materials of performance assessment in music education.

**MUE 3221. Woodwind Class. (1)** Two hours laboratory. Study of woodwinds with emphasis on embouchure, techniques, and teaching problems.

**MUE 3222. Woodwind Techniques. (2)** Two hours lecture. Study of woodwinds with emphasis on embouchure, techniques, and teaching problems.

**MUE 3231. String Class. (1)** Two hours laboratory. Study of strings with emphasis on bowing, techniques, and teaching problems.

**MUE 3242. Percussion Class. (2)** Two hours lecture. Detailed study of percussion instruments with emphasis on teaching problems, training materials, and performance literature.

**MUE 3243. Planning and Managing Learning in Music Education. (3)** Three hours lecture. Study of variables contributing to efficiency and competency for teacher-learner activities and the creation and maintenance of a positive learning environment in music classrooms.

**MUE 3262. Instrumental Class. (2)** One hour lecture. Two hours laboratory. Instrumental experiences for vocal and piano majors.

**MUE 3313. Piano Pedagogy in Elementary Schools. (3)** Three hours lecture. Limited to music majors. Methods and materials of piano teaching in elementary schools.

**MUE 3333. Introduction to Piano Pedagogy. (3)** Two hours lecture. Two hours laboratory. Methods, materials, curriculum building, and philosophical bases for teaching beginning piano. Required of all piano pedagogy students.

**MUE 3343. Advanced Piano Pedagogy. (3)** (Prerequisite: MUE 3333). Two hours lecture. Two hours laboratory. Methods, materials, curriculum building and philosophical bases for teaching piano at the intermediate through advanced levels. Required for all piano pedagogy students.

**MUE 3613. Methods and Materials of Music for Special Education. (3)** (Prerequisite: Junior standing). Three hours lecture. Materials for well-rounded musical growth of child; various methods of teaching music in special education classes. Primarily for special education majors.

**MUE 4000. Directed Individual Study.** Hours and credits to be arranged.

**MUE 4622/6622. Staging Musical Productions. (2)** Two hours lecture, laboratory. Scenery design and construction, costuming, stage direction and management, coaching, and the study of selected literature.

**MUE 4863. Professional Seminar in Church Music Administration. (3)** (Prerequisites: Admission to the program in Church Music Education and senior standing). Three hours lecture. A seminar dealing with professional and administrative issues as they relate to music in the Church.

**MUE 4873. Professional Seminar in Music Education. (3)** (Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. A seminar dealing with legal, professional, administrative, and curriculum issues as they relate to music education in the schools.

**MUE 4884, 4894. Internship in Piano Pedagogy. (4,4)** (Prerequisites: MUE 3333/3343 and senior standing). Supervised observation and directed teaching in the private piano studio. Limited to music majors with a concentration in Piano Pedagogy.

**MUE 4886, 4896. Student Teaching in Music Education. (6,6)** (Both courses to be taken concurrently). (Prerequisites: Admission to Teacher Education and senior standing). Supervised observation and directed teaching in respective field of endorsement.

**MUE 4990/6990. Special Topics in Music Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**MUE 7000. Directed Individual Study.** Hours and credits to be arranged.

**MUE 8990. Special Topics in Music Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**NUTRITION**

(For the interdisciplinary graduate programs in Nutrition, consult College of Agriculture and Life Sciences section of this *Catalog*, and the *Graduate Bulletin*.)

**NTR 4115/6115. Nutrition. (5)** Spring Semester. (Prerequisites: CH 2503, CH 2501). Five hours lecture. Nutrition of monogastric and ruminant species. Anatomy, physiology, digestion and absorption pertain-

ing to monogastric and ruminants. Description, functions, sources, deficiency symptoms and requirements of nutrients.

**NTR 4253/6253. Human Nutrition I. (3)** (Prerequisites: BIO 2014 and CH 2503 or equivalent). Three hours lecture. Advanced human nutrition: digestion, metabolism, function, requirements, and recommen-

ditions for carbohydrates, lipids, proteins and water. (Same as NTR 4253/6253).

**NTR 4293/6293. Human Nutrition II. (3)** (Prerequisites: BIO 4253/6253 or consent of instructor). Three hours lecture. Advanced human nutrition and metabolism with emphasis on the functions, requirements, and recommendations of the regulatory nutrients (vitamins and minerals) and water. (Same as HS 4293/6293).

**NTR 4313/6313. Food Industry Nutrition Issues. (3)** (Prerequisite: consent of instructor). Three hours lecture. Designed to help food technologists understand scientific evidence, changing demographics and lifestyles, and consumer perceptions influence food product demand and thus diet quality. (Same as FST 4313/6313).

**NTR 4990/6990. Special Topics in Nutrition. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**NTR 6233. Medical Nutrition Therapy. (3)** (Prerequisites: HS 3213, HS 4223, BCH 3613 and BIO 2014 or consent of instructor). Two hours lecture. Two hours laboratory. Treatment of human diseases through nutrient modification. (Same as HS 6233).

**NTR 6243. Nutrition Throughout the Life Cycle. (3)** (Prerequisite: HS 4223/6223). Three hours lecture. Study of interrelationships of physiological, biochemical and sociological factors and nutrient needs of individuals and groups during the life cycle; infancy through the later years. (Same as HS 4243/6243).

**NTR 6333. Fish and Shellfish Nutrition. (3)** (Prerequisites: CH 2503 and CH 2501 or BCH 3613). Three hours lecture. Fundamental and applied aspects of the nutrition of fish, crustacean, and mollusk species including feeding behavior, nutritional ecology, energetics, and nutrient requirements. (Same as WF 4333/6333).

**NTR 6423. Feed Manufacturing. (3)** (Prerequisites: CH 2503 and CH 2501). Two hours lecture. Two hours laboratory. Mill design and equipment; procurement, storage and quality control for ingredients and complete feeds; formulation of practical type poultry rations. (Same as PO 4423/6423).

**NTR 7000. Directed Individual Study.** Hours and credits to be arranged.

**NTR 8000. Thesis Research and Thesis.**

**NTR 8114. Comparative Nutrition. (4)** Spring semester. (Prerequisites: BCH 4613/6613 or equivalent). Three hours lecture. Two hours laboratory. Attention is given to background information concerning various nutrients, their functions, and their participation in energy transactions of the body.

**NTR 8111-8131. Nutrition Seminar. (1)** Survey of current literature; preparation, organization, and presentation of papers on selected topics in nutrition.

**NTR 8123. Methods in Nutrition Research. (3)** Fall semester. (Prerequisites: NTR 4115/6115 and ST 8114 or equivalent). Two hours lecture. Three hours laboratory. Application of analytical methods used in research techniques; practice in writing research proposals, conducting a research project, and preparing research finds suitable for scientific publication.

**NTR 8153. Ruminant Nutrition. (3)** (Prerequisite: NTR 4115/6115 or Equivalent). Three hours lecture. In-depth treatment of rumen function and recent concepts in ruminant nutrition.

**NTR 8162. Monogastric Nutrition. (2)** Fall semester. (Prerequisite: NTR 4115/6115 or equivalent). Two hours lecture. Monogastric nutritional relationships with special emphasis on swine nutrition. Metabolic functions, dietary requirements, deficiency symptoms and distribution of nutrients in feedstuffs.

**NTR 8183. Specialty Nutrition. (3)** Summer semester. (Prerequisite: NTR 4115/6115 or equivalent). Three hours lecture. Nutritional requirements and special dietary considerations necessary to the nutrition of fish, dogs, cats, horses, mink, rabbits, and laboratory animals.

**NTR 8233. Maternal, Infant and Child Nutrition. (3)** Three hours lecture. Nutritional needs during reproduction and growth; problems in nourishing women during the reproductive period, infants, and children; indices of growth and development. (Same as HS 8233).

**NTR 8243. Community Nutrition. (3)** (Prerequisite: HS 3213). Three hours lecture. Nutrition services and problems in the community. Supervised experience in methods for determining and implementing action programs in nutrition education. (Same as HS 8243).

**NTR 8253. Nutrition and Food Science Research Techniques. (3)** Spring semester. One hour lecture. Six hours laboratory. Application of various instruments and techniques for assay of food and biological material. (Same as FST 8253).

**NTR 8261. Dietetic Internship Seminar. (1)** (Prerequisite: Admission into the School of Human Sciences Dietetic Internship/Graduate Studies Program). One hour lecture. Selection of current topics in foods, nutrition or dietetics and in-depth review of current literature for critical analysis presentation. (Same as HS 8261).

**NTR 8273. Dietetic Internship Capstone. (3)** (Prerequisite: Admission into the School of Human Sciences Dietetic Internship/Graduate Studies Program). Three hours lecture. Theoretical aspects of dietetics gained through the study of resources, technology, professional standards, and other factors that influence entry-level practice. (Same as HS 8273).

**NTR 8443. Avian Nutrition. (3)** (Prerequisite: NTR 4115/6115 or equivalent). Three hours lecture. Study of the nutrient functions, dietary relationships, deficiency symptoms, distribution in feedstuffs and quantitative requirements of nutrients.

**NTR 8463. Advanced Animal Nutrition. (3)** (Prerequisite: NTR 4115/6115 or prior approval from instructor). Two hours lecture. Two hours laboratory. Develop an understanding of nutritional physiology, metabolism, and utilization of nutrients by animal species.

**NTR 8473. Micro-Nutrient Nutrition. (3)** (Prerequisite: NTR 8114 or equivalent). Three hours lecture. Detailed study of functions, deficiency symptoms, dietary considerations necessary to the nutrition of fish, dogs, cats, horses, mink, rabbits, and laboratory animals.

**NTR 8990. Special Topics in Nutrition. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**NTR 9000. Dissertation Research and Dissertation.** Hours and credits to be arranged.

## Department of HEALTH, PHYSICAL EDUCATION, RECREATION and SPORT

Office: 216 McCarthy Gymnasium

Professors: Abadie, Hunt, Kirk (head); Associate Professor: Lamberth;  
Assistant Professors: Chromiak, Dohoney, Foxworth, Jordan, Smith;  
Instructors Funderburk, Wiley, and Young.

**PE 1001. Racquetball. (1)** Two hours laboratory. Emphasis is on rules, knowledge, skill development, and team tactics necessary to successfully participate in an organized game.

**PE 1021. Basic Physical Fitness Concepts. (1)** Two hours laboratory. Basic knowledge, understandings and values of physical fitness. Emphasis on individualized fitness evaluation procedures and diversified program construction.

**PE 1041. Aerobics. (1)** Two hours laboratory. Assessment, development and maintenance of physical fitness through aerobic exercises to music.

**PE 1051. Beginning Karate. (1)** Two hours laboratory. The essential principles both physical and psychological will be stressed. Emphasis is placed on organization of karate techniques and training methods.

**PE 1071. Soccer. (1)** Two hours laboratory. Emphasis is on rules, knowledge, skill development, and team tactics necessary to successfully participate in an organized game.

**PE 1081. Beginning Golf. (1)** Two hours laboratory. Instruction and laboratory experience in the development of individual skills for participation in golf.

**PE 1091. Contemporary Dance. (1)** Two hours laboratory. A non-majors course designed to develop skills in contemporary dance routines.

**PE 1101. Karate for Intermediates. (1)** (Prerequisite: PE 1051 or prior Karate experience having attained the rank of Yellow Belt). Two hours laboratory. Current events of the American Karate world. Advanced free-fighting and self-defense techniques. Interpretation of forms.

**PE 1111. Physical Development. (1)** Two hours laboratory. This course is designed to develop understanding in the conceptual knowledge of fitness and physical conditioning and maintenance of human wellness. (May be taken up to four times for credit).

**PE 1112. Teaching Team Sports. (2)** One hour lecture. Two hours laboratory. Theory of and participation in non-traditional and traditional team sports. Analysis of skills, discussion of developmental appropriateness, terms, basic rules and teaching strategies.

**PE 1121. Advanced Physical Development. (1)** Two hours laboratory. A continuation of PE 1111. This course is designed to further the understanding in the conceptual knowledge of fitness and physical conditioning and maintenance of human wellness. (May be taken up to four times for credit).

**PE 1122. Teaching Individual and Dual Sports. (2)** One hour lecture. Two hours laboratory. Theory of and participation in non-traditional and traditional individual and dual sports. Analysis of skills, discussion of developmental appropriateness, terms, basic rules and teaching strategies.

**PE 1123. History and Appreciation of Dance. (3)** Two hours lecture, two hours laboratory. A course designed to acquaint students with the history of dance and to develop a greater sensitivity, appreciation and understanding of this art.

**PE 1131. Fitness Walking/Jogging. (1)** Two hours laboratory. An exercise and activity class emphasizing walking and/or jogging to develop and maintain fitness, weight control and flexibility.

**PE 1132. Teaching Lifetime Activities. (2)** One hour lecture. Two hours laboratory. Activities, methods and theories within outdoor education. Introduction of concepts, activities, technologies and teaching methods for strength training, aerobic conditioning, fitness assessment and stress management.

**PE 1142. Teaching Rhythms. (3)** One hour lecture. Two hours laboratory. Instruction, demonstration, skill development, and teaching techniques in the areas of square, folk, and contemporary dance.

**PE 1151. Teaching Gymnastics and Tumbling. (1)** (Prerequisite: Consent of instructor). Two hours laboratory. Teaching methods for instructional procedure in gymnastics and tumbling. (May be taken up to four times for credit).

**PE 1181. Training Techniques for Physical Conditioning. (1)** Two hours laboratory. Provides the student with theoretical and laboratory experiences in the development of muscular strength, flexibility, and cardiovascular endurance. (May be taken up to four times for credit).

**PE 1213. Introduction to Exercise Science. (3)** Three hours lecture. This course is designed to provide students and overall understanding of the professions within Exercise Science.

**PE 1221. Volleyball. (1)** Two hours laboratory. Emphasis is on rules, knowledge, and team tactics necessary to successfully participate in an organized game.

**PE 1223. Personal Health. (3)** Three hours lecture. An introductory survey of the multiple dimensions of health. Focus is upon healthy behaviors across the lifespan as well as environmental and social influences.

**PE 1231. Modern Dance. (1)** (Prerequisite: Consent of Department Head). Two hours laboratory. Laboratory experience including a wide range of fundamental exercises and techniques, movement patterns, and dance choreography.

**PE 1233. Introduction to Lifetime Leisure. (3)** Three hours lecture. A comprehensive examination of leisure from psychological, sociological, economical and historical contexts. Includes an exploration of individual and group activities appropriate for lifetime involvement.

**PE 1241. Tennis (1)** Two hours laboratory. Emphasis is on rules, knowledge, skill development, and team tactics necessary to successfully participate in an organized game.

**PE 1271. Fitness and Conditioning. (1)** Two hours laboratory. This course provides the student with necessary cognitive and laboratory experiences to make personal decisions specific to fitness and conditioning. (May be taken up to four times for credit).

**PE 1313. Introduction to Physical Education. (3)** Three hours lecture. Interpretation of the meaning of physical education based on the significant facts of the biological sciences.

**PE 1361. Strength Training. (1)** Two hours laboratory. Principles and practice of strength training with particular emphasis on specificity of design and management of load, repetitions, rate of exercise and recovery time.

**PE 1461. Badminton. (1)** Two hours laboratory. Emphasis is on rules, knowledge, skill development, and team tactics necessary to successfully participate in an organized game.

**PE 1471. Country and Western Dance. (1)** Two hours laboratory. The course provides a broad introduction to country and western dance and related activities which can be enjoyed throughout an individual's lifetime.

**PE 1783. Introduction to Athletic Training. (3)** Three hours lecture. Introduction to the theory and practice of athletic training.

**PE 2001. Practicum in Health and Physical Education. (1)** Two hours laboratory. This course is designed to provide a laboratory experience for health and physical education majors in actual teaching situations.

**PE 2003. Foundations of Health Education. (3)** Three hours lecture. Introduction to the discipline of Health Education. Examination of fundamental concepts and required competencies of the health educator in a variety of settings.

**PE 2163. Consumer Health. (3)** Three hours lecture. A study of consumer health for major students. The course is designed to acquaint students with junk foods, drugs, health laws, and health services.

**PE 2221. Lifeguarding. (1)** (Prerequisite: Swim 500 yards continuously using a front crawl, a sidestroke, a stroke done on the back using an inverted scissors or breaststroke kick, and breaststroke). Two hours laboratory. Knowledge and skills designed to save an individual's own life or the life of another in the event of an emergency.

**PE 2231. Water Safety Instructor Certification. (1)** Prerequisite: Red Cross Advanced Lifesaving Certificate). Two hours laboratory. Preview of all Red Cross swimming classes.

**PE 2603. Medical Terminology. (3)** Three hours lecture. A working knowledge of terminology related to the human body through descriptive definitions, practical applications, and medical abbreviations will be developed.

**PE 2613. Exercise Electrocardiography. (3)** (Prerequisite: BIO 1004). Three hours lecture. Basic and intermediate electrocardiography including cardiac function, lead systems, rate, rhythm, axis, infarction, ischemia, hypertrophy and effects of cardiovascular drugs and exercise on ECG.

**PE 2990. Special Topics in Physical Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PE 3033. Basketball/Football Officials. (3)** Three hours lecture. A course designed to qualify officials for major sports officiating in Mississippi. Rules, rules interpretation, and mechanics of officiating for the major sports are covered.

**PE 3111. Advanced Military Physical Fitness. (1)** (Prerequisites: MS 3113, MS 3123, MS 4113, MS 4123). One hour laboratory. Develops the physical fitness required of an officer in the Army through emphasis of individual fitness programs and examination of the role of exercise/fitness. (May be taken up to four times for credit).

**PE 3123. Principles and Methods of Elementary School Health and Physical Education. (3)** Three hours lecture. Principles and methods of teaching health and physical education to elementary school children.

**PE 3133. Adapted Physical Education. (3)** (Prerequisite: Consent of the instructor). Two hours lecture. Two hours laboratory. A study of the psychomotor domain with emphasis on identifying handicapping problems and developing instructional strategies for remediating these problems.

**PE 3153. Methods of Elementary Physical Education. (3)** Three hours lecture. Designed to provide students with knowledge and practical experience that will enhance their effectiveness in teaching physical education to pre-school through fifth grade students.

**PE 3163. Principles and Methods of Secondary School Health and Physical Education. (3)** (Prerequisite: Senior standing). Three hours lecture. This course is designed to emphasize contemporary teaching methods in all areas of health and physical education in the secondary school.

**PE 3173. Measurement and Evaluation in Exercise Science. (3)** Three hours lecture. Emphasis is placed on fitness assessment and statistical interpretation of data related to fitness.

**PE 3183. Psychology of Coaching. (3)** Three hours lecture. Psychological principles applied to athletic coaching.

**PE 3213. Emergency Health Care. (3)** Three hours lecture. First Aid procedures which include shock, wounds, CPR, resuscitation, poisoning, transportation, hemorrhaging, splinting, burns, respiratory problems, etc. are taught and practiced.

**PE 3223. Motor Development and Movement. (3)** (Prerequisite: PE 3123 and BIO 1004). Two hours lecture. Two hours laboratory. A study of motor development, movement and the child-centered approach to teaching movement in grades K-6.

**PE 3263. Basic Principles of Health Promotion. (3)** (Prerequisite: PE 2003 Foundations of Health Education). Three hours lecture. Basic concepts of health promotion. Role of Health/Fitness professionals in developing wellness/prevention oriented interventions to promote healthy lifestyles.

**PE 3273. Athletic Training I. (3)** (Prerequisites: PE 1783 and BIO 1004). Two hours lecture. Two hours laboratory. Prevention and treatment of injuries prevalent in athletics, physical education and adult fitness programs.

**PE 3283. Athletic Training Practicum I. (3)** (Prerequisites: PE 1783 and consent of instructor). Three hours practicum. A supervised

work experience of 375 hours; interacting with intramural sports teams is required.

**PE 3293. Athletic Training Practicum II. (3)** (Prerequisite: PE 3283). Three hours practicum. A supervised work experience of 375 hours; interacting with secondary school sports teams is required.

**PE 3303. Physiology of Exercise. (3)** (Prerequisite: BIO 1004). Two hours lecture. Two hours laboratory. Functions of the body in muscular work; physiological aspects of training, physical fitness and fatigue.

**PE 3422. Coaching Football. (2)** Two hours lecture. Theoretical study of football fundamentals, positions, styles of offensive and defensive rules, signal methods, generalship, and team play.

**PE 3432. Coaching Basketball. (2)** Two hours lecture. Theoretical study of basketball from a coaching standpoint; fundamental and team play; methods of teaching fundamentals stressed; team organization.

**PE 3433. General Safety Methods. (3)** (Prerequisite: Junior standing). Three hours lecture. Analysis of accident causes and methods of prevention. Home, school, industry, farm, water, pedestrian problems considered.

**PE 3452. Coaching Softball and Baseball. (2)** Two hours lecture. Theoretical study of baseball and softball fundamentals and coaching techniques.

**PE 3623. Applied Exercise Physiology. (3)** (Prerequisite: PE 3303). Three hours lecture. Study of the application of mechanisms of metabolic control, force production, and cardiorespiratory support to acute and chronic adaptations of exercise.

**PE 3633. Rehabilitation Techniques in Sport. (3)** (Prerequisite: PE 3273). Two hours lecture. Two hours laboratory. Investigate aspects of physiotherapy utilized in treatment of injuries. Course will be supported with assistance of Oktibbeha County Hospital.

**PE 3643. Applied Anatomy. (3) (Prerequisite: BIO 1004. (3)** Three hours lecture. Provide an in-depth analysis of muscle structure, muscle function, adaption of muscle to resistance training, and effects of disuse.

**PE 4000. Directed Individual Study.** Hours and credits to be arranged.

**PE 4113/6113. Fitness Programs and Testing Procedures. (3)** (Prerequisite: PE 3303 and PE 3173). Two hours lecture. Two hours laboratory. Provides study of and practice in conducting adult fitness programs and fitness testing procedures.

**PE 4133. Exercise Programs for Special Populations. (3)** Three hours lecture. This course describes the methods of prescribing exercise programs for individuals with special medical conditions.

**PE 4153/6153. Training Techniques for Exercise and Sport. (3)** (Prerequisite: PE 3303). Three hours lecture. Training techniques used for exercise and sport and their acute and chronic effect upon the body.

**PE 4173. Tests and Measurements in Health and Physical Education. (3)** Three hours lecture. Test construction, test administration, and statistical procedures for evaluating test results in health and physical education.

**PE 4183. Exercise and Weight Control. (3)** Two hours lecture. Two hours laboratory. The course describes the relationship between physical activity and nutrition for the maintenance of ideal body weight and optimal health throughout life.

**PE 4210. Fitness Management Internship. (1-9)** (Prerequisite: PE 4113; senior status, five hours of PE activity electives). Hours and credits to be arranged. A supervised observation and teaching experience in a fitness/health enhancement facility.

**PE 4233. Biomechanics. (3)** (Prerequisites: BIO 1004). Three hours lecture. Analysis of movement; body mechanics; relationship and application of principles of movement to teaching physical education.

**PE 4313-4316. Sports Communication Internship. (3,6)** (Prerequisite: Consent of instructor). Hours and credits to be arranged. A supervised observation and practicum experience in a sports communication setting.

**PE 4413. Basic Driver and Traffic Safety Education I. (3)** (Prerequisite: Valid driver's license, two years driving experience). Two hours lecture. Two hours laboratory. Critical analysis of traffic accidents, attitude factors, essential knowledge of automobile operations and traffic laws and regulations; laboratory experiences for developing driving skills.

**PE 4423. Driver and Traffic Education Methods II. (3)** (Prerequisite: PE 4413). Two hours lecture. Two hours laboratory. Professional preparation of college students who plan to teach driver education in secondary schools; methods of teaching and administering program; scheduling, financing, and public relations.

**PE 4503. Contemporary Issues in Health Education. (3)** Three hours lecture. In-depth examination of important contemporary issues in

school, community, and worksite health. Emphasis is placed on examination of current literature in the field.

**PE 4603. Exercise in Health and Disease. (3)** (Prerequisites: PE 3303 and PE 2603). Three hours lecture. Focus on the pathophysiology and risk factors of diseases and associated health problems attributable to physical inactivity.

**PE 4783. Athletic Training II. (3)** (Prerequisites: PE 3273 and PE 4233). Three hours lecture. A specialized course in initial clinical evaluation of athletic injuries, emergency care procedures, and training room administration.

**PE 4793. Athletic Training Practicum III. (3)** (Prerequisite: PE 3293). Three hours practicum. A supervised work experience of 375 hours; interacting with secondary school sports teams is required.

**PE 4853. Motor Learning and Skill Analysis. (3)** Three hours lecture. Designed to provide students with an understanding of how movement is produced and controlled and the principles that underlie the learning of motor skills.

**PE 4873. Professional Seminar in Physical Education and Athletics. (3)** (Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. A seminar dealing with legal, professional, administrative, and curriculum issues as they relate to physical education and athletics in the schools.

**PE 4883. School Health Education (3)**(Prerequisite: PE 2003 Foundations of Health Education or consent of instructor). Three hours lecture. Preparation for prospective teachers in planning, implementing and evaluating all aspects of comprehensive school health education.

**PE 4886, 4896. Student Teaching in Physical Education. (6,6)** (Both courses to be taken concurrently). (Prerequisites: Admission to Teacher Education and senior standing). Supervised observation and directed teaching in respective field of endorsement.

**PE 4893. Athletic Training Practicum IV. (3)** (Prerequisite: PE 4793). Three hours practicum. A supervised work experience of 375 hours; interacting with secondary school sports teams or intercollegiate athletics is required.

**PE 4990/6990. Special Topics in Physical Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PE 7000. Directed Individual Study.** Hours and credits to be arranged.

**PE 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**PE 8113. Curriculum Construction in Health and Physical Education. (3)** Three hours lecture. Principles, problems, and procedures in the development of a physical education curriculum are considered. Special emphasis is placed upon developing a course of study in physical education for a chosen situation.

**PE 8123. Physical Education and Sport Programs.(3)** Three hours lecture. Study of principles, problems, human relationships, and procedures in supervision. Involves theories of leadership, programs, and philosophies of the profession.

**PE 8143. Problems in Health Education. (3)** Three hours lecture. Includes current information relating to various health problems in our society. Stresses methods of prevention and wellness at different levels of curriculum organization.

**PE 8153. Wellness and Aging. (3)** (Prerequisites: PE 3303 or PSY 4403/6403 or consent of Department). Three hours lecture. A study designed to prepare practitioners to initiate, develop, and conduct programs in wellness and movement activities for the enrichment of life in older populations.

**PE 8163. Seminar in Physical Education. (3)** The course gives a complete review of current literature in Health, Physical Education, and Recreation.

**PE 8193. Professional Preparation in Health Education, Physical Education, and Recreation Education. (3)** Three hours lecture. This course covers NASPE guidelines for professional preparation. Special areas are professional roles, academic advisement, and professional writing skills.

**PE 8213. Problems in the Administration of Athletics. (3)** Three hours lecture. Interscholastic athletic program; place of athletics in education, program organization and administration, budget, equipment, facilities, public relations, legal liability, and eligibility and contest regulations.

**PE 8223. Advanced Motor Learning and Motor Performance. (3)** Two hours lecture. Two hours laboratory. This course is designed to investigate, observe, and evaluate human demands which occur during sports activity. Sensory, psychological, perceptual, and motor demands are investigated.

**PE 8243. Cardiorespiratory Exercise Physiology. (3)** (Prerequisite: PE 3303). Three hours lecture. Advanced principles of cardiovascular and respiratory physiology, with special emphasis on the physiological responses of these systems to acute and chronic exercise.

**PE 8263. Exercise Biochemistry. (3)** (Prerequisites: PE 3303). Three hours lecture. Functioning, interrelationships and adaptations of the systems of the body during acute and chronic exercise.

**PE 8273. Laboratory Instrumentation. (3)** (Prerequisite: PE 3303). Six hours laboratory. A course in the function, calibration and operation of physical education laboratory instruments.

**PE 8283. Environmental Exercise Physiology. (3)** (Prerequisite: PE 3303; suggested prerequisite or corequisite PE 8243). Three hours lecture. Advanced principles and applications in exercise physiology including responses to acute exercise and chronic training in the heat, cold, and at high and low pressures.

**PE 8303. Research in Exercise Science and Sport. (3)** A study of research methods and techniques; the preparation of the research proposal specific to exercise science and sport; and familiarization with APA writing guidelines.

**PE 8313. Interpretation of Data in Exercise Science and Sport. (3)** Three hours lecture. Measurement, analysis and interpretation of data in exercise science and sport.

**PE 8323. Introductory Concepts Basic to Cardiac Rehabilitation. (3)** (Prerequisite: PE 3303). Two hours laboratory. An overview of the expanding field of cardiac rehabilitation and the opportunities for the physical educator.

**PE 8423. Graded Exercise Testing. (3)** (Prerequisite: PE 3303). Two hours lecture. Two hours laboratory. Methods of supervising graded exercise testing, including interpretation of basic electrocardiography.

**PE 8513. Theory and Practice of Health Education. (3)** Three hours lecture. Historical perspectives and current status of health education/promotion. Fundamental constructs of the discipline in school, community, and worksite settings.

**PE 8523. Health Promotion Techniques. (3)** Three hours lecture. Examination of techniques utilized in delivery of health promotion interventions. Emphasizes use of technology in development of activities suitable for diverse audiences and settings.

**PE 8543. Health Education for Diverse Populations. (3)** Three hours lecture. This course is designed to help students identify and develop programs to overcome the health disparities that exist in diverse populations.

**PE 8553. Behavioral Epidemiology. (3)** Three hours lecture. Behavioral and social environmental issues related to premature morbidity and mortality patterns. Current research literature and application of epidemiological principles to health education/promotion.

**PE 8613. Design and Administration of Health Promotion Programs. (3)** Three hours lecture. Principles of health promotion planning models applicable to school, community, and worksite programs. Investigation of existing programs and current literature.

**PE 8653. Implementation and Evaluation of Health Promotion Programs. (3)** Three hours lecture. Development and application of evaluation protocols for health promotion programs. Process, impact and outcome measures are examined.

**PE 8710. Internship. (3-6)** (Prerequisite: Consent of the Department Head). Opportunity for practical experience in business, fitness/wellness and sports organizations.

**PE 8803. Sport Law (3)** Three hours lecture. The analysis and application of the legal foundations, concepts and issues impacting the sports industry.

**PE 8823. The Sport Product. (3)** Three hours lecture. An examination of the uniqueness of the sport product and the importance of effective advancement and visibility of the sport product.

**PE 8833. Event and Facility Management. (3)** Three hours lecture. The principles and applications of management, design, and maintenance concepts as they apply to indoor and outdoor events and facilities.

**PE 8883. Sports Ethics. (3)** Three hours lecture. Philosophical exploration in the recognition, analysis, and implementation of ethical thought and the ethical decision making process within the multivalued contexts of the sports industry.

**PE 8990. Special Topics in Physical Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Department of PHYSICS and ASTRONOMY

Office: Hilbun Hall

Professors Novotny (Head), Bauman, Cook, Ferguson, Foley, Harpole, Koshel, Lestrade, Ma, Monts, and Su;  
Professors Emeriti Croft, Crow, Denson, Howell, Jones and Rundel;  
Associate Professors Arnoldus, and Winger;  
Assistant Professors Clay, Dunne, Ermer and Kim;  
Adjunct Lindner, Luthe, Singh, Wang, and Winstead;  
Instructor/Instructional Support Coordinator Worthy

When both PHY 2414 and PHY 2424 are taken at the same community college they will equate to PH 1113, PH 1123 and PH 1133.

When both PHY 2514/2515 and PHY 2524/2525 are taken at the same community college they will equate to PH 2213, PH 2223, and PH 2233.

**PH 1001. Introduction to Physics. (1)** (Prerequisite: Consent of instructor). One hour lecture. Only open to Freshmen and transfer physics majors or prospective majors. Introduction to the profession. Historical perspectives. Use of microcomputers in physics.

**PH 1011. Physical Science Laboratory 1. (1)** (Prerequisites or corequisites: PH 1013 or PH 1063). Two hours laboratory. Experiments in mechanics, sound, light, electricity, and astronomy.

**PH 1013. Physical Science Survey 1. (3)** (Counts toward teacher certification in general science, but not physics/chemistry). Three hours lecture. Topics include mechanics, sound, light, electricity, and astronomy. Recommended laboratory PH 1011.

**PH 1021. Physical Science Laboratory 2. (1)** (Prerequisite or corequisite: PH 1023) Two hours laboratory. Experiments in chemistry, heat, meteorology, and geology.

**PH 1023. Physical Science Survey 2. (3)** (Counts toward teacher certification in general science, but not in physics/chemistry). Three hours lecture. Topics include chemistry, heat, meteorology, and geology. Recommended laboratory PH 1021.

**PH 1041. Physics Laboratory A. (1)** (Prerequisite or corequisite: PH 1042). Two hours laboratory. Experiments in sound and waves.

**PH 1042. Physics of Sound and Music. (2)** Two hours lecture. Primarily for the non-technical student. Production, propagation, and perception of sound. Applications to musical instruments, architectural acoustics, high fidelity systems.

**PH 1063. Descriptive Astronomy. (3)** Three hours lecture. Night observation. The solar system; description and evolution of stars and the

universe; methods of obtaining astronomical information; applications of astronomical knowledge.

**PH 1113. General Physics. (3)** (Prerequisites: MA 1313 and MA 1323 or registration in MA 1713). Two hours lecture, one hour drill, two hours laboratory. Noncalculus-based study of the fundamental laws of mechanics, fluids, and relativity.

**PH 1123. General Physics. (3)** (Prerequisite: PH 1113). Two hours lecture, one hour drill, two hours laboratory. Noncalculus-based study of thermal physics, waves, sound, and light.

**PH 1133. General Physics. (3)** (Prerequisite: PH 1113). Two hours lecture, one hour drill, two hours laboratory. Noncalculus-based study of electricity and magnetism and selected topics in modern physics.

**PH 2213. Physics I. (3)** (Prerequisite: MA 1713). Three hours lecture. Calculus-based course emphasizing Newtonian mechanics and conservation laws.

**PH 2223. Physics II. (3)** (Prerequisites: PH 2213 and MA 1723). Two hours lecture, one hour recitation, two hours laboratory. Calculus-based introduction to gravitation, electricity and magnetism. Laboratory emphasizes concepts of force and motion, conservation laws, and simple electrical circuits.

**PH 2233. Physics III. (3)** (Prerequisite: PH 2223). Two hours lecture, one hour recitation, two hours laboratory. Calculus-based course in simple harmonic motion, waves, optics and an introduction to modern physics. Laboratory emphasizes optics and electronics.

**PH 2283. Honors Physics I. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors section of PH 2213.

**PH 2293. Honors Physics II. (3)** (Prerequisite: Open through invitation only). Two hours lecture. One hour recitation, two hours laboratory. Honors section of PH 2223.

**PH 2990. Special Topics in Physics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing



subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PH 3063. Astrophysics. (3)** (Corequisite: PH 3613 or consent of instructor). Three hours lecture. Quantitative treatment of astronomical topics. Stellar evolution, black holes, neutron stars, gamma-ray bursts, Newtonian and relativistic cosmologies, Big Bang.

**PH 3613. Modern Physics. (3)** (Prerequisites: PH 2233 or PH 1133; MA 2733, or registration in MA 2733). Three hours lecture. Special relativity, quantum physics, atomic, nuclear, and solid state physics.

**PH 4000. Directed Individual Study.** Hours and credits to be arranged.

**PH 4013/6013. Selected Topics in Physics for Teachers. (3)** Two hours class work, three hours laboratory. For teachers. Basic concepts of physics. Will include discussion and clarification of material from currently adopted public school textbooks.

**PH 4023/6023. Astronomy for Teachers. (3)** Two hours class work. Three hours laboratory. For teachers. An introduction to the physical universe with emphasis on observational astronomy.

**PH 4033/6033. Demonstrations and Concepts for Physics Teachers I. (3)** (Prerequisite: Consent of instructor). Two hours lecture, three hours laboratory. Topics are those normally covered in first semester high school physics. Equal emphasis on theory, problems, demonstrations, and laboratory.

**PH 4043/6043. Demonstrations and Concepts for Physics Teachers II. (3)** (Prerequisite: Consent of instructor). Two hours lecture, three hours laboratory. Topics are those normally covered in second semester high school physics. Equal emphasis on theory, problems, demonstrations, and laboratory.

**PH 4113/6113. Electronic Circuits for Scientists. (3)** (Prerequisites: PH 1133 or PH 2223 and MA 2733). Two hours lecture and three hours laboratory. DC and AC circuits. Resistors, capacitors, inductors, diodes and transistors in basic analog circuits. Topics include filters, tuned circuits, power supplies, amplifiers and oscillators.

**PH 4123/6123. Digital Electronics for Scientists. (3)** (Prerequisite: PH 1133 or 2223). One hour lecture and six hours laboratory. Transistors in switching circuits and gates. Digital logic. Microprocessor basics, support hardware, interaction of hardware and software, interfacing experiments.

**PH 4143/6143. Intermediate Laboratory. (3)** (Prerequisite: Junior standing). Six hours laboratory. Data analysis. Experiments in classical and modern physics. Scientific report writing.

**PH 4152/6152. Modern Physics Laboratory. (2)** Six hours laboratory. Introduction to measurement theory. The determination of  $e$ ,  $e/m$ , and  $h$ ; beta-ray spectroscopy, gamma-ray scintillation spectroscopy; Geiger counters; Raman effect; other experiments.

**PH 4213/6213. Intermediate Mechanics. (3)** (Prerequisites: PH 1133 or PH 2233 and MA 2733). Three hours lecture. Plane statics and dynamics of particles and systems of particles with emphasis on both derivation and application of principles involved.

**PH 4223/6223. Intermediate Mechanics. (3)** (Prerequisite: PH 4213/6213). Three hours lecture. Statics and dynamics of particles in three dimensional space using vector notation; Lagrange's equations; introduction to the special theory of relativity.

**PH 4323/6323. Electromagnetic Fields I. (3)** (Prerequisites: PH 1133 or PH 2233 and MA 2743). Three hours lecture. Electrostatics, dielectrics, electric current, magnetostatics, electromagnetic induction, magnetic properties of matter.

**PH 4333/6333. Electromagnetic Fields II. (3)** (Prerequisite: PH 4323/6323). Three hours lecture. Maxwell's equations, propagation of electromagnetic waves in free space and in matter, reflection and refraction, radiation.

**PH 4413/6413. Thermal Physics. (3)** (Prerequisites: PH 3613 and MA 2743). Three hours lecture. Thermodynamics, kinetic theory, classical and quantum statistical mechanics. Applications to low temperature physics, solid-state physics and plasma physics.

**PH 4513/6513. Intermediate Optics. (3)** (Prerequisites: PH 1123 or PH 2233 and MA 2733). Three hours lecture. Geometrical optics and physical optics.

**PH 4613/6613. Nuclear and Particle Physics. (3)** (Prerequisite: PH 3613). Three hours lecture. Special theory of relativity; nuclear structure; radioactivity; nuclear reactions; nuclear forces; fission; fusion; high energy particle and astrophysics. Experimental apparatuses and techniques.

**PH 4713/6713. Introduction to Quantum Mechanics. (3)** (Prerequisites: PH 3613 and MA 3253). Three hours lecture. Principles of

quantum mechanics, Heisenberg uncertainty principle, angular momentum; the Schrödinger wave equation in one and three dimensions; the one-electron atom.

**PH 4723/6723. Applications of Quantum Mechanics. (3)** (Prerequisite: PH 4713/6713). Three hours lecture. Introduction to perturbation theory and quantum statistics. Topics selected from multi-electron atoms, diatomic molecules, solid state and nuclear physics.

**PH 4813/6813. Introduction to Solid State Physics. (3)** (Prerequisite: PH 3613). Three hours lecture. Crystal structure, crystal diffraction and the reciprocal lattice, crystal binding, free electron gas, energy bands, and semiconductors.

**PH 4990/6990. Special Topics in Physics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PH 7000. Directed Individual Study.** Hours and credits to be arranged.

**PH 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**PH 8013. Modern Topics for Physics Teachers. (3)** (Prerequisites: Consent of instructor). Two hours lecture, three hours laboratory. Historical development of special relativity and quantum physics with particular emphasis on topics and experiments in atomic and nuclear physics.

**PH 8213. Mechanics. (3)** (Prerequisite: A good undergraduate training in physics and mathematics— consent of instructor). Coordinate systems and transformations, tensors, and matrices. Particle dynamics, variational principles, Lagrange's and Hamilton's equations, rigid body motion, special relativity in mechanics.

**PH 8233. Methods of Theoretical Physics I. (3)** (Prerequisite: Consent of instructor). Topics will vary, but may include linear vector spaces, tensor analysis, group theory, function space and orthogonal polynomials.

**PH 8243. Methods of Theoretical Physics II. (3)** (Prerequisite: PH 8233). Topics will vary but may include analytic functions, Fourier analysis, Green's functions, integral transforms, partial differential equations and integral equations.

**PH 8313. Electromagnetic Theory (3)** (Prerequisite: PH 4333 or equivalent). Maxwell's theory of electromagnetism. Boundary value problems in electrostatics, static multipole moments, theory of dielectrics, magnetostatics, plane electromagnetic waves, simple radiating systems. (Same as ECE 8313).

**PH 8513. Statistical Mechanics. (3)** (Prerequisites: PH 4713 and PH 4413). Classical and quantum statistical mechanics and statistical interpretation of thermodynamic quantities.

**PH 8613. Nuclear Physics I. (3)** (Prerequisite: PH 4723). Nuclear two-body problem and nuclear forces. Interpretation of experimental data through a study of nuclear models. Nuclear reactions and spectroscopy.

**PH 8623. Nuclear Physics II. (3)** (Prerequisites: PH 8613, PH 8743). Elementary particle theory and interpretation of experimental data.

**PH 8743. Quantum Mechanics I. (3)** (Prerequisites: PH 4723 and MA 3313). Schrödinger theory, spherically symmetric systems, matrix mechanics, angular momentum and spin, time-independent perturbation theory.

**PH 8753. Quantum Mechanics II. (3)** (Prerequisite: PH 8743). Time dependent perturbation theory, identical particles, theory of scattering, quantum-statistical mechanics, introduction of relativistic quantum mechanics, quantum electrodynamics.

**PH 8803. Molecular Structure. (3)** (Prerequisites: PH 8743). Theory of rotational, vibrational and electronic spectra of molecules. Molecular structure and determination of molecular constants.

**PH 8813. Solid State Physics. (3)** (Prerequisite: PH 8743). Theoretical interpretation of thermal, electric, and magnetic properties of solids.

**PH 8990. Special Topics in Physics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PH 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**Department of PHILOSOPHY and RELIGION**

Office: 29-30 President Circle

Professors Seger, and Jacobs;  
Associate Professors Clifford, Holt and Keehley,  
Assistant Professors Estes, Hardin, Kuehn, and Mullen

**PHI 1103. Introduction to Philosophy. (3)** Three hours lecture. An introduction to the major ideas and methods of philosophy. At least one philosophical classic is read, usually one suitable for orientation purposes.

**PHI 1113. Introduction to Logic. (3)** Three hours lecture. A development of practical ability in the major forms of valid argumentation concluding with a consideration of the universal and existential operators.

**PHI 1123. Introduction to Ethics. (3)** Three hours lecture. A study of the specific considerations, such as facts, feelings, principles, values and conflicts, which influence the making of concrete moral decisions.

**PHI 1183. Honors Introduction to Philosophy. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors section of PHI 1103.

**PHI 1193. Honors in Ethics. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Honors section of PHI 1123.

**PHI 2123. Medical Ethics. (3)** Three hours lecture. A philosophical study of situations requiring ethical decision making in the area of medicine. (Not open to freshmen).

**PHI 2133. Introduction to Aesthetics. (3)** Three hours lecture. Theories of art and the nature of beauty, designed to enhance the student's sensitivity and cultural awareness.

**PHI 2990. Special Topics in Philosophy. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PHI 3013. Business Ethics. (3)** Three hours lecture. A philosophical exploration of how to recognize, analyze, and implement ethical decisions within the multivalued contexts of the various fields of business.

**PHI 3023. History of Western Philosophy: Part I. (3)** Three hours lecture. A survey of major figures and movements from early Greek philosophy to the late Middle Ages.

**PHI 3033. History of Western Philosophy: Part II. (3)** Three hours lecture. A survey of major figures from the Renaissance through contemporary philosophy.

**PHI 3103. Symbolic Logic. (3)** (Prerequisite: PHI 1113 or equivalent). Three hours lecture. An analysis of the properties of formal systems along with special problems in the philosophy of logic.

**PHI 3113. Philosophy of Law. (3)** Three hours lecture. A philosophical analysis of the concepts of law, liberty, justice, responsibility, and punishment from the rival ethical perspectives of deterrence and retribution.

**PHI 3123. Philosophy of Religion. (3)** (Prerequisite: Three hours of philosophy). Three hours lecture. A critical inquiry into the rational justification of central theistic beliefs, with emphasis on the traditional philosophical arguments for and against the existence of God. (Same as REL 3123).

**PHI 3133. Seminar in Philosophy. (3)** Three hours lecture. (Prerequisites: Completion of fifteen hours of PHI courses, including PHI 1113). The study of selected philosophy essays and practice in philosophical composition.

**PHI 3143. Nineteenth - Century Philosophy. (3)** (Prerequisites: Three hours of philosophy or Junior standing or consent of instructor). Three hours lecture. A study of the major philosophical movements and figures of the nineteenth century.

**PHI 3213. Syllogism. (3)** (Prerequisite: PHI 1113). Three hours lecture. A concentrated study of the categorical syllogism, with emphasis on recent extensions of it.

**PHI 4000. Directed Individual Study. (3)** (Prerequisite: PHI 1103, PHI 1113, or PHI 1123). Hours and credits to be arranged.

**PHI 4123/6123. Existentialism and Postmodernism. (3)** (Prerequisite: 3 hours PHI or junior standing). Three hours lecture. A study of the 20th century philosophical movements of existentialism and postmodernism.

**PHI 4143/6143. Philosophy of Science. (3)** Three hours lecture. An analytical examination of the essential ingredients of science concluding with the effect of scientific values on contemporary culture.

**PHI 4153/6153. American Philosophy. (3)** (Prerequisite: Junior standing). Three hours lecture. Speculative and practical philosophies beginning with the early colonial settlers, and terminating with pragmatism, Santayana and Whitehead.

**PHI 4163/6163. Research Ethics. (3)** Three hours lecture. This course examines ethical issues that are generated by the tensional balancing of personal consideration against public good in the practice of scientific research.

**PHI 4213/6213. Theories of Inquiry. (3)** (Prerequisite: Junior/Senior standing or consent of instructor). Three hours lecture. A historical and topical examination of rival traditions and theories of inquiry. Special attention will be paid to the concepts of knowledge, warrant, and truth.

**PHI 4313/6313. Feminist Interpretations of Western Social and Political Philosophy. (3)** (Prerequisite: Junior/senior standing or consent of instructor). Three hours lecture. A survey of modern and contemporary social and political philosophical texts, which emphasizes recent feminist interpretations, analyses, and criticism of traditional social and political philosophy.

**PHI 4423/6423. Process Philosophy. (3)** Three hours lecture. A comprehensive study of the philosophy of Alfred North Whitehead and his influence on modern philosophy.

**PHI 4990/6990. Special Topics in Philosophy. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PHI 7000. Directed Individual Study. (3)** Hours and credits to be arranged.

**PHI 8990. Special Topics in Philosophy. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ANIMAL PHYSIOLOGY**

(For the interdisciplinary graduate programs in Animal Physiology, consult College of Agriculture and Life Sciences section of this *Catalog*, and the *Graduate Bulletin*.)

**PHY 6114. Cellular Physiology. (4)** (Same as BIO 4114/6114).

**PHY 6335. Anatomy and Physiology of Insects. (5)** (Prerequisite: EPP 4154/6154). (Same as EPP 6335.)

**PHY 6514. Animal Physiology. (4)** (Same as BIO 4514/6514).

**PHY 6611. Practice in Physiology of Reproduction. (3)** (Prerequisite: ADS 4613/6613 or taken concurrently). (Same as ADS 4611/6611).

**PHY 6623. Physiology of Lactation. (3)** (Prerequisite: VS 3014 or BIO 1504). (Same as ADS 4623/6623).

**PHY 6613. Physiology of Reproduction. (3)** (Prerequisite: BIO 1504 or VS 3014). (Same as ADS 4613/6613).

**PHY 6843. Poultry Physiology. (3)** (Prerequisite: PO 4833/6833 or consent of instructor). Two hours lecture. Two hours laboratory. Physiology of the fowl with emphasis on integration of body functions. (Same as PO 6843).

**PHY 8000. Thesis Research/Thesis.**

**PHY 8131. Endocrinological Methods. (1)** (Prerequisite: Coregistration in PHY 8133 or consent of instructor). Two hours laboratory. Characteristics of endocrinological research; hormone assay techniques, tissue culture techniques, instrumentation.

**PHY 8133. Endocrinology (3)** Three hours lecture. Study of factors by which cells communicate: the traditional endocrine system, autocrine, paracrine and neurocrine secretion. Physiological and genetic control of synthesis and secretion.

**PHY 8243. Advanced Physiology of Reproduction. (3)** (Prerequisite: ADS 4613/6613). (Same as ADS 8243).

**PHY 8333. Advanced Toxicology. (3)** (Prerequisite: EPP 4543/6543 or elementary biochemistry). (Same as EPP 8333).

**PHY 8433. Bone, Muscle and Fat Deposition in Animals. (3)** (Prerequisite: BCH 4613/6613). (Same as ADS 8433).

**PHY 8623. Physiology of Digestion and Metabolism. (3)** (Prerequisite: CH 4523/6523). (Same as PO 8823).

**PHY 8633. Homeostatic Regulations and Physiological Stress. (3)** Prerequisites: PHY 8133 and BIO 4514/6514). (Same as ADS 8633).

**PHY 8811-8841. Animal Physiology Seminar. (1)** Four one-hour seminars.

**PHY 8990. Special Topics in Physiology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer develop-

ing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PHY 9000. Dissertation Research/Dissertation.**

## Department of POULTRY SCIENCE

Office: 114 Hill Poultry Science

Professors Morgan (head), Chen, Hargis\*, May\*, Peebles, Sadler\*, Smith, Thaxton and Vizzier

Associate Professors Chamblee, McDaniel, and Schultz;

Assistant Professors, Branton\*, Lott, and Simmons\*.

**PO 2990. Special Topics in Poultry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PO 3011-3021. Seminar. (1)** One hour lecture. Preparation and presentation of specially assigned current problems in poultry science.

**PO 3103. Genetics I. (3)** Two hours lecture. Two hours laboratory. (Prerequisites: MA 1313, BIO 1504, or BIO 1203, or equivalents). Principles of heredity, genetic material, and gene expressions. (Same as BIO 3103, GNS 3103).

**PO 3313. Commercial Poultry Production. (3)** Three hours lecture. An introduction to practical management problems encountered in the production of commercial eggs, broiler production, and breeding flocks.

**PO 3323. Poultry Judging. (3)** Two hours lecture. Two hours laboratory. Breed type and variety characteristics including production and exhibition qualities: judging live, dressed poultry, poultry products; organization and operation of poultry contests and shows.

**PO 3333. Advanced Poultry Judging. (3)** Two hours lecture. Two hours laboratory. Advanced study of breed type and characteristics: intensified training in judging for production and exhibition qualities.

**PO 3353. Poultry Production Internship. (3)** (Prerequisite: Consent of instructor). Structured, progressive experiential learning with the live production division of a poultry integrator.

**PO 3363. Poultry Processing Internship. (3)** (Prerequisite: Consent of instructor). Structured, progressive experiential learning with the processing division of a poultry integrator.

**PO 4000. Directed Individual Study.** Hours and credits to be arranged.

**PO 4031-4041. Seminar. (1)** One hour lecture. Preparation and presentation of specially assigned current problems in poultry science.

**PO 4102/6102. Genetics II. (2)** (Prerequisite: PO 3103 or equivalent). Two hours lecture. Additional training in fundamental genetics. (Same as GNS 4102/6102).

**PO 4303/6303. Poultry Breeding and Hatchery Management. (3)** Three hours lecture. Principles of inbreeding, linebreeding, crossbreeding, heritability, pedigree records, embryonic development; study of mortality peaks; causes of low fertility and hatchability.

**PO 4313/6313. Management of Commercial Layers. (3)** Three hours lecture. Management of laying flocks as related to production of edible eggs; including housing, cage design, equipment, feeding techniques, lighting, molting and other factors involved with efficient production.

**PO 4323/6323. Management of Broiler Breeders. (3)** Three hours lecture. Farm layout, housing, equipment, management of laying and breeding flocks; rearing of pullets, feeding applications; other economic factors relating to efficient production.

**PO 4333/6333. Broiler Production. (3)** Three hours lecture. Practical management problems encountered in the production of broilers including breeding, housing, brooding, diseases, and feeding; field trips to intensified broiler areas.

**PO 4373. Hatchery Management Laboratory. (3)** Six hours laboratory. Fundamental principles of hatchery design, incubator layout, ventilation and humidity control, fertility and hatchability problems that relate to hatching chicks.

**PO 4413/6413. Poultry Nutrition. (3)** (Prerequisite: CH 2503 and PO 3313 or equivalents). Three hours lecture. Study of the digestion, absorption, and metabolism of nutrients in avian species. Special emphasis is given to practical nutritional needs of commercial poultry flocks.

**PO 4423/6423. Feed Manufacturing. (3)** Two hours lecture. Two hours laboratory. Mill design and equipment; procurement, storage and quality control for ingredients and complete feeds; formulation of practical type poultry rations. (Same as NTR 6423).

**PO 4513/6513. Poultry Processing. (3)** Two hours lecture. Two hours laboratory. Operation and study of modern processing equipment; grading poultry and eggs; killing, dressing, eviscerating, and packaging poultry; studying methods of retail and wholesale marketing. (Same as FST 4513/6513).

**PO 4523/6523. Commercial Broiler Processing Technology. (3)** Three hours lecture. Study of preparation of live broiler chickens for retail sales, including all pertinent technology, product flow, equipment and applicable regulations.

**PO 4833/6833. Poultry Anatomy. (3)** Two hours lecture. Two hours laboratory. Anatomy of the fowl with emphasis on morphology and organization of the avian body structures.

**PO 4990/6990. Special Topics in Poultry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PO 4843/6843. Poultry Physiology. (3)** (Prerequisites: PO 4833/6833 or consent of instructor). Two hours lecture. Two hours laboratory. Physiology of the fowl with emphasis on integration of body functions. (Same as PHY 6843).

**PO 7000. Directed Individual Study.** Hours and credits to be arranged.

**PO 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**PO 8513. Poultry Food Science Readings. (3)** (Prerequisite: PO 6513 or 3 hours in related courses offered in Animal Science, Dairy Science or Horticulture). One hour lecture. Six hours library research weekly. An intensive study of poultry food science literature dealing with chemical, microbial, physical and organoleptic attributes of eggs and poultry meats. (Same as FST 8513).

**PO 8823. Physiology of Digestion and Metabolism. (3)** (Prerequisites: CH 4523/6523). Three hours lecture. The chemistry and physiology of digestion and absorption; the fate of absorbed products in the body. (Same as PHY 8823).

**PO 8990. Special Topics in Poultry. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PO 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Master of Public Policy and Administration

(For departmental information, see Department of POLITICAL SCIENCE)

**PPA 7000. Directed Individual Study.** Hours and credits to be arranged.

**PPA 8103. Seminar in Public Administration. (3)** (Prerequisite: consent of instructor). Detailed examination of the major elements of the field of public administration, with particular emphasis on emerging trends in the field.

**PPA 8123. State Government Administration. (3)** Seminar in the practice and principles of state government administration, including judicial and legislative administration.

**PPA 8133. City and County Management. (3)** Seminar focus on small town and county management in quasi-bureaucratic settings. De-

tailed consideration of problem solving capabilities as they relate to different forms of local government structure.

**PPA 8143. Civil Rights and Affirmative Action. (3)** (Prerequisite: consent of the instructor). A seminar which examines the various civil rights laws and acts and court decisions related to affirmative action in the workplace and public policy.

**PPA 8153. Seminar in Privatization. (3)** (Prerequisite: Consent of instructor). Three hours lecture. Examination of the theoretical and practical issues of public-private partnerships.

**PPA 8193. Seminar in Intergovernmental Relations. (3)** (Prerequisite: 9 hours of graduate work). Three hours lecture. Examines the current day functioning of the American federal system. Focuses upon

national-state, national-local, interstate, state-local and interlocal relationships as well as fiscal federalism.

**PPA 8400. Public Administration Internship. (1-6)** Hours and credits to be arranged. (Prerequisite: Consent of instructor). Individual work experience under faculty guidance in a governmental or public agency. Scholarly paper on approved topic required. Student evaluations are assigned on satisfactory/unsatisfactory basis.

**PPA 8703. Government Organization and Administrative Theory. (3)** Detailed survey of organization theories and managerial techniques as they relate to the public sector.

**PPA 8713. Public Personnel Management. (3)** Course considers major developments in the issues and management practices affecting personnel such as affirmative action, unions, and civil service reforms.

**PPA 8723. Public Budgeting and Financial Management. (3)** Analysis of current financial and budgetary techniques as they apply to the public sector. Capital budgeting, debt administration, and financial management.

**PPA 8733. Public Program Evaluation. (3)** Techniques and analytical methods of assessing governmental program success. Special emphasis will be given to program designs, data collection and quantitative applications.

**PPA 8743. Administrative Law. (3)** (Prerequisite: PS 4703/6703). Three hours lecture. An environmental study of the legal nature and effect of policies and attitudes of government toward business, especially the power and limitations of regulatory agencies.

**PPA 8793. Directed Research in Public Administration. (3)** (Prerequisites: PPA 8803 and special consents). Individual instruction and supervision of research work in public policy and administration.

**PPA 8803. Research Methods for Public Affairs. (3)** Stress on research designs and methods, survey research and other techniques and measuring data. focus on applied approaches for mathematically analyzing governmental data. (Same as PS 8803).

**PPA 8813. Quantitative Methods for Public Affairs. (3)** (Prerequisite: PPA 8803 or PS 8803). Detailed consideration of selected quantitative analytic models and their application to public sector management and policy problems. (Same as PS 8813).

**PPA 8833. Systems in Public Administration. (3)** (Prerequisite: BIS 1013, CS 1013, TKT 1273, or equivalent). Three hours lecture. Role of automated, computer-based systems in government; their impact on the workplace, government institutions, and the governmental systems; selected topical applications.

**PPA 8903. Public Policy. (3)** Nature, determinants, and effects of public goods and services; policy formulation and implementation; seminar emphasizes contemporary issues such as strategic planning, leadership, and managerial control. (Same as PS 8903).

**PPA 8990. Special Topics in Public Policy Administration. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Ph.D. in Public Policy and Administration

**PPA 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**PPA 9103. American Political Institutions. (3)** (Prerequisite: consent of instructor). Three hours lecture. Seminar addressing theoretical and empirical issues pertaining to the dynamics of American political institutions. (Same as PS 9103)

**PPA 9413. Normative Analysis of American Public Policy. (3)** Three hours lecture. Seminar exploring issues in American politics and public policy from a normative perspective. (Same as PS 9413)

**PPA 9603. Scope of American Public Administration. (3)** (Prerequisite: Consent of the Instructor). Seminar dealing with historical background and development of American Public Administration as a discipline, and a review and analysis of current topics in the field.

**PPA 9613. Rural Government Administration I: Theoretical and Environmental Aspects. (3)** (Prerequisite: Consent of the Instructor). A seminar dealing with the principles of democratic theory as they affect the role of government and citizens' participation in government in rural settings.

**PPA 9623. Rural Government Administration II. Implementation Aspects. (3)** (Prerequisite: Consent of the Instructor). A seminar dealing with program implementation by rural and small town governments, including adoption and diffusion of management innovation by public administrators as change agents.

**PPA 9703. Organization Behavior in the Public Sector. (3)** (Prerequisite: Consent of the Instructor). Seminar dealing with major topics, issues, concerns of individual and group behavior in public organizations.

**PPA 9713. Administration of Human Resources in a Public Sector Environment. (3)** (Prerequisite: Consent of the Instructor). A seminar dealing with current basic research concerning management in the public sector environment.

**PPA 9723. Public Budgeting Processes and Their Policy Implications. (3)** (Prerequisite: Consent of Instructor). A seminar dealing with norms and behaviors of budget process participants, their impact on budget policy and implications of budget actions for democratic government.

**PPA 9803. Multivariate Analysis and Design for Public Affairs. (3)** (Prerequisite: PPA 8813). Seminar dealing with applications of multivariate statistical methods and special topics in research design to problems in public policy and administration.

**PPA 9893. American Political Behavior. (3)** (Prerequisite: PPA 9803 and consent of instructor). Three hours lecture. Seminar in American political behavior including public opinion, socialization, participation, and voting behavior. (Same as PS 9893).

**PPA 9903. Public Policy Formulation and Implementation. (3)** (Prerequisite: Consent of the Instructor). A seminar dealing with public policy formulation implementation and evaluation which stresses the theoretical aspects of policy processes.

## Department of POLITICAL SCIENCE

Office: 121 Bowen Hall

Professors Breaux (Head), Bhansali, Clynch, Feig, Shaffer, Tryman, and Wiseman;

\*Associate Professors Travis and Wall;

Associate Professors Emeritus Giles and Handy;

Assistant Professors Britton, Davenport and Goodman;

**PS 1113. American Government. (3)** Three hours lecture. The evolution of American governmental institutions and the organization and operation of the U.S. government today.

**PS 1193. Honors in American Government. (3)** (Prerequisite: Open through invitation only). Three hours lecture. The evolution of American governmental institutions and the organization and operation of the U.S. government today.

**PS 1311. Mississippi Model Security Council Research I. (1)** Hours arranged. Development of "delegate preparation materials" and Model Security Council booklet for use in Mississippi Model Security Council.

**PS 1313. Introduction to International Relations. (3)** Three hours lecture. This course examines through case studies the basic concepts of international politics such as nation, state, power, influence, bipolarity, deterrence, non-alignment, alliances and diplomacy.

**PS 1321. Mississippi Model Security Council Internship I. (1)** Hours arranged. Internship experience as participant in Mississippi Model Security Council as delegate, county advisor, council president, or United Nations Secretary General.

**PS 1331. Mississippi Model Security Council Research II. (1)** (Prerequisite: PS 1311 or PS 1321.) Hours arranged. Development of

"delegate preparation materials" and Model Security Council booklet for use in Mississippi Model Security Council.

**PS 1341. Mississippi Model Security Council Internship II. (1)** (Prerequisite: PS 1321.) Hours arranged. Internship experience as participant in Mississippi Model Security Council as delegate, county advisor, council president, or United Nations Secretary General.

**PS 1351. Mississippi Model Security Council Research III. (1)** (Prerequisite: PS 1331 or PS 1341.) Hours arranged. Development of "delegate preparation materials" and Model Security Council booklet for use in Mississippi Model Security Council.

**PS 1361. Mississippi Model Security Council Internship III. (1)** (Prerequisite: PS 1341) Hours arranged. Internship experience as participant in Mississippi Model Security Council as delegate, county advisor, council president, or United Nations Secretary General.

**PS 1371. Mississippi Model Security Council Research IV. (1)** (Prerequisite: PS 1351 or PS 1361.) Hours arranged. Development of "delegate preparation materials" and Model Security Council booklet for use in Mississippi Model Security Council.

**PS 1381. Mississippi Model Security Council Internship IV. (1)** (Prerequisite: PS 1361. Hours arranged. Internship experience as participant in Mississippi Model Security Council as delegate, county advisor, council president, or United Nations Secretary General.

**PS 1393. Honors in International Relations. (3)** (Prerequisite: Open through invitation only). Honors section of PS 1313.

**PS 1513. Comparative Government. (3)** Three hours lecture. Survey of various governmental systems.

**PS 1593. Honors in Comparative Government. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Introduction to comparative political inquiry including developing, democratic and authoritarian political systems.

**PS 2203. International Security and Strategic Studies. (3)** (Prerequisite: Junior standing or consent of Principal Instructor). Three hours lecture. Survey of the security and strategic interests of the major powers and weapons technology. Strategic doctrines, arms control and civil defense. (Same as HI 2203).

**PS 2403. Introduction to Political Theory. (3)** Three hours lecture. An examination of selected thinkers, text, ideas, and periods in the history of political thought.

**PS 2703. Introduction to Public Policy. (3)** (Prerequisite: PS 1113 or consent of instructor). Three hours lecture. An examination of the formulation and implementation of public policy and the roles of government institutions and actors in policy making.

**PS 2713. Politics of the American Bureaucracy. (3)** Three hours lecture. Historical development of governmental organizations. Role of administration, bureaucratic power and regulation, and role of the individual.

**PS 2990. Special Topics in Political Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PS 4000. Directed Individual Study. (3)** (Prerequisite: Junior standing). Hours and credits to be arranged.

**PS 4083. Senior Honors Research in Political Science. (3)** (Prerequisite: Senior standing, and consent of department head). Topic to be selected by the student under the guidance of an honors faculty advisor.

**PS 4093. Senior Honors Thesis in Political Science. (3)** (Prerequisites: PS 4083, and consent of department head). Thesis writing on the topic researched in PS 4083.

**PS 4464/6464. Political Analysis. (4)** (Prerequisite: 6 hours in political science). Three hours lecture. Two hours laboratory. Philosophical and historical foundations of political analysis; constructing and executing research designs; measuring political phenomena; elementary methods of data analysis; games, models, and simulations.

**PS 4990/6990. Special Topics in Political Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

### American Politics

**PS 3013. Political Leadership. (3)** Analysis of political leadership, emphasizing characteristics of successful leadership and opportunities available to students for leadership in the political arena.

**PS 3033. Gender and Politics. (3)** Three hours lecture. Examines gender differences in law, the courts, voting, political involvement, approaches to political power, and violence.

**PS 3063 Constitutional Powers. (3)** (Prerequisite: Junior standing or consent of instructor). Three hours lecture. A study of the constitutional system; constitutional modification, federal courts and judicial review, separation of the powers, federalism, congressional and presidential powers, and contact clause.

**PS 3073. Civil Liberties. (3)** (Prerequisite: Junior standing or consent of instructor). Three hours lecture. Political and civil rights; individual rights, national security and individual freedom; war and the Constitution; equal protection, criminal procedure; administrative process.

**PS 3183. Law and Politics. (3)** (Prerequisite: Sophomore standing or consent of instructor). Three hours lecture. Study of the politics of selected features of the legal system and the political usages of law as a tool for social control.

**PS 3193. Intergovernmental Relations. (3)** (Prerequisites: PS 1113 or PS 1193). Three hours lecture. Historical, prescriptive, and empirical studies of federalism with emphasis upon recent development in federal-state-local relationships.

**PS 4113/6113. State Government. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Comparative study of the structures, functions, and policies of the various American states.

**PS 4163/6163. The Chief Executive. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Historical and comparative

study of chief executives, including governors and mayors, with special emphasis on the Presidency.

**PS 4173/6173. Legislative Process. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Organization, work, and procedure of legislative bodies and other law-making authorities.

**PS 4183/6183. Judicial Process. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Process and structure of the American legal system and the role of the judiciary.

**PS 4193/6193. Mississippi Judicial System. (3)** (Prerequisite: PS 1113). Three hours lecture. A study of the interrelationship of the actors within Mississippi's judicial system. Emphasis is placed on judicial decision-making, selection process, and resource allocation.

**PS 4203/6203. Political Parties and Electoral Problems. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. The development and operation of American political parties, with special attention to electoral problems

**PS 4213/6213. Campaign Politics. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Survey of the theory of political campaigns, the resources and techniques they employ, and their effects on voters.

**PS 4223/6223. The Dynamics of American Democracy. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Analysis of factors affecting the translation of public opinion into public policy within a national institutional context.

**PS 4233/6233. Interest Groups. (3)** (Prerequisite: PS 1113 or consent of instructor). Three hours lecture. The study of the politics and practices of interest groups within the American political process.

**PS 4253/6253. Southern Politics. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Survey of the politics of the Confederate and border states, examination of party development, leadership, and impact of the South in national politics.

**PS 4263/6263. Mississippi Government and Politics. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. A study of the organization, powers, processes and politics of state government in Mississippi.

**PS 4273/6273. African American Politics. (3)** (Prerequisite: PS 1113). Three hours lecture. The nature, processes, structures, and functions of African American politics in the domestic arena and international arena.

**PS 4283/6283. Public Opinion. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. The nature of public opinion; the influence of the press; pressure groups and propaganda techniques; the means of political communication.

**PS 4293/6293. Political Behavior. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Examination of the foundations and types of individual political activity; emphasis on psychological, social and cultural factors influencing personal political behavior.

**PS 4703/6703. Principles of Public Administration. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Bureaucratic politics and power; administrative responsibility in a pluralist democracy; public administrative organization; public personnel administration; and public budgeting.

**PS 4743/6743. Environmental Policy. (3)** (Prerequisite: PS 1113, PS 2703, or consent of instructor). Three hours lecture. History, development, and practice of environmental policy in the United States.

### International Politics

**PS 4303/6303. U.S. Foreign Policy. (3)** (Prerequisite: PS 1313 or consent of instructor.) Three hours lecture. An examination of the decision-making processes, institutions and structures that influence the formulation and execution of past and current U.S. foreign policy.

**PS 4313/6313. Principles of International Law. (3)** (Prerequisites: PS 1313 and junior standing). Three hours lecture. The nature, sources and scope of international law as found in custom, international convention, the teachings of authoritative writers, and judicial decisions.

**PS 4323/6323. International Organization. (3)** (Prerequisites: PS 1313 and junior standing). Three hours lecture. A study of the development of international organization and a concentration on the structure, processes and functions of the United Nations and its specialized agencies.

**PS 4333/6333. Theories of International Relations. (3)** (Prerequisites: PS 1313 and junior standing). Three hours lecture. This course critically examines traditional and contemporary, normative and behavioral, qualitative and quantitative theories of international relations.

**PS 4343/6343. International Conflict and Security. (3)** (Prerequisite: PS 1313 and junior standing). Three hours lecture. Study of the patterns, causes, and consequences of armed conflict between nations.

**PS 4353/6353. International Political Economy. (3)** (Prerequisite: PS 1313 or consent of instructor). Three hours lecture. This course will systematically address the relationship between politics and economics in an international context.

**PS 4383/6383. National Security Policy. (3)** (Prerequisites: PS 1313 and junior standing). Three hours lecture. An examination of those policies and issues affecting American national security with attention to the institutions, organizations and processes which shape them.

**PS 4393/6393. The Global Context. (3)** (Prerequisite: Junior standing or consent of instructor). Three hours lecture. Examination of selected issues of current importance to international relations.

### Political Theory

**PS 4423/6423. 20th Century Political Thought. (3)** (Prerequisites: PS 2403 or consent of instructor). Three hours lecture. An examination of selected thinkers, text, and ideas in the history of political thought from the late 19th Century to the present.

**PS 4433/6433. American Political Theory. (3)** (Prerequisites: PS 1113 and junior standing). Three hours lecture. Major schools of political thought in America from the colonial to the contemporary period.

**PS 4453/6453. Western Political Theory: Plato to Marx. (3)** (Prerequisite: PS 1113 or PS 2403). Three hours lecture. Chronological survey of central thinkers, texts, ideas, and movements in Western political thought from Plato to Marx.

### Comparative Politics

**PS 4543/6543. African Politics. (3)** (Prerequisites: PS 1513 and junior standing). Three hours lecture. Contemporary sub-Saharan Black Africa; prospects for political development or decay. Role of parties, bureaucracy and military and their relation to elite formation and political integration.

**PS 4553/6553. West European Politics. (3)** (Prerequisites: PS 1513 and junior standing). Three hours lecture. Governments of countries of Western Europe with emphasis upon England, France, Germany, Italy, and Spain.

**PS 4573/6573. South and Southeast Asian Politics. (3)** (Prerequisites: PS 1513 and junior standing). Three hours lecture. An evaluation of the traditional and contemporary political institutions, behavior and ideas of the countries of South and Southeast Asia.

**PS 4583/6583. East Asian Politics. (3)** (Prerequisites: PS 1513 and junior standing). Three hours lecture. Political institutions and behavior in East Asia, particularly China and Japan.

**PS 4593/6593. Latin American Politics. (3)** (Prerequisites: PS 1513 and junior standing). Three hours lecture. Background, organization, and structure of the governments of the various Latin American countries.

**PS 4623/6623. Politics of the Third World. (3)** (Prerequisites: PS 1513 and junior standing). Three hours lecture. Political processes of developing nations. Prospects for development and decline considered. Relationship between political, economic and cultural dimension during the process of social change.

### Master of Political Science

**NOTE:** See latest *Graduate Bulletin* for admission information into the Political Science Department's M.A., M.P.P.A., or Ph.D. graduate programs.

**PS 7000. Directed Individual Study.** Hours and credits to be arranged.

**PS 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**PS 8113. Seminar in State Government and Politics. (3)** (Prerequisites: PS 4113 and nine hours of related courses, or consent of instructor). Three hours lecture. The examination of selected concepts in the policies, politics, machinery and/or powers of state government.

**PS 8153. Seminar in Campaign Politics. (3)** (Prerequisite: Consent of instructor). Analysis of conduct and phases of political campaigns; and their effect on voters and the political system generally.

**PS 8203. Seminar in Comparative Government. (3)** (Prerequisites: PS 1513 and nine hours of related courses, or consent of instructor). Special research problems dealing with governmental organization and administration in the major nations of the modern world.

**PS 8303. Seminar in International Relations. (3)** (Prerequisites: PS 1313 and nine hours of related courses, or consent of instructor). Special research dealing with major international problems.

**PS 8413. Seminar in Political Theory. (3)** (Prerequisites: PS 2403 and nine hours of related courses, or consent of instructor). Three hours lecture. Seminar on selected aspects of political theory from the ancient to the modern period.

**PS 8513. Readings in Local Government and Politics. (3)** (Prerequisite: Consent of instructor). Reading assigned material in local government and politics and making reports thereon under the supervision of a member of the graduate faculty.

**PS 8523. Readings in State Government and Politics. (3)** (Prerequisite: Consent of instructor). Reading assigned material in state government and politics and making reports thereon under the supervision of a member of the graduate faculty.

**PS 8533. Readings in National Government and Politics. (3)** (Prerequisite: Consent of instructor). Reading assigned material in an appropriate subfield of national government and making reports thereon under the supervision of a member of the graduate faculty.

**PS 8543. Readings in Comparative Government and Politics. (3)** (Prerequisite: Consent of instructor). Reading assigned material in an appropriate subfield of comparative government and making reports thereon under the supervision of a member of the graduate faculty.

**PS 8553. Readings in International Relations. (3)** (Prerequisite: Consent of instructor). Reading assigned material in an appropriate subfield of international relations and making reports thereon under the supervision of a member of the graduate faculty.

**PS 8803. Research Methods for Public Affairs. (3)** Stress on research designs and methods, survey research and other techniques and measuring data. focus on applied approaches for mathematically analyzing governmental data. (Same as PPA 8803).

**PS 8813. Quantitative Methods for Public Affairs. (3)** (Prerequisite: PS 8803 or PPA 8803). Detailed consideration of selected quantitative analytic models and their application to public sector management and policy problems. (Same as PPA 8813).

**PS 8903. Public Policy. (3)** Nature, determinants, and effects of public goods and services; policy formulation and implementation; seminar emphasizes contemporary issues such as strategic planning, leadership, and managerial control. (Same as PPA 8903).

**PS 8990. Special Topics in Political Science. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PS 9103. American Political Institutions. (3)** (Prerequisite: consent of instructor). Three hours lecture. Seminar addressing theoretical and empirical issues pertaining to the dynamics of American political institutions. (Same as PPA 9103)

**PS 9413. Normative Analysis of American Public Policy. (3)** Three hours lecture. Seminar exploring issues in American politics and public policy from a normative perspective. (Same as PPA 9413)

**PS 9893. American Political Behavior. (3)** (Prerequisite: PPA 9803 and consent of instructor). Three hours lecture. Seminar in American political behavior including public opinion, socialization, participation, and voting behavior. (Same as PPA 9893).

## Department of PLANT and SOIL SCIENCES

Offices: 117 Dorman Hall

Professors Byrd, Creech, Goatley, Jenkins\*, Kingery, Matta, McCarty\*, Nagel, Reichert, Reynolds,

Rowe\*, Shaw, Tatum, Triplett, Varco, and Williams;

Associate Professors Baldwin, Cox, DelPrince, Harness, Lang, Reddy and Wallace;

Assistant Professors Massey, Meints, Rankins and Stewart;

Instructor McDougald

**PSS 1313. Plant Science. (3)** Two hours lectures. Two hours laboratory. Scientific principles as the basis for practice in producing, handling, processing, marketing, and utilizing agronomic and horticultural plants.

**PS 1393. Honors: Plant Science. (3)** (Prerequisite: Open through invitation only). Honors section of PSS 1313.

**PSS 2343. Floral Design. (3)** Two hours lecture. Two hours studio. The history and appreciation of floral art through exploration of design principles, plant materials, and compositional floral forms.

**PSS 2351. Techniques in Flowershop Management. (1)** (Prerequisite: PSS 2343. Floral Design). Two hours laboratory. Demonstrations and practice of fundamentals which are essential in the operation of a retail flower shop.

**PSS 2423. Plant Materials I. (3)** Six hours laboratory. Characteristics, identification and landscape uses of ornamental trees, shrubs, vines, flowers and grasses adapted to Southern conditions.

**PSS 2990. Special Topics in Plant and Soil Sciences. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PSS 3023. Retail Floristry Operation and Management. (3)** (Prerequisites: ACC 2023, MGT 3113, and MKT 3013). Three hours lecture. To identify and understand the basic principles of retail floristry management and the operation of a florist shop.

**PSS 3043. Fruit Science. (3)** Three hours lecture. Principles and practices involved in the production of deciduous trees and small fruits. Fall semester, odd years.

**PSS 3133. Introductory Weed Science. (3)** (Prerequisites: BIO 1203, CH 1213 or CH 1053). Three hours lecture. Managing weeds; basic weed biology; methods of controlling weeds, introductory herbicide technology, weed control systems, and the fate of herbicides in the environment.

**PSS 3301. Soils Laboratory. (1)** (Prerequisite: Prior credit for/or current enrollment in PSS 3303.) Two hours laboratory. Fall and Spring semesters. General treatment of selected phases of the subject matter.

**PSS 3303. Soils. (3)** (Prerequisite: One semester (preferably two) of inorganic chemistry, CH 1043.) Three hours lecture. Fall and Spring semester. General treatment of all phases of the subject including lime and fertilizers.

**PSS 3313. Interior Planting Design and Maintenance. (3)** Two hours lecture, two hours laboratory. Identification of plant materials for interior planting and principles of design, installation and maintenance, preparation of cost estimates and maintenance contracts for interior plantings.

**PSS 3343. Advanced Floral Design I. (3)** (Prerequisite: PSS 2343). One hour lecture. Four hours laboratory. Application of design theory and principles to specific operations encountered in retail floristry.

**PSS 3411. Turf Seminar I. (1)** One hour lecture. Class discussions with invited turf industry representatives. Topics will include Turf industry overview, turf career opportunities, writing a resume, and job interviews.

**PSS 3413. Floristry Internship. (3)** (Prerequisites: PSS 2343, PSS 2351 and consent of Retail Floristry Management faculty). Individual work experience in a floral industry enterprise with an approved employer under faculty supervision.

**PSS 3421. Turf Seminar II. (1)** One hour lecture. Review of turfgrass literature and presentations of scientific articles.

**PSS 3423. Agronomy Internship. (3)** (Prerequisites: Junior standing and consent of Agronomy Faculty). Individual work experience in an agronomic or environmental organization with an approved employer under faculty supervision. This course may be repeated under approved conditions.

**PSS 3433. Horticulture Internship. (3)** (Prerequisite: Consent of the Floriculture and Ornamental Horticulture faculty). Individual work experience in a horticulture or allied industry organization with an approved employer under faculty supervision. This course maybe repeated under approved conditions.

**PSS 3443. Advanced Floral Design II. (3)** One hour lecture. Four hours laboratory. Application of design theory and principles to non-perishable, dried, and preserved floral products.

**PSS 3473. Plant Materials II. (3)** (Prerequisite: PSS 2423). Six hours laboratory. Continuation of PSS 2423.

**PSS 3511. Seminar. (1)** (Prerequisite: Nine credits in horticulture). One hour lecture. Review of horticultural literature, and presentation and discussion of scientific articles.

**PSS 3923. Plant Propagation. (3)** (Prerequisite: BIO 1203). Two hours lecture. Two hours laboratory. Basic principles in the propagation of horticultural plants. Spring semester.

**PSS 4000. Directed Individual Study.** Hours and credits to be arranged.

**PSS 4103/6103. Forage and Pasture Crops. (3)** Two hours lecture. Two hours laboratory. Fall semester. Origin, uses, and ecology of forage plants, establishment, nutritive value, use, yield and maintenance of forage plants as related to morphology, physiology and pasture management.

**PSS 4123/6123. Grain Crops. (3)** (Prerequisite: Junior standing). Two hours lecture. Two hours laboratory. Spring semester, odd-numbered years. Corn, small grain, practice in commercial grading given in laboratory.

**PSS 4133/6133. Fiber and Oilseed Crops. (3)** (Prerequisite: Junior standing). Three hours lecture. Spring semester. Production and utilization of fiber and oilseed crops. Emphasis on cotton and soybean production in Mississippi.

ization of fiber and oilseed crops. Emphasis on cotton and soybean production in Mississippi.

**PSS 4143/6143. Advanced Fruit Sciences. (3)** (Prerequisite: PSS 3043 or equivalent). Three hours lecture. Three hours laboratory. A study of the latest advances in pomology and interpretation of current research findings and their application to modern fruit growing. Spring semester, odd years.

**PSS 4213/6213. Seed Analysis and Lab Practices. (3)** (Prerequisite: BIO 4203/6203). One hour lecture. Four hours laboratory. Fall semester (even years). Crop and weed and lab practice in seed analysis; special techniques in seed testing; seed laws.

**PSS 4223/6223. Seed Production. (3)** (Prerequisite: Junior standing). Two hours lecture. Two hours laboratory. Fall semester (odd years). Principles and practices, special emphasis on production of varietally pure seeds; agronomic factors in harvesting, drying, storage, treating and marketing seed.

**PSS 4233/6233. Seed Conditioning Machinery. (3)** (Same as ABE 4863/6863). Two hours lecture. Two hours laboratory. Introduction to the methods of cleaning and separating seeds. Principles of operation of the various machines used for cleaning, separating, handling, drying and packaging seeds.

**PSS 4243/6243. Seed Technology. (3)** (Prerequisite: Senior standing). One hour lecture. Four hours laboratory. Spring semester (odd years). Seed development and morphology; germination; vigor and other special tests for seed quality; maintenance of seed viability; and seed quality control system.

**PSS 4253/6253. Seed and Grain Conditioning and Storage. (3)** (Prerequisite: Senior standing). Two hours lecture. Two hours laboratory. Fall semester. Physical and biological principles involved in the conditioning and storage of seed and grain with emphasis on systems used, operational procedures, management and economic considerations.

**PSS 4263/6263. Viticulture. (3)** (Prerequisite: PSS 3043). Three hours lecture, field trips. Grapes and muscadines emphasized. Vineyard construction, growth, development, morphology and physiology of grapevines and fruit composition and maturation. Spring semester, even years.

**PSS 4313/6313. Soil Fertility and Fertilizers. (3)** (Prerequisites: PSS 3303 and Junior standing). Three hours lecture. Spring semester. Fundamentals and concepts of soil fertility; sources and responses of crops to plant nutrients; soil fertility evaluation and maintenance through fertilization.

**PSS 4314/6314. Soil Microbiology. (4)** (Prerequisite: BIO 3304). Three hours lecture. Three hours laboratory. Spring semester. Soil microorganisms and their importance in ammonification, nitrification, and other biological processes. (Same as BIO 4324)

**PSS 4323/6323. Soil Classification. (3)** (Prerequisite: PSS 3303). Three hours lecture. Fall semester, odd-numbered years. Origin, development, and classification of soils including identification and field mapping.

**PSS 4333/6333. Soil Conservation and Land Use. (3)** (Prerequisite: PSS 3303). Two hours lecture. Three hours laboratory. Fall semester. Soil identification, topographic relationships and soil-water resources; their characteristics, quality, suitability, and management; conservation practices; using soil maps to determine land use

**PSS 4343/6343. Greenhouse Management. (3)** (Prerequisites: BIO 1203 and PSS 3303 and PSS 3301). Two hours lecture. Two hours laboratory. A detailed review and explanation of principles and practice of greenhouse operation and management. Fall semester.

**PSS 4353/6353. Arboriculture and Landscape Maintenance. (3)** Two hours lecture. Two hours laboratory. Care of ornamental trees and shrubs, including pruning, bracing, surgery, transplanting, and fertilization.

**PSS 4363/6363. Nursery Management. (3)** (Prerequisites: PSS 3923, PSS 2423, and PSS 3473). Two hours lecture. Two hours laboratory. The production and handling of ornamental nursery stock. Spring semester, even-numbered years.

**PSS 4373/6373. Geospatial Agronomic Management. (3)** (Prerequisites: PSS 3303 and PSS 3133). Two hours lecture. Three hours laboratory. This class will utilize the basic tools of geographical information systems and geographical positioning systems technologies to analyze agronomic case studies.

**PSS 4411-4441/6411-6441. Remote Sensing Seminar. (1)** (Prerequisite: Junior standing). One hour lecture. Lectures by remote sensing experts from industry, academia, and governmental agencies on next-generation systems, applications, and economic and societal impact of remote sensing.

**PSS 4414/6414. Turf Management. (4)** (Prerequisite: Junior Standing). Three hours lecture. Two hours laboratory. Comprehensive study of turfgrasses, their establishment, and the varied management strategies employed for golf and sports turf, home lawns and commercial turf, and sod production.

**PSS 4423/6423. Golf Course Operations. (3)** (Prerequisite: PSS 4414/6414). Two hours lecture. Two hours laboratory. Fall semester. Scheduling maintenance practices, golf course construction and renovation with emphasis on operation and care of specialized turf equipment.

**PSS 4433/6433. Plant Biotechnology for Teachers. (3)** (Prerequisite: Secondary Science Education Major or consent of Instructor). Three hours lecture. An introduction to various aspects of plant biotechnology including tissue culture, genetics and molecular biology with practical laboratory application.

**PSS 4443/6443. Athletic Field Management. (3)** (Prerequisite: PSS 3303, PSS 4414, or consent of instructor). Two hours lecture. Two hours laboratory. A comprehensive study of athletic fields, including construction, maintenance, renovation and management. Emphasis will be placed on interactions between soil properties and sports turf performance.

**PSS 4444/6444. Plant Tissue Culture. (4)** (Prerequisite: BIO 4214 and CH 1053 or equivalent). Three hours lecture. Three hours laboratory. A comprehensive study of plant cell, tissue and organ culture with emphasis on practical applications of tissue culture in various areas of plant science.

**PSS 4453/6453. Vegetable Production. (3)** (Prerequisite: PSS 3303 and PSS 3301 or BIO 4204). Two hours lecture. Two hours laboratory. Principles and practices of commercial vegetable production.

**PSS 4483/6483. Intro to Remote Sensing Technologies. (3)** (Prerequisite: Senior or graduate standing, or consent of instructor). Three hours lecture. Electromagnetic interactions, passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR, Lidar, digital image processing, natural resource applications (Same as ECE 4423/6423 and ABE 4483/6483).

**PSS 4503/6503. Plant Breeding. (3)** (Prerequisite: PO 3103). Two hours lecture. Two hours laboratory. Application of genetic principles to the improvement of economic crop plants; history, methods and procedures of plant breeding.

**PSS 4583/6583. Food Preservation Technology. (3)** Two hours lecture. Two hours laboratory. Basics and unit operations on thermal processing, refrigeration/freezing, concentration/dehydration, fermentation, preservatives, baking, low thermal processes, modified atmospheres, wastewater, and shelf-life will be discussed. (Same as FST 4583/6583).

**PSS 4603/6603. Soil Chemistry. (3)** (Prerequisite: PSS 3303). Two hours lecture. Three hours laboratory. Fall semester, even-numbered years. Introduction to the basic chemistry of soils, including: mineral weathering/formation, ion exchange; adsorption, oxidation/reduction, acidity, salinity/alkalinity, and soil reactions of environmental importance.

**PSS 4613/6613. Floriculture Crop Programming. (3)** (Prerequisite: PSS 4343/6343). Two hours lecture. Two hours laboratory. A detailed study of the techniques involved in the production of the major commercial flower crops. Spring semester, odd-numbered years.

**PSS 4623/6623. Physical Edaphology. (3)** (Prerequisites: PSS 3303, BIO 4214, MA 1323, PH 1113, PH 1123, or equivalent). Two hours lecture. Three hours laboratory. Fall semester, even-numbered years. Brief study of soil physical properties and soil physical management with major emphasis on the relation of physical properties of soil to plant growth.

**PSS 4633/6633. Weed Biology and Ecology. (3)** (Prerequisites: BIO 1203, PSS 3133. Junior standing or consent of instructor). Two hours lecture. Two hours laboratory. Weed identification and population responses to agricultural production systems. Spring semester.

**PSS 4643/6643. Good Laboratory Practices. (3)** (Prerequisite: Junior standing). Three hours lecture. Fall semester. Conduct of research under good laboratory practices in a regulated environment.

**PSS 4712. Agronomic Management Problems. (2)** (Prerequisite: Senior standing. Agronomy majors only). One hour lecture. Two hours laboratory and discussion. Fall semester. The analysis of agronomic management systems, present and future. Problems involving management of physical, biological, environmental, and economic factors of efficient production.

**PSS 4813/6813. Herbicide Technology. (3)** (Prerequisites: PSS 3133 and Junior standing). Two hours lecture. Three hours laboratory. Classification and use of herbicides. A detailed look at herbicide application-field use and factors influencing herbicide activity. Spring semester. Credit may not be given for this course and PSS 4823/6823.

**PSS 4823/6823. Turfgrass Weed Management. (3)** (Prerequisite: PSS 3133 and Junior standing). Two hours lecture. Three hours laboratory. Classification and use of herbicides with emphasis on herbicides used in turfgrasses. Credit may not be given for this course and PSS 4813/6813.

**PSS 4990/6990. Special Topics in PSS. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PSS 7000. Directed Individual Study.** Hours and credits to be arranged.

**PSS 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**PSS 8103. Pasture Development. (3)** Two hours lecture. Two hours laboratory. Fall semester, even-numbered years. Utilization systems for forage crops in Mississippi; morphology and physiology of grasses and legumes; emphasis on identification through floral characteristics; interpretation of forage research.

**PSS 8123. Crop Ecology. (3)** (Prerequisite: BIO 4213/6213 or consent of instructor). Three hours lecture. Spring semester, even-numbered-years. The geographical distribution, use, and adaptation of field crops as influenced by soil, climate, and other environmental factors.

**PSS 8163. Environmental Plant Physiology. (3)** Three hours lecture. Spring semester, even-numbered years. The influences of physical factors of the environment on growth and development of crop plants.

**PSS 8203. Seed Physiology. (3)** (Prerequisite: PSS 4243/6243 or approval of instructor). Three hours lecture. Spring semester (even years). Physiology of seed maturation, germination, dormancy, and deterioration; relation of seed quality to growth and development of plants.

**PSS 8303. Soil Genesis and Classification. (3)** (Prerequisite: PSS 4323). Two hours lecture. Three hours laboratory. Fall semester, even-numbered years. Advanced study of the development, classification and distribution of soils; special emphasis on the morphology of soils of the great soil groups.

**PSS 8313. Plant Processes and Crop Yield of Horticulture Plants. (3)** (Prerequisite: BIO 6203 or equivalent). Three hours lecture. A study of the genetic variations in physiological processes in relation to crop yield and adaptation.

**PSS 8314. Clay Mineralogy. (4)** (Prerequisite: Approval of instructor). Two hours lecture. Four hours laboratory. Spring semester, even-numbered years. Crystal structure and reaction mechanisms of clay minerals weathering. X-ray diffraction, thermal, and chemical studies of clay minerals.

**PSS 8323. Advanced Soil Chemistry. (3)** (Prerequisite: CH 4413 and preferably CH 4423 or approval of instructor). Three hours lecture. Spring semester, odd-numbered years. Application of the fundamental laws of colloid chemistry to inorganic and organic soil colloids with special emphasis on chemical equilibria, chelation, cation exchange. Gouy-Chapman theory and electrokinetics.

**PSS 8333. Advanced Soil Fertility. (3)** (Prerequisite: Graduate standing). Two hours lecture. Three hours laboratory. Fall semester, even-numbered years. Advanced course in soil fertility; special emphasis on all soil conditions affecting plant growth. Experimental techniques in plant nutrition and in soil fertility will be utilized.

**PSS 8343. Soil Physics. (3)** (Prerequisite: PSS 4613/6613 or consent of instructor). Three hours lecture. Fall semester, odd-numbered years. The fundamental principles and laws which govern the soil as a physical system with special emphasis on transport phenomena and the physical characteristics of soils.

**PSS 8511. Seminar. (1)** (Prerequisite: Graduate standing). One hour lecture. Review of scientific literature and presentation of scientific papers.

**PSS 8513. Advanced Plant Breeding. (3)** (Prerequisite: PSS 4503/6503 or equivalent). Three hours lecture. Fall semester, even-numbered years. An intensive review of methods of plant improvement and the application of these methods to modern plant breeding. (Same as GNS 8113.)

**PSS 8523. Nutrition of Horticultural Plants. (3)** (Prerequisites: PSS 3303 and PSS 3301 and BIO 4214/6214 or equivalent). Three hours lecture. Principles of mineral nutrition applied to diverse horticultural plants.

**PSS 8533. Genetic Variation. (3)** (Prerequisite: PO 3101 and PSS 4503/6503). Three hours lecture. Spring semester, even-numbered years. Sources of genetic variation and gene conservation in plants. (Same as GNS 8533.)

**PSS 8543. Biometrical Genetics in Plant Breeding. (3)** (Prerequisites: PSS 4503/6503 and ST 8114). Three hours lecture. Spring semester, odd-numbered years. Analysis and interpretation of experiments for estimation of hereditary parameters. Emphasis on mating designs, heritability, and genotype x environment interactions in plant breeding. (Same as GNS 8143.)

**PSS 8553. Plant Growth and Development. (3)** (Prerequisites: BIO 4214/6214 and CH 2503). Three hours lecture. Auxins, gibberellins, and other growth regulating substances, photoperiodism, thermoperiodicity. Fall semester, odd-numbered years.

**PSS 8554. Plant Genetic Engineering. (4)** (Prerequisite: PSS 6444 or PSS 6443 and BCH 6713). Two hours lecture. Four hours laboratory. A study of molecular techniques, product development, applica-



tions and implications of plant improvement through genetic engineering.

**PSS 8563. Post-Harvest Physiology of Horticultural Plants. (3)** (Prerequisites: Organic Chemistry and BIO 4214/6214 or equivalent). Three hours lecture. The nature, evaluation, and control of chemical and physiological changes that occur after harvest of horticultural products.

**PSS 8573. Morphology of Horticultural Plants. (3)** (Prerequisite: BIO 4204/6204). One hour lecture. Four hours laboratory. Development of the floral and vegetative organs of horticultural plants. Fall semester, even-numbered years.

**PSS 8613. Methods of Horticultural Research. (3)** (Prerequisite: Graduate standing). One hour lecture. Four hours laboratory. Techniques and instrumentation in plant research.

**PSS 8634. Environmental Fate of Herbicides. (4)** (Prerequisites: CH 4513/6513, PSS 4813/6813). Three hours lecture. Three hours laboratory. Fate of herbicides, including drift volatility, adsorption/desorption, leaching, runoff, microbial, chemical, and photolytic degradation, and plant metabolism, environmental factors that influence these processes.

**PSS 8645. Field Applications of Weed Sciences Principles I. (5)** (Prerequisite: PSS 6633 and PSS 6813 or consent of instructor). Three hours lecture. Four hours laboratory. Field weed identification; herbicide symptomatology; problem solving in cotton, soybean, and vegetables; application equipment calibration.

**PSS 8655. Field Applications of Weed Science Principles II. (5)** (Prerequisite: PSS 8646 or consent of instructor). Three hours lecture. Four hours laboratory. Field weed identification; herbicide symptomatology; problem solving in turf, field corn, rice, sorghum and pastures; application equipment calibration.

**PSS 8701-8791. Current Topics in Weed Science. (1)** (Prerequisites: Graduate standing, PSS 4813/6813 or consent of instructor). Lecture, discussion and readings in selected areas of current interest in weed science. Maximum total credits in graduate program allowed, 4 hours-M.S.; 6 hours-Ph.D.

**PSS 8724. Herbicide Physiology and Biochemistry. (4)** (Prerequisites: PSS 4813/6813, BIO 4214/6214 and CH 4513/6513 or consent of instructor). Three hours lecture. Three hours laboratory. Herbicide, plant growth regulator and allelochemical chemistry, mode of action, and effects on plants and plant constituents: fate/persistence of herbicides in the environment. Fall semester, odd-years.

**PSS 8811-8831. Seminar. (1)** (Prerequisite: Graduate standing). Review of literature on assigned topics; preparation of formal papers and presentation of them at staff seminars.

**PSS 8990. Special Topics in PSS. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PSS 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## Department of PSYCHOLOGY

Office: 110 Magruder Hall

Professors Carskadon, Doane, Giesen, Henley, Klein (Head), Miller, Morse, Spurrison, Thorne and Wells-Parker;  
Associate Professors Adams-Price, Armstrong, Bradshaw, and Fee;  
Assistant Professors Jacquin, J. McCarley, N. McCarley, and Stewart

**PSY 1013. General Psychology. (3)** Three hours lecture. The study of human behavior, heredity and growth; motivation: feeling and emotion; frustration; conflict; learning; language; thinking, attention; sensation; perception; intelligence; aptitudes; social influences.

**PSY 1093. Honors General Psychology. (3)** (Prerequisite: Open through invitation only). Three hours lecture. Intensified study of human behavior, heredity, motivation, emotion, frustration, conflict, learning, sensation, perception, intelligence, experimental methodology, and social interaction.

**PSY 2153. Psychology of Adjustment. (3)** (Prerequisite: PSY 1013). Three hours lecture. Dynamic concepts of healthy personality; optimum utilization of personal resources throughout the life span; individual and collective behavior in the changing social context; prevention of mental illness.

**PSY 2990. Special Topics in Psychology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PSY 3003. Environmental Psychology. (3)** (Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Study of the social and physical environmental factors and their effects on behavior. Theory, research, and application will be examined.

**PSY 3023. Applied Psychology. (3)** (Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Principles, techniques, and results of psychology applied to a wide range of problems in daily life and work.

**PSY 3073. Psychology of Interpersonal Relations. (3)** Three hours lecture. (Prerequisite: **Junior standing**). Examination of psychological principles, theories and research which apply to various types of human interaction.

**PSY 3103. Introductory Psychological Statistics. (3)** (Prerequisite: PSY 1013, MA 1313). Three hours lecture. Techniques and practices in statistical analyses used in psychological experimentation and evaluation.

**PSY 3203. Psychology of Gender Differences. (3)** (Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Survey of the biological, physiological, and sociocultural factors which influence the psychological differentiation of the genders.

**PSY 3213. Psychology of Abnormal Behavior. (3)** (Prerequisite: PSY 1013). Three hours lecture. Behavioral patterns and causes of deviant behavior from childhood through later maturity. Etiology and symptomatology are emphasized.

**PSY 3313. Experimental Psychology. (3)** (Prerequisite: PSY 3103). Three hours lecture. Emphasis on the methods and techniques of research design. Experiments in perception, learning, animal behavior, memory and thinking. Laboratory hours to be arranged.

**PSY 3343. Psychology of Learning. (3)** (Prerequisite: PSY 1013). Three hours lecture. Survey of a variety of learning situations. Consider-

ation of the variables and conditions which influence the learning process.

**PSY 3353. Motivation. (3)** (Prerequisite: PSY 1013). Three hours lecture. Study of the role of motivation in behavior theory; biological and psychological bases; historical and contemporary views.

**PSY 3363. Behavior Modification. (3)** (Prerequisite: PSY 1013). Three hours lecture. Intensive examination of the principles and procedures used to modify the behavior of humans in contemporary situations.

**PSY 3413. Human Sexual Behavior. (3)** (Prerequisite: PSY 1013 or consent of instructor). Three hours lecture. Varieties of sexual behavior. Research methods and findings; typical behaviors; homosexuality; sexual disorders; sexual assault and sexual victims; treatments; pornography and prostitution; sexual risk perception.

**PSY 3503. Health Psychology. (3)** (Prerequisites: PSY 1013 or PSY 1093). Three hours lecture. Overview of research on psychophysiological disorders and related interventions. Emphasis is placed on chronic physical disorders and their relationship to psychological functioning.

**PSY 3623. Social Psychology. (3)** (Prerequisites: PSY 1013 or consent of instructor). Three hours lecture. Human behavior as a product of social interaction; social perception; social norms and roles; group processes, interrelationship of personality, culture, and group.

**PSY 3713. Cognitive Psychology. (3)** Three hours lecture. Introduction to the basic areas of cognitive psychology, including perception, attention, memory, reasoning, and language.

**PSY 3803. Introduction to Developmental Psychology. (3)** (Prerequisite: PSY 1013). Three hours lecture. A survey and evaluation of current theory and research concerning development from infancy to young adulthood. Cognitive, social, and emotional development is emphasized.

**PSY 4000. Directed Individual Study.** Hours and credits to be arranged.

**PSY 4103/6103. Psychometrics. (3)** (Prerequisite: PSY 3103). Three hours lecture. Theory, problems, skills, and techniques of psychological measurement. Emphasis on construction, evaluation, item analysis, reliability and validity techniques in the improvement of measures of human behavior. Laboratory hours to be arranged.

**PSY 4113/6113. Human Psychophysiology and Biofeedback Techniques. (3)** (Prerequisites: PSY 3103 or equivalent, and consent of instructor). A critical review of research and theory related to human psychophysiology and measurement. In-depth overview of biofeedback research, techniques, and applications.

**PSY 4123/6123. Quantitative Techniques In Psychology Using Computers. (3)** (Prerequisites: PSY 3103 or equivalent, and consent of instructor). A survey of major quantitative techniques in psychology and related behavioral sciences made possible by modern computers.

**PSY 4203. Theories of Personality. (3)** (Prerequisite: PSY 1013). Three hours lecture. Current theories of personality. Structure, development, dynamics, acculturation processes. Methods, techniques, and research in personality assessment.

**PSY 4223/6223. Drug Use and Abuse. (3)** (Prerequisite: PSY 1013). Three hours lecture. Study of basic principles of drug use and abuse. Includes an introduction to psychopharmacology and basic treatment strategies.

**PSY 4323. History of Psychology. (3)** (Prerequisite: PSY 1013 and junior standing). Three hours lecture. A discussion of people, events, and theoretical and empirical contributions relevant to development of psychology.

**PSY 4333. Introduction to Clinical Psychology. (3)** (Prerequisites: PSY 3213 and PSY 3313 or consent of instructor). Three hours lecture. Survey of assessment techniques, intervention procedures, professional issues of contemporary clinical psychology. Emphasis placed on the Boulder (scientist-practitioner) model.

**PSY 4343. Clinical Child Psychology. (3)** (Prerequisites: PSY 3213; PSY 3313 or PSY 3803). Three hours lecture. Overview of childhood disorders and related interventions.

**PSY 4403/6403. Physiological Psychology. (3)** (Prerequisite: PSY 1013). Three hours lecture. Nervous, muscular, sensory, and glandular systems of the body as they affect behavior and adjustment. Emphasis upon the role of the central and peripheral nervous systems.

**PSY 4423/6423. Sensation and Perception. (3)** (Prerequisite: PSY 1013, PSY 4403). Three hours lecture. Survey of basic sensory mechanisms and perceptual phenomena. Sensory mechanisms reviewed will include vision, audition, olfaction, gustation, and touch with emphasis on vision and audition.

**PSY 4523/6523. Industrial Psychology. (3)** (Prerequisite: PSY 1013). Three hours lecture. Applications of psychological principles and methods to industry emphasizing employee selection, placement, merit rating, training, human relations, and measurement and improvement of employee morale.

**PSY 4633/6633. Social Intervention. (3)** (Prerequisite: PSY 3623 or consent of instructor). Three hours lecture. Examination of how people perceive, categorize, and reason about other people and themselves.

**PSY 4643/6643. Social Cognition. (3)** (Prerequisite: PSY 3623 or consent of instructor). Three hours lecture. Examination of how people perceive, categorize and reason about other people and themselves.

**PSY 4653/6653. Cognitive Science. (3)** (Prerequisite: CS 4633/6633 or PSY 4713 or PHI 4143/6143 or AN 4623/6623 or EN 4403/6403). Three hours lecture. The nature of human cognition from an interdisciplinary perspective, primarily utilizing a computational model, including insights from philosophy, psychology, linguistics, artificial intelligence, anthropology, and neuroscience. (Same as CS 4653/6653).

**PSY 4713/6713. Language and Thought. (3)** Three hours lecture. Review of current research and theories. Symbolic process, concept formation, problem solving and language development.

**PSY 4723/6723. Psycholinguistics. (3)** (Prerequisite: PSY 4713/6713 or consent of instructor). Three hours lecture. Language production and comprehension, conversational interaction, language acquisition.

**PSY 4733/6733. Memory. (3)** Three hours lecture. (Prerequisite: PSY 1013). Introduction to theoretical and practical aspects of memory. Discussion of laboratory memory, computer models of memory, memory self-concepts, everyday memory, and clinical memory problems.

**PSY 4726. Internship in Psychology I. (6)** (Prerequisite: Consent of instructor). A minimum of twenty hours per week of professional experience in a human service or other field setting. One hour of seminar and group supervision.

**PSY 4736. Internship in Psychology II. (6)** (Prerequisite: Consent of instructor). A minimum of twenty hours per week of professional experience in a human service or other field setting. One hour of seminar and group supervision.

**PSY 4743/6743. Psychology of Human-Computer Interaction. (3)** (Prerequisites: PSY 3713 or CS 4663/6663 or IE 4113/6113 or consent of the instructor). Two hours lecture. Two hours laboratory. Exploration of psychological factors that interact with computer interface usability. Interface design techniques and usability evaluation methods are emphasized. (Same as CS 4673/6673 and IE 4123/6123).

**PSY 4903/6903. Seminar in Psychology. (3)** (Prerequisite: PSY 1013). In-depth examination of particular topics of current interest to faculty and students. Critical evaluation of current research.

**PSY 4983/6983. Psychology of Aging. (3)** (Prerequisite: PSY 1013). Three hours lecture. A description and analysis of the development and changes occurring in individuals from early adulthood through late life.

**PSY 4990/6990. Special Topics in Psychology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer de-

veloping subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**PSY 7000. Directed Individual Study.** Hours and credits to be arranged.

**PSY 8000. Thesis Research and Thesis.** Hours and credits to be arranged.

**PSY 8214. Quantitative Methods in Psychology II. (4)** (Prerequisite: PSY 3103). Three hours lecture. Three hours laboratory. Advanced experimental design and methods with emphasis on analysis of variance.

**PSY 8223. Systems and Theories of Psychology. (3)** (Prerequisite: PSY 4323/6323). Three hours lecture. Study of the basic systems and theories relevant to current psychology.

**PSY 8313. Developmental Psychology. (3)** (Prerequisite: PSY 3803). Three hours lecture. Human growth processes and related developmental tasks in areas such as creative ability, language, social competence, and bodily fitness.

**PSY 8323. Psychopathology. (3)** (Prerequisites: PSY 3213). In-depth coverage of contemporary systems of psychiatric diagnosis, and biological, psychological, and social theories of the etiology of psychological disorders.

**PSY 8333. Systems of Psychotherapy. (3)** (Prerequisite: Consent of instructor). Three hours lecture. A comparative introduction to the theories, techniques, and outcomes of major approaches to psychotherapy.

**PSY 8343. Clinical Psychology. (3)** (Prerequisite: Consent of the instructor). Three hours lecture. Survey of diagnostic and therapeutic techniques and goals. Emphasis on current approaches to the classical problems of diagnosis and treatment.

**PSY 8353. Intelligence Testing. (3)** (Prerequisite: Consent of the instructor). One hour lecture, two hours practicum. Administration, scoring and interpretation of the standard psychometric instruments used in evaluating individual intellectual functioning.

**PSY 8363. Personality Appraisal. (3)** (Prerequisite: PSY 8323). One hour lecture. Two hours practicum. Administration, scoring and interpretation using standard self-report and projective methods of individual personality assessment. Current research is also explored.

**PSY 8373. Child Psychopathology and Treatment of Childhood Disorders. (3)** (Prerequisite: PSY 3213). Three hours lecture. Research on the nature, assessment and treatment of disorders of childhood/adolescence.

**PSY 8383. Behavior Therapy. (3)** (Prerequisite: Consent of instructor). Three hours lecture. A survey of contemporary literature relating to the theory, techniques, and outcomes of behavior therapy. Emphases placed on systematic desensitization and operant conditioning techniques.

**PSY 8403, 8413. Seminar. (3)** (Prerequisite: Consent of department head required of all nonpsychology students). Exposition of current research and theoretical positions in selected areas of psychology.

**PSY 8454, 8464. Professional Practicum. (4)** (Prerequisite: Departmental consent). A minimum of 300 hours per semester of supervised professional psychological experience in an appropriate setting.

**PSY 8503. Learning. (3)** (Prerequisite: PSY 3343). Three hours lecture. Current theories and learning models; methods and results of experimental studies of human and animal learning.

**PSY 8513. Psychological Research. (3)** (Prerequisite: PSY 3313). Three hours lecture. Practicum in the techniques of planning and execution of various areas of psychological research.

**PSY 8533. Introduction to Clinical Practicum in Psychology. (3)** (Prerequisite: Consent of instructor). One hour lecture. Two hours practicum. Intensive introduction to clinical interviewing, as well as the research literature in clinical psychology.

**PSY 8573. Psychopharmacology. (3)** (Prerequisites: PSY 4403 and PSY 8323). Three hours lecture. Overview of research on pharmacological and combined treatments for psychological disorders. Emphasis is placed on psychological disorders in adulthood.

**PSY 8613. Advanced Social Psychology. (3)** (Prerequisite: PSY 3623). Three hours lecture. Examination of research and theories of attraction and liking. Emphasis upon reinforcement theory, gain-loss theory, and dissonance theory.

**PSY 8703. Personnel Psychology. (3)** (Prerequisite: Consent of instructor.) Three hours lecture. Study of theories and methods of psychology as applied to work setting design, personnel management, and organizational behavior with special emphasis on personnel psychology.

**PSY 8713. Issues and Methods in Cognitive Psychology. (3)** (Prerequisite: Graduate Standing). Three hours lecture. Exploration of the theoretical issues and research methods in current Cognitive Psychology.

**PSY 8723. Cognitive Models of Skill. (3)** (Prerequisite: Graduate standing). Three hours lecture. Introduction to cognitive modeling, with a

focus on computational models of skill acquisition and expert skill (Same as CS 8613).

**PSY 8803. Advanced Quantitative Methods for Industrial/Organizational and General Psychology. (3)** (Prerequisites: PSY 8214). Three hours lecture. Study of advanced analytic and multivariate

quantitative methods applied to contemporary problems and research in industrial/organizational and general psychology.

**PSY 8990. Special Topics in Psychology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## RADIO — T.V. — FILM

(See Communication)

## READING EDUCATION

(See Elementary Education)

**RDG 2990. Special Topics in Readings. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses.

**RDG 3113. Foundations of Literacy. (3)** (Prerequisite: Admission to Teacher Education). Three hours lecture. Foundations of literacy learning and teaching; emergent literacy.

**RDG 3213. Teaching of Literacy. (3)** (Prerequisite: RDG 3113). Three hours lecture. Literacy teaching and learning for upper elementary and middle school.

**RDG 3313. Practicum: Diagnosis and Remediation of Reading Disability. (3)** (Prerequisite: RDG 3213). The supervised diagnostic teaching of reading in a public school setting.

**RDG 3513. Developing Reading Strategies in the Secondary School Content Areas. (3)** Basic theories and techniques needed by content area teachers for teaching reading to secondary school students.

**RDG 4113/6113. Teaching Reading in the Middle School. (3)** (Prerequisite: RDG 3113). Three hours lecture. Theory and applied methods, techniques, and analysis of reading strategies for the adolescent learner (ages 10-15) in the middle school.

**RDG 4990/6990. Special Topics in Readings. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses.

**RDG 8153. Psychology of Reading. (3)** Three hours lecture. Analysis of reading patterns; conditions favorable and unfavorable to prog-

ress in reading skill; the readiness concept; problems of levels. Prevention and correction of reading handicaps.

**RDG 8413. Reading in the Public Schools. (3)** Three hours lecture. Materials and methods employed in individual and group procedures for the teaching of reading in public schools.

**RDG 8453. Research in Reading. (3)** Three hours lecture. The function of research in the development of reading programs; contribution of research to reading.

**RDG 8573. Diagnosis of Reading Problems. (3)** The selection, utilization and interpretation of instruments used to diagnose disability and outline remedial procedures.

**RDG 8593. Issues and Innovations in Reading. (3)** Issues and innovations related to trends, methodology, and materials in the teaching of reading.

**RDG 8653. Teaching Reading in the Secondary Schools. (3)** Three hours lecture. A study of reading problems of junior- and senior-high-school students. A study of machines, materials, and techniques used in developmental reading for high school youth.

**RDG 8713. Practicum: Remedial Reading. (3)** Three hours lecture. Methods of identifying and diagnosing deficiencies in children's reading skills; remedial measures, improvement and evaluation.

**RDG 8990. Special Topics in Readings. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses.

## RELIGION

(For departmental information, see PHILOSOPHY and RELIGION.)

**REL 1103. Introduction to Religion. (3)** Three hours lecture. Religion seen as a human search for meaning in life or response to the holy. Studied through basic structures and modes of expression.

**REL 1213. Introduction to the Old Testament. (3)** Three hours lecture. A survey of Old Testament literature with attention to archaeological findings and the cultural setting.

**REL 1223. Introduction to the New Testament. (3)** Three hours lecture. A survey of New Testament literature with attention to archaeological findings and the cultural setting.

**REL 2233. Introduction to Old Testament Archaeology. (3)** Three hours lecture. A survey of the Old Testament in the light of archaeological research. The approach is chronological-historical-archaeological.

**REL 2990. Special Topics in Religion. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**REL 3123. Philosophy of Religion. (3)** (Prerequisite: Three hours of philosophy). Three hours lecture. A critical inquiry into the rational justification of central theistic beliefs, with emphasis on the traditional philosophical arguments for and against the existence of God. (Same as PHI 3123).

**REL 3203. The Prophets of Ancient Israel. (3)** Three hours lecture, seminar. A study of the message and function of prophetic traditions within ancient Israel and in contemporary ancient Near Eastern societies.

**REL 3213. World Religions: Part I. (3)** Three hours lecture. A history and comparative study of beliefs and the cultural impact of the great religions of the East.

**REL 3223. World Religions: Part II. (3)** Three hours lecture. A history and comparative study of beliefs and the cultural impact of the great theistic religions of the West.

**REL 3333. Society and Religion. (3)** Three hours lecture. Religion as an institution. Examines the social origins of religion and its functions, both positive and negative, in social movements, social control and politics. (Same as SO 3333).

**REL 3453. Hinduism & Buddhism. (3)** Three hours lecture. Introduction to and critical-historical survey of significant texts, doctrines, themes, and thinkers in the main indigenous Indian religion traditions.

**REL 3540. Archaeological Travel and Participation Program. (1-6)** Participation in excavations in the Near East and related lecture program. (Same as AN 3540).

**REL 3553. Near Eastern Archaeology. (3)** Three hours lecture. Introduction to the contributions made by archaeological research to ancient Near Eastern history and prehistory, with special emphasis on the Syro-Palestinian area. (Same as AN 3553).

**REL 3703. The Western Church: Beginning to Reformation. (3)** (Prerequisites: Completion of any 100-level course in history or philosophy and religion). Three hours lecture. An examination of the institutions, doctrines, and spirituality of the Western Church and their impact on Western European politics, society, and culture.

**REL 4000. Directed Individual Study.** Hours and credits to be arranged.

**REL 4123/6123. Scandinavian Mythology. (3)** (Prerequisite: Junior standing or consent of instructor). Three hours lecture. A survey of the myths and legends of Scandinavia in English translation. (Same as FL 4123/6123).

**REL 4143/6143. Classical Mythology. (3)** Three hours lecture. Myths and legends of Greece and Rome and their use in literature and the arts through the ages. (Same as FL 4143/6143).

**REL 4253/6253. Religion in America. (3)** (Prerequisite: HI 1063 or HI 1073). Three hours lecture. Surveys history of religion in America, emphasizing interaction with social and political developments. Same as HI 4253/6253).

**REL 4313/6313. Contemporary Muslim Societies. (3)** (Prerequisites: Any 1000-level sociology or religion course or consent of instructor). Three hours lecture. An examination of Islamic civilization. Muslim sectarianism, social organization and change, the individual and family, education, political and economic orders, Muslims and the world. (Same as SO 4313/6313).

**REL 4403/6403. The Ancient Near East. (3)** (Prerequisite: Completion of any 1000-level history course). Three hours lecture. A study of the origins and development of civilizations in Mesopotamia, Egypt, and

Syria-Palestine from prehistoric times to the end of the Persian period. (Same as HI 4403/6403).

**REL 4990/6990. Special Topics in Religion. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**REL 7000. Directed Individual Study.** Hours and credits to be arranged.

**REL 8990. Special Topics in Religion. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## REAL ESTATE and MORTGAGE FINANCING

Office: 315 McCool Hall

(For departmental information, see FINANCE and ECONOMICS)

**REM 2990. Special Topics in Real Estate & Mortgage Finance. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**REM 3253. Real Property Evaluation (Appraisal). (3)** (Prerequisite: REM 3333 or consent of instructor). Three hours lecture. Methods, evaluation procedures, and techniques of appraising commercial and residential real property under various value-influencing conditions; case problems for appraisal.

**REM 3333. Principles of Real Estate. (3)** (Prerequisite: Junior standing). Three hours lecture. A survey of the activities involved in the acquisition, transfer, operation, and management of real estate.

**REM 3353. Real Estate Finance. (3)** (Prerequisites: REM 3333 or consent of instructor). Three hours lecture. Direct investment in real estate. Sources of funds; risk analysis; typical policies and procedures of investing and financing investment real estate.

**REM 4000. Directed Individual Study. (1-3)** Hours and credits to be arranged with Instructor.

**REM 4253. Mortgage Financing. (3)** (Prerequisites: REM 3333 or FIN 3123 or consent of instructor). Three hours lecture. Indirect investment in real estate. Institutional sources of funds, mortgage market mechanisms, mortgage derivatives and mortgage underwriting.

**REM 4353/6353. Income Property Appraisal. (3)** (Prerequisite: REM 3333 or consent of instructor). Three hours lecture with lab assignments. Real property valuation and evaluation including investment, financing issues, capitalization, and analysis.

**REM 4990/6990. Special Topics in Real Estate & Mortgage Finance. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## Department of SOCIOLOGY, ANTHROPOLOGY, and SOCIAL WORK

Office: 200 Bowen Hall

Professors Emeriti Baird, Bryant, Estes, Marshall, Saunders, Sollie, Swain, Thomas and Wells;

Distinguished Professor: C. Rent

Professors Bluhm, Cosby, Frese, Gill, Howell, Jones, Levin (Head), Rafferty, G. Rent, and Seger;

Associate Professors Bartkowski, Boyd, Crudden, Dunaway, Hogue, Ray, Wood, Woodrow-Lafield, Wood and Xu;

Assistant Professors Blanchard, Burson, Cossman, Kerley, Lee, Loewe, Parisi, and Peacock

Instructor: Lewis

**SO 1003. Introduction to Sociology. (3)** Three hours lecture. The nature and development of culture; social aspects of personality; analysis of community life, population trends, social classes, institutions, processes, and organization; culture change.

**SO 1093. Honors Introduction to Sociology. (3)** (Prerequisite: Open through invitation only). Three hours lecture. The nature and development of culture; social aspects of personality; analysis of community life, population trends, social classes, institutions, processes, and organization; culture change.

**SO 1103. Contemporary Social Problems. (3)** Three hours lecture. Analysis of problems related to: life cycle, sexuality, family disruptions, health, illness, death and dying, addictions, crime, minorities, population, environment, resources and poverty. Suggested solutions.

**SO 1173. Introduction to Gender Studies. (3)** Three hours lecture. An introduction to theoretical concepts in Gender Studies. This course will examine the influence of the women's movement on the academic development of Gender Studies (Same as AN 1173 and WS 1173).

**SO 1203. Marriage and Family. (3)** Three hours lecture. A study of dating, mate selection, marriage and parenthood, with emphasis on the contemporary American family.

**SO 2203. Cultural and Racial Minorities. (3)** (Prerequisite: Three hours in an introductory social science). Three hours lecture. Origins of minority groups and racial attitudes. Biological and cultural concepts of race and minority groups; problems of adjustment in interracial and multiethnic societies. (Same as AN 2203).

**SO 2990. Special Topics in Sociology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**SO 3003. Social Inequality. (3)** (Prerequisite: SO 1003). Three hours lecture. Investigates the nature, causes, and consequences of social inequality and stratification, the relationships among class, race, and gender inequalities in cross-cultural perspective.

**SO 3013. Society and the Individual. (3)** (Prerequisite: SO 1003). Three hours lecture. A study of interrelationship between society and the individual. Emphasis is placed on the structural aspects of socialization and the social construction of reality.

**SO 3053. Organizations in Modern Society. (3)** (Prerequisite: SO 1003). Three hours lecture. Examines the nature and types of formal organizations, their impact on, and outcomes for, individuals and society; organizational structures, processes, environments and effectiveness.

**SO 3103. Social Theory I. (3)** (Prerequisite: Nine hours of sociology, CS 1013 or equivalent and junior standing). Lecture course. Study of European and American sociological theory—intellectual antecedents as well as social-cultural context.

**SO 3213. Introduction to Social Research. (3)** (Prerequisites: Nine hours of sociology and junior standing). Three hours lecture. A survey of the general field of research and methodology, including an examination of the various types of research designs, techniques, and procedures.

**SO 3303. Rural Sociology. (3)** (Prerequisite: Six hours of social science or consent of instructor). Three hours lecture. A study of rural society, its organizations, agencies, institutions, population trends and composition, patterns of settlement, social processes, and changing character.

**SO 3313. Deviant Behavior. (3)** (Prerequisite: SO 1103 or its equivalent or consent of instructor). Three hours lecture. Introduction to the social and cultural factors related to human deviance. Special attention is given to the study of various theories of deviance.

**SO 3323. Contemporary Woman. (3)** Three hours lecture. Introductory course for the Concentration in Women's Studies. Major topics are women's heritage, identity, culture, and vulnerabilities.

**SO 3333. Society and Religion. (3)** Three hours lecture. Religion as an institution. Examines the social origins of religion and its functions, both positive and negative, in social movements, social control and politics. (Same as REL 3333).

**SO 3343. Gender, Crime, and Justice. (3)** Three hours lecture. Gender differences in criminal behavior, victimization, and criminal justice processing, emphasizing the unique experiences of women in all of these areas. (Same as COR 3343).

**SO 3503. Violence in the United States. (3)** Three hours lecture. In-depth study of violence, including types of violence, categories of offenders and victims, its social causes, and potential solutions. (Same as COR 3503).

**SO 3603. Criminology. (3)** (Prerequisites: SO 1103 and 3313 or equivalent or consent of instructor). A study of the causes of crime, disorganized communities and homes conducive to delinquency, boys' gangs, organized crime, prison, probation, parole, and crime prevention programs.

**SO 3901. Seminar in Sociology. (1)** (Required of all senior majors). Lectures and reports. Critical evaluation of current research and theoretical writings.

**SO 3913. Industrial Sociology. (3)** (Prerequisite: SO 1003). Three hours lecture. The work group as a social group; the formal and informal organization; the roles of management

**SO 4000. Directed Individual Study.** Hours and credits to be arranged.

**SO 4113/6113. Social Organization and Change. (3)** (Prerequisites: SO 1003 and junior standing). Three hours lecture. An intensive examination of recent research focusing on the prediction, explanation and control of social change with attention to trends in developing countries.

**SO 4123/6123. Poverty Analysis: People, Organization and Programs. (3)** (Prerequisites: SO 1003 and junior standing). Three hours lecture. Historical perspectives; problems of definition and measurement; socio-cultural situations contributing to deprivation; delineation of poverty groups; social consequences of poverty; poverty programs and organizations.

**SO 4173/6173. Environment and Society. (3)** (Prerequisite: AN 1103 or SO 1003 or consent of instructor). Three hours lecture. A study of the interaction between human society and the environment including the social aspects of environmental problems. (Same as AN 4173/6173).

**SO 4203/6203. The Family in the United States. (3)** (Prerequisite: SO 1203). Three hours lecture. A study of the American family as an institution, with emphasis on change and interrelationships with other institutions.

**SO 4223/6223. Comparative Family Systems. (3)** (Prerequisite: SO 1203). Three hours lecture. A systematic study of family patterns in selected cultures of the world.

**SO 4233/6233. Juvenile Delinquency. (3)** (Prerequisite: SO 3603). Three hours lecture. Critical study of problems, causes, ways of handling; attitudes, roles and relationships of persons involved, including youthful offender, social worker, court and law enforcement officials. (Same as COR 4233/6233).

**SO 4273/6273. Sociology of Education. (3)** (Prerequisites: SO 1003 and junior standing). Three hours lecture. A sociological analysis of education as a social institution, its role in the larger society, the organization of schooling, and the social dynamics of classrooms.

**SO 4303/6303. Urban Sociology. (3)** (Prerequisites: SO 1003 and junior standing). Three hours lecture. A sociological and ecological study of urban areas emphasizing the processes of population, environment, technology and social organization.

**SO 4313/6313. Contemporary Muslim Societies. (3)** (Prerequisites: Any 1000-level sociology or religion course or consent of instructor). Three hours lecture. An examination of Islamic civilization. Muslim sectarianism, social organization and change, the individual and family, education, political and economic orders, Muslims and the world. (Same as REL 4313/6313).

**SO 4333/6333. Sociology of Sport. (3)** (Prerequisites: SO 1003 and junior standing). Three hours lecture. Examination of sport as a social institution in American society, its contributions to society and to participants.

**SO 4403/6403. Sex Roles and Gender. (3)** (Prerequisites: SO 1003, or approval of instructor). Three hours lecture. Changing sex roles in theory and reality, social problems associated with gender, and probable future realities of the female-male relationships.

**SO 4413/6413. Aging and Retirement in American Society. (3)** (Prerequisites: Nine hours of sociology or related disciplines). Three hours lecture. A study of the social and economic aspects of aging and of the social problems in American society related to the aged and retired groups.

**SO 4513/6513. Correctional Systems. (3)** (Prerequisite: SO 3603). Three hours lecture. Survey of contemporary correctional system and practices. Emphasis placed on the formal organization and functioning of penal systems.

**SO 4623/6623. Language and Culture. (3)** (Prerequisite: AN 1103 or consent of instructor). Three hours lecture. Examination of language as a part of culture, a source of knowledge about other aspects of culture, and a social behavior. (Same as AN 4623/6623 and EN 4623/6623).

**SO 4633/6633. Sociolinguistics. (3)** (Prerequisites: SO 1003, or consent of instructor). Three hours lecture. Examination of relationship between language and society, and how, when, and why people in speech communities use language varieties. (Same as AN 4633/6633 and EN 4633/6633).

**SO 4703/6703. Population Problems and Processes. (3)** (Prerequisite: SO 1003 or consent of the instructor). Three hours lecture. World population growth and its consequences, population change and national policies, family planning, recent U.S. population trends, basic demographic measurement, the demographic report.

**SO 4803. Social Research Practice. (3)** (Prerequisite: SO 3213 or equivalent). Three hours lecture. Practical application of sociological analysis and methods conducting social research projects. Includes selec-

tion of methods and analytical techniques, data collection, ethics, and report writing.

**SO 4713/6713. Methods in Population Research. (3)** Review and evaluation of censuses, vital statistics, and demographic surveys and their uses, with emphasis on measurement, methods, and analytical techniques.

**SO 4733/6733. Community: Organization and Relationships. (3)** (Prerequisites: SO 1003 and junior standing). Three hours lecture. Rural-urban approach to community; types of local societies and community organizations; perspectives in community study.

**SO 4990/6990. Special Topics in Sociology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**SO 7000. Directed Individual Study.** Hours and credits to be arranged.

**SO 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**SO 8103. Graduate Theory I. (3)** Social theories and intellectual antecedents: European and American origins and development. Includes entire range of socio-cultural complex associated with 19th- and early 20th-century sociology.

**SO 8113. Graduate Theory II. (3)** Focus on post-19th century theory and antecedents. Delineation of the basic postures in the discipline and relative relationships of these postures to theory development.

**SO 8213. Research Design. (3)** (Prerequisite: SO 8274). Three hours lecture. Emphasis on overall design, plan, structure, and strategy. Also limitations of theory, measurement, sampling and statistical testing in research.

**SO 8223. Techniques of Survey Research. (3)** (Prerequisite: SO 8213). Schedule construction, sampling, field procedures, techniques of analysis, presentation of statistical materials.

**SO 8233. Qualitative Analysis. (3)** (Prerequisite: SO 8213). Three hours lecture. Qualitative approaches to understanding social behavior. Exposure to all phases of qualitative research: epistemology, design, field work, ethics, and writing research results.

**SO 8274. Graduate Social Statistics I. (4)** (Prerequisite: ST 2113 or equivalent). Three hours lecture. Two hours laboratory. Probability, hypothesis testing, tests of means and proportions, contingency table analysis, analysis of variance, bivariate linear regressions correlation; data analysis and interpretation using current statistical software.

**SO 8284. Graduate Social Statistics II. (4)** (Prerequisite: SO 8274). Three hours lecture. Two hours laboratory. Hypothesis testing, analysis of variance, multiple linear regression and correlation, causal models, exploratory factor analysis; data analysis and interpretation using current statistical software.

**SO 8293. Structural Equations Modeling with Latent Variables in Sociology. (3)** (Prerequisites: SO 8284 or equivalent). Three hours lecture. The application of structural equation modeling techniques to sociological problems containing unobserved variables, focusing on estimation and interpretation of model parameters with errors of measurement.

**SO 8323. Strategies and Tactics of Planned Change. (3)** (Prerequisites: Six hours in the social sciences). Three hours lecture. Study of models of social action: historical bases and types of planned change; case studies in planned change; roles of change agents. Emphasis on application.

**SO 8343. Complex Organizations. (3)** Theory and research in organizations. Nature and types of organizations; determinants and consequences of organizational growth; organizational effectiveness; production, authority, and control systems in organizations.

**SO 8403. Seminar in Race Relations. (3)** Three hours lecture. Contributions of anthropology, sociology and psychology to the field of race relations. Critical analysis of recent studies, current racial theories and programs.

**SO 8413. Seminar in Social Stratification. (3)** Three hours lecture. Critical analyses of theories and research on social class and related social structures. Explores race/gender/class stratification and policies to alter income/wealth inequality.

**SO 8423. Seminar in Deviant Behavior. (3)** Examination of relation between social conditions, social problems, deviance, and deviant careers. The organization of social control activities, and the social differentiation of deviant populations.

**SO 8433. Seminar in Criminology. (3)** Exploration of conceptual, methodological, and substantive problems of research in the field of criminology. The classification of criminals and criminal careers receives special emphasis.

**SO 8503. Seminar in the Family. (3)** An advanced seminar on the family institution, emphasizing theoretical and conceptual frameworks,

topics of current concern to family sociology, and major literature in the area.

**SO 8523. Symbolic Interaction and Social Structure. (3)** Review of classic and current sociological literature in symbolic interaction and development of self as process and product of social structure.

**SO 8603. Seminar in Modernization. (3)** (Prerequisites: Six hours in social sciences). Three hours lecture. Structural, institutional and behavioral factors and processes affecting the modernization of traditional societies. Evaluation of causal factors and theoretical perspectives.

**SO 8673. Seminar in Social Impact Analysis. (3)** (Prerequisites: SO 4173/6173 or AN 4173/6173). Three hours lecture. Examination of the requirements of, methodologies for, and issues in, social impact assessment. Attention is given to practical working experience with techniques.

**SO 8703. Seminar in Population. (3)** (Prerequisite: SO 4703/6703 or equivalent). Study of population dynamics; theories of optimum pop-

ulation; population policies and programs; zero population growth; inter-relationship of population phenomena with socioeconomic developments.

**SO 8723. Advanced Demographic Analysis and Research. (3)** Techniques of population and migration estimations and projections; and methods of estimating basic demographic measures from incomplete data.

**SO 8900. Fields of Sociology. (3)** (Hours and credits to be arranged up to 3 hours.) A seminar in selected areas of sociological research and practice.

**SO 8990. Special Topics in Sociology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**SO 9000. Dissertation Research/Dissertation. (3)** Hours and credits to be arranged.

## STATISTICS

(For departmental information, see MATHEMATICS and STATISTICS.)

**ST 2113. Statistics for the Behavioral Sciences. (3)** (Prerequisite: MA 1313 or equivalent). Three hours lecture. Statistical techniques used in the behavioral sciences, including descriptive statistics, random variables and their probability distributions, estimation; confidence intervals, hypothesis testing, and measures of association.

**ST 2990. Special Topics in Statistics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ST 3113. Introduction to Statistical Inference. (3)** (Prerequisite: MA 1313 or equivalent). Two hours lecture. Two hours laboratory. Basic concepts and methods of statistics, including descriptive statistics, probability, random variables, sampling distributions, estimation, hypothesis testing, introduction to analysis of variance, simple linear regression.

**ST 4000. Directed Individual Study. (3)** Hours and credits to be arranged.

**ST 4111/6111. Seminar in Statistical Packages. (1)** One hour lecture. Introduction to the statistical computer packages available at MSU.

**ST 4211/6211. Statistical Consulting. (1)** (Prerequisite: Consent of the department). (May be repeated for credit.) Provides students with the opportunity to participate as statistical consultants on real projects; consultants are required to attend a weekly staff meeting.

**ST 4213/6213. Nonparametric Methods. (3)** (Prerequisite: An introductory course in statistical methods). Three hours lecture. Nonparametric and distribution-free methods, including inferences for proportions, contingency table analysis, goodness of fit tests, statistical methods based on rank order, and measures of association.

**ST 4523/6523. Introduction to Probability. (3)** (Prerequisite: MA 2733). Three hours lecture. Basic concepts of probability, conditional probability, independence, random variables, discrete and continuous probability distributions, moment generating function, moments, special distributions, central limit theorem. (Same as MA 4523/6523).

**ST 4543/6543. Introduction to Mathematical Statistics I (3)** (Prerequisite: MA 2743). Three hours lecture. Combinatorics; probability, random variables, discrete and continuous distributions, generating functions, moments, special distributions, multivariate distributions, independence, distributions of functions of random variables. (Same as MA 4543/6543).

**ST 4573/6573. Introduction to Mathematical Statistics II. (3)** (Prerequisite: ST 4543/6543). Three hours lecture. Continuation of ST 4543/6543. Transformations, sampling distributions, limiting distributions, point estimation, interval estimation, hypothesis testing, likelihood ratio tests, analysis of variance, regression, chi-square tests. (Same as MA 4573/6573).

**ST 4990/6990. Special Topics in Statistics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ST 7000. Directed Individual Study. (3)** Hours and credits to be arranged.

**ST 8000. Thesis Research/Thesis. (3)** Hours and credits to be arranged.

**ST 8114. Statistical Methods. (4)** (Prerequisite: MA 1313). Three hours lecture. Two hours laboratory. Fall and Spring semesters. Descriptive statistics; sampling distributions; inferences for one and two populations; completely random, block, Latin square, split-plot designs; factorials; simple linear regression; chi-square tests.

**ST 8214. Design and Analysis of Experiments. (4)** (Prerequisite: ST 8114) Three hours lecture. Three hours laboratory. Offered spring se-

mester. Procedures in planning and analyzing experiments; simple, multiple, and curvilinear regression; factorial arrangement of treatments; confounding; fractional replication; block designs; lattices; split-plots.

**ST 8253. Regression Analysis. (3)** (Prerequisite: ST 8114 or equivalent). Three hours lecture. Fall and Spring semesters. Simple linear regression analysis and related inferences, remedial measures, multiple and polynomial regression, use of indicator variables, variable selection methods, and use of computer.

**ST 8263. Advanced Regression Analysis. (3)** (Prerequisite: ST 8253). Three hours lecture. Continuation of ST 8253, including variable selection methods, optimization techniques, biased estimation methods such as ridge regression, non-linear regression, model validation methodology, indicator variables, design models.

**ST 8313. Introduction to Survey Sampling. (3)** (Prerequisite: ST 8114). Three hours lecture. Topics include: design, planning, execution, and analysis of sample surveys; simple random, stratified random, cluster, and systematic sampling; ratio and regression estimation.

**ST 8353. Statistical Computations. (3)** (Prerequisite: ST 8114). Three hours lecture. Applications of computer packages, including data screening, t-tests and Hotelling's  $T^2$ , analysis of designed experiments, regression analysis, contingency table analysis, projects, and report writing.

**ST 8413. Multivariate Statistical Methods. (3)** (Prerequisite: ST 8253). Three hours lecture. Multivariate normal; multiple and partial correlation; principal components; factor analysis; rotation; canonical correlation; discriminant analysis; Hotelling's  $T^2$ ; cluster analysis; multidimensional scaling; multivariate analysis of variance.

**ST 8423. Multivariate Analysis. (3)** (Prerequisites: ST 8413 and ST 8613). Three hours lecture. Theory of multivariate statistical methodology including multivariate normal and Wishart distributions, Hotelling's  $T^2$ , classification, multivariate analysis of variance and covariance, canonical correlation, and principal components.

**ST 8533. Applied Probability. (3)** (Prerequisite: ST 4543/6543). Three hours lecture. An introduction to the applications of probability theory. Topics include Markov Chains, Poisson Processes, and Renewal, Queuing, and Reliability theories. Other topics as time permits.

**ST 8543. Stochastic Processes. (3)** (Prerequisite: ST 8533). Three hours lecture. Continuation of ST 8533, including semi-martingales, Markov processes, second-order processes, diffusion processes, stochastic integrals, stochastic differential equations, and branching processes.

**ST 8603. Applied Statistics. (3)** (Prerequisite: ST 8214 and ST 8253 or equivalent). Three hours lecture. Advanced analysis of experimental data. Topics include mixed and random models, incomplete block design, changeover trials, experiments, analysis of covariance, and repeated measures design.

**ST 8613. Linear Models I. (3)** (Prerequisites: ST 4573/6573). Three hours lecture. Random vectors, multivariate normal, distribution of quadratic forms, estimation and statistical inferences relative to the general linear model of full rank, theory of hypothesis testing.

**ST 8633. Linear Models II. (3)** (Prerequisite: ST 8613). Three hours lecture. Continuation of ST 8613, including generalized inverses; general linear model not of full rank, related inferences, applications; computing techniques; design models, analyses, hypothesis testing; variance-component models.

**ST 8853. Advanced Design of Experiments I. (3)** (Prerequisite: ST 8603 or ST 8214). Three hours lecture. Noise reducing designs; incomplete block designs; factorial experiments, Yates' algorithms, confounding systems; fractional replication; pooling of experiments; nested designs; repeated measurement designs; messy data analyses.

**ST 8863. Advanced Design of Experiments II. (3)** (Prerequisites: ST 8853 and ST 8613). Three hours lecture. Continuation of ST 8853, including analysis of covariance, split-plot designs and variants, applications of the general linear model, response surface methodology, randomization models, pseudo-factors, and cross-over design.

**ST 8913. Recent Developments in Statistics.(3)** (Prerequisite: Consent of instructor). New results in statistical theory and/or statistical methodology; advanced work organized around topics not usually considered in the other courses.

**ST 8951. Seminar in Statistics. (1)** (Prerequisite: Consent of instructor). (May be repeated for credit). Review of literature on assigned topics; discussions and presentations of papers.

**ST 8990. Special Topics in Statistics. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**ST 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

**ST 9493. Topics in Multivariate Statistics. (3)** (Prerequisite: Consent of instructor). (May be repeated for credit). Advanced readings in multivariate statistics; course content varies depending on current issues.

**ST 9533 Probability Theory. (3)** Prerequisite: ST 4543/6543 and MA 8633). Three hours lecture. A measure-theoretic presentation of the theory of probability including independence and conditioning, conver-

gence theorems, characteristics functions, martingales, and Brownian motion.

**ST 9593. Topics in Probability Theory. (3)** (Prerequisite: Consent of instructor). (May be repeated for credit). Advanced readings in probability theory or stochastic processes: course content varies depending on current issues.

**ST 9693. Topics in Linear Models. (3)** (Prerequisite: Consent of Instructor). (May be repeated for credit). Advanced readings in linear models; course content varies depending on current interests.

**ST 9723. Nonparametric Statistical Inference I. (3)** (Prerequisite: ST 9733). Three hours lecture. A theoretical study of nonparametric statistics and robust statistical procedures. Topics may include: order statistics, empirical C.D.F.'s, M-estimates, rank statistics, optimality considerations, and asymptotic distribution theory.

**ST 9733. Statistical Inference. (3)** (Prerequisites: ST 4573/6573 and consent of Instructor). Three hours lecture. Topics include: sufficiency, completeness, and uniqueness, convex loss functions, minimax estimation, Bayesian estimation, decision theory, symmetry and invariance, and sequential testing.

**ST 9793. Topics in Statistical Inference. (3)** (Prerequisite: Consent of Instructor). (May be repeated for credit). Advanced readings in statistical inference; course content varies depending on current interests.

**ST 9893. Topics in Design of Experiments. (3)** (Prerequisite: Consent of Instructor). (May be repeated for credit). Advanced readings in the design and analysis of experiments; course content varies depending on current interests.

## SOCIAL WORK

(For departmental information, see SOCIOLOGY, ANTHROPOLOGY and SOCIAL WORK.)

**SW 2303. Social Welfare Policy I. (3)** Three hours lecture. In-depth study of the historical and contemporary effects of social welfare policy on client systems.

**SW 2313. Introduction to Social Work/Social Welfare. (3)** Three hours lecture. A study of professional social work and the historical and philosophical development of social work and social welfare.

**SW 2323. Social Welfare Policy II. (3)** (Prerequisite: SW 2313). Three hours lecture. The course provides an analysis and evaluation of social welfare policies as institutional responses to social problems, social justice, and human needs.

**SW 2990. Special Topics in Social Work. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**SW 3003. Social Work with At-Risk Populations. (3)** Three hours lecture. Examines the role and interaction of social workers with vulnerable groups. Includes concepts of racism, sexism, homophobia, oppression, affirmative action, and xenophobia.

**SW 3013. Human Behavior and Social Environment I. (3)** (Prerequisite: SW 2313). Three hours lecture. Examines biological, psychological, social-structural, and cultural aspects of human development from conception through young adulthood from a social systems perspective, emphasizing diversity and oppression.

**SW 3023. Human Behavior and the Social Environment II. (3)** (Prerequisite: SW 3013). Three hours lecture. Examines biological, psychological, social-structural, and cultural aspects of human development from middle adulthood to death from a social systems perspective, emphasizing diversity and oppression.

**SW 3213. Introduction to Social Research. (3)** (Prerequisite: Nine hours of sociology and junior standing). Three hours lecture. A survey of the general field of research and methodology including an examination of the various types of research design, techniques, and procedures.

**SW 3513. Social Work Practice I. (3)** (Prerequisites: SW 2323 and SW 3013). Three hours lecture. The course emphasizes problems solving methods utilizing communication theories and skills working with individuals, families, groups, and communities in preparation for generalist social work practice.

**SW 3523. Social Work Practice II. (3)** (Prerequisites: SW 3023, and SW 3513). Three hours lecture. The course focuses on processes in-

involved in engaging client systems in data collection, assessment, intervention, evaluation, and termination in preparation for generalist social work practice.

**SW 3533. Social Work Practice III. (3)** (Prerequisites: SW 3523). Three hours lecture. The course focuses on processes involved in engaging client systems in problem solving with emphasis upon groups and larger systems in generalist social work practice.

**SW 4000. Directed Individual Study.** (Prerequisites: Six hours of social work, junior standing, and consent of instructor). Hours and credits to be arranged. Independent research of problems related to social work.

**SW 4613. Child Welfare Services. (3)** (Consent of instructor). Three hours lecture. Assessment of parental and society's responsibilities in meeting physical, social, psychological, and legal needs of children and examining the delivery, policies, systems, and services.

**SW 4623. Social Work with the Aged. (3)** (Consent of the instructor). Three hours lecture. Assessment of social, psychological, physical, and economic needs of aging persons; their utilization of services, conjoint planning and creation of new community based resources.

**SW 4633. Social Work in Health Care. (3)** (Consent of instructor). Three hours lecture. Assessment of social work knowledge, values, and skills in understanding psychosocial aspects of illness, medical terminology, recording, discharge planning, ethics, team disciplines, and community resources.

**SW 4643. Social Work Services in Schools. (3)** Three hours lecture. Assessment of the development, concepts, policies, planning, implementation, and evaluation of social work services in primary and secondary schools.

**SW 4713. Social Work Senior Seminar. (3)** (Prerequisite: SW 3523). Critical evaluation of current issues in social work practice; examination of career opportunities; and assessment of personal educational preparation for practice.

**SW 4990/6990. Special Topics in Social Work. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**SW 4916-4926. Social Work Field Practicum/Seminar I-II. (6)** (Prerequisites: SW 4713 and SW 3533). The course provides students opportunities to apply generalist social work practice methods by completing a minimum of 450 supervised hours in a social work agency.

## THEATRE

(See Communication)

## Department of INSTRUCTIONAL SYSTEMS, LEADERSHIP, and WORKFORCE DEVELOPMENT

Office: 100 Industrial Education Building

Professors Olinzock (Head), Abraham, Cornelious, Forde, Perry, Stirewalt;  
Associate Professors Anderson, Fleming and Johnson;  
Assistant Professors: Adams, Boling, Hillman, Lightner, and Okojie

### BUSINESS TECHNOLOGY

**TKB 1012. Keyboarding. (2)** One hour lecture. Two hours laboratory. Keyboard mastery; letter writing; vertical and horizontal centering; manuscript writing; tabulation. No credit allowed if student has earned high-school credit. Students with no high-school credit will be allowed to remove this deficiency during the freshman year.

**TKB 1122. Document Formatting. (2)** (Prerequisite: TKB 1012 or equivalent). One hour lecture. Two hours laboratory. Keyboarding principles, development of speed/accuracy using computer software, and mastery of format skills required to produce business and other documents using computer software.

**TKB 1313. Records Management. (3)** Two hours lecture. Two hours laboratory. Development of guidelines for establishment, implementation, and maintenance of records control programs in various organizations.

**TKB 2112. Document Production. (2)** (Prerequisite: TKB 1122 or equivalent). One hour lecture. Two hours laboratory. Development of speed and accuracy using computer software, advanced application of formatting skills using computer software, machine dictation and transcription.

**TKB 2413. Administrative Office Procedures. (3)** (Prerequisite: TKB 1122 or instructor's consent). Three hours lecture. Principles and practices involved in preparation for administrative support positions.

**TKB 2543. Word Processing—Concepts, Procedures, and Applications. (3)** (Prerequisite: TKB 1122 or instructor's consent). Two hours lecture. Two hours laboratory. Concepts and applications in word processing using microcomputers.

**TKB 2990. Special Topics in Business Technology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**TKB 3133. Office Management. (3)** (Prerequisite: Junior standing). Three hours lecture. Planning and directing functions of offices; executive duties, selection and training of office employees; selection of office equipment and supplies.

**TKB 4283/6283. Office Systems Applications. (3)** (Prerequisite: TKT 1273). Two hours lecture. Two hours laboratory. An exploration of computer technology as it applies to the office. Provides hands-on microcomputer experience with integrated business software and graphics.

**TKB 4543/6543. Advanced Applications in Word/Information Processing. (3)** (Prerequisite: TKB 2543 or instructor's consent.) Two hours lecture. Two hours laboratory. Applications in advanced word processing and desktop publishing.

**TKB 4990/6990. Special Topics in Business Technology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

### INDUSTRIAL TECHNOLOGY

**TKI 1223. Wood, Polymer, and Composite Processing. (3)** Two hours lecture. Two hours laboratory. The planning, operation, and control of the processing of natural and synthetic polymers and associated composites.

**TKI 1813. Basic Industrial Electricity and Electronics. (3)** One hour lecture. Four hours laboratory. Study of fundamental industrial electrical and electronic principles with experimentation and project construction.

**TKI 2312. General Metal Work. (2)** Four hours laboratory. Sheet and wrought metal processing; cold forming, bench tools, process and analysis, material selection and utilization, experimentation, project construction.

**TKI 2323. Forging, Welding and Founding. (3)** (Prerequisite: Concurrent or credit in TKI 1813). Six hours laboratory. Practice in hand forging; annealing, hardening and tempering of tool steel; casting, gas and electric welding; plasma arc cutting.

**TKI 2413. History and Appreciation of the Artcrafts. (3)** Three hours lecture. Growth and development of the artcrafts through the ages; instructional applications; practical designs; demonstrations and projects in artmetal, leather, ceramics, and other handicraft areas.

**TKI 2990. Special Topics in Industrial Technology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**TKI 3043. Industrial Safety. (3)** Three hours lecture. Principles and procedures relating to appraisal, organization and administration of safety programs in industrial plants including implementation of occupational safety and health legislation.

**TKI 3063. Industrial Human Relations. (3)** Three hours lecture. The application of psychological principles to teacher-pupil relationships, employer-employee relationships, and other human relationships in business and industry.

**TKI 3083. Job Analysis and Related Industrial Procedures. (3)** Three hours lecture. Trade and job analysis with application to appropriate industrial procedures.

**TKI 3103. Advanced Industrial Electricity and Electronics. (3)** (Prerequisite: TKI 1813). One hour lecture. Four hours laboratory. Continuation of TKI 1813. Study of and experimentation with industrial electronic, transistor, and integrated circuitry.

**TKI 3183. Machine Metal Processing. (3)** Six hours laboratory. Machine tool (drill, grinder lathe, mill and shaper) operations; bench metals, precision measurements, calculations, and chipless machining; project construction.

**TKI 3223. Industrial Materials Technology. (3)** (Prerequisite: CH 1043). Two hours lecture. Two hours laboratory. An investigation of the mechanical and characteristic properties of industrial materials. The influence of these properties on manufacturing and product service requirements.

**TKI 3363. Motion and Time Study. (3)** (Prerequisite: TKI 3083). Two hours lecture. Two hours laboratory. A study of the techniques for analysis of production systems, the design of work stations, and the development of time standards. (for non-I.E. students). (Same as IE 3113).

**TKI 4103. Industrial Control Systems. (3)** (Prerequisite: TKI 3103). One hour lecture. Four hours laboratory. Application of basic and advanced industrial electronic principles to industrial control systems and processes.

**TKI 4113/6113. Industrial Fluid Power. (3)** (Prerequisites: PH 1113 and TKI 3103). One hour lecture. Four hours laboratory. A practical study of fluid power concepts, components, and systems as relates to modern industrial applications and to appropriate scientific principles. Hands-on laboratory activities.

**TKI 4203/6203. Automated Systems. (3)** (Prerequisite: TKI 4103). Two hours lecture. Two hours laboratory. An advanced study of automated systems and applications for the Industrial Technologist.

**TKI 4213/6213. Survey of Energy Sources and Power Technology. (3)** (Prerequisite: three semester hours physical science or other physics). Three hours lecture. Scientific and applied approaches to energy conversion, transmission, utilization, and conservation. Internal-external combustion, nuclear, fluid, hydroelectric, solar, etc. Current energy problems; lab demonstrations; activities.

**TKI 4223/6223. Quality Assurance. (3)** (Prerequisites: BQA 2113 and ACC 1203). Three hours lecture. Concepts and procedures to design, plan, assure and audit quality and quality systems.

**TKI 4263/6263. Manufacturing Technology & Processing. (3)** (Prerequisite: TKI 3363). One hour lecture. Four hours laboratory. Interpretation of modern industry duplicates the life cycle of an industrial enterprise in a laboratory environment.

**TKI 4303/6303. Industrial Robotics. (3)** (Prerequisite: TKI 4103). Two hours lecture. Two hours laboratory. A study of industrial robotics and applications for production supervisors.

**TKI 4990/6990. Special Topics in Industrial Technology. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

### TECHNOLOGY TEACHER EDUCATION

**TKT 1273. Microcomputers in Education. (3)** Three hours lecture. A study of the educational application of microcomputer technology.



**TKT 2990. Special Topics in Technology Teacher Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**TKT 3001. Practicum in Vocational Education. (1)** Observation of secondary and high school students and participation in classroom activities prior to the directed teaching.

**TKT 3153. Teaching Business Technology. (3)** (Prerequisite: Admission to teacher education). Three hours lecture. A study of objectives, materials, and teaching methods appropriate for business technology courses.

**TKT 3173. Teaching Business Education Skills Subjects. (3)** (Prerequisite: Acceptance to student teaching). Three hours lecture. A study of objectives, materials, and teaching methods appropriate for business education skills subjects.

**TKT 3303. Coordination of Vocational Student Organizations. (3)** Three hours lecture. Learning experiences which lead to an understanding of purposes, objectives, and successful operation of vocational student organizations. Emphasis on business and marketing vocational student organizations.

**TKT 4000. Directed Individual Study.** Hours and credits to be arranged.

**TKT 4073/6073. Instructional Materials Development and Use in Vocational Education. (3)** Three hours lecture. Development and use of lesson plans and supporting written and audio-visual materials.

**TKT 4103/6103. Delivery of the Vocational-Technical Instructional Program. (3)** Three hours lecture. Methods and techniques of instructing vocational-technical students in the classroom and laboratory setting.

**TKT 4143/6143. History and Philosophy of Vocational and Technology Education. (3)** Three hours lecture. History and development, aims and purposes of vocational education.

**TKT 4183/6183. Coordination of Part-Time Education. (3)** Three hours lecture. Principles of promotion, organization, and operation of part-time cooperative classes in vocational education: instruction in analyzing needs, preparing schedule of processes, developing instructional materials.

**TKT 4213/6213. Teaching Basic Business Subjects. (3)** (Prerequisite: Acceptance to teacher education.) Three hours lecture. Objectives, materials, and methods of teaching basic business subjects.

**TKT 4223/6223. Management of the Vocational-Technical Learning Environment. (3)** Three hours lecture. Techniques for organizing and managing vocational-technical education facilities, equipment, supplies, and instructional programs. Methods of managing and controlling student laboratory activities.

**TKT 4233/6233. Design of the Vocational-Technical Instructional Program. (3)** Three hours lecture. Identifying and sequencing teaching content. Planning and designing vocational-technical programs and courses.

**TKT 4253/6253. Evaluation and Measurement of Students in Vocational Education and Technology. (3)** Three hours lecture. Construction, selection, interpretation, and uses of cognitive and psychomotor evaluation instruments used in vocational-technical programs.

**TKT 4713/6713. Hypermedia for Instruction. (3)** Three hours lecture. (Prerequisite: TKT 4273/6273 or consent of instructor). A hands-on study of object-oriented programming applied to instruction, using HyperCard as a tool.

**TKT 4733/6733. Technology Laboratory Management. (3)** Three hours lecture. Physical, mechanical, and electronic considerations for effective management of technology-based learning laboratories.

**TKT 4743/6743. Elements of Electronic Desktop Publishing. (3)** (Prerequisites: TKB 2543, 4543 or consent of instructor). Two hours laboratory and two hours lecture. Design applications utilizing electronic desktop publishing technologies.

**TKT 4753/6753. Electronic Presentation. (3)** (Prerequisite: TKT 4743/6743 or consent of the instructor). Two hours lecture. Two hours laboratory. The study of using various electronic technologies in the development of visual electronic presentations.

**TKT 4853/6853. Philosophy and Principles of Vocational-Technical Instruction. (3)** Three hours lecture. Philosophy, objectives and methods of vocational-technical instruction. Introduction to teaching-learning principles and concepts.

**TKT 4873. Professional Seminar in Vocational/Technical Education. (3)** (Prerequisites: Admission to Teacher Education and senior standing). Three hours lecture. A seminar dealing with legal, professional, administrative, and curriculum issues as they relate to vocational/technical education.

**TKT 4886, 4896. Student Teaching in Vocational/Technical Education. (6,6)** (Both courses to be taken concurrently). (Prerequisites: Admission to Teacher Education and senior standing). Supervised observation and directed teaching in respective fields of endorsement.

**TKT 4990/6990. Special Topics in Technology Teacher Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**TKT 7000. Directed Individual Study.** Hours and credits to be arranged.

**TKT 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**TKT 8163. Business Education in Post-Secondary Institutions. (3)** Three hours lecture. Procedures and practices for teaching business education subjects in post-secondary institutions.

**TKT 8193. Improvement of Instruction in Office Procedures and Communications. (3)** Three hours lecture. A study of secretarial skills in the office, office systems technology and techniques, and the communicative process.

**TKT 8200. Internship in Vocational Education and Technology. (1-6)** Opportunity under supervision of regular university staff for directed experience and reporting in the major area of interest.

**TKT 8213. Content and Method of Teaching in Vocational Education. (3)** Three hours lecture. The content of various types of courses in trade, industrial, and distributive education; instruction in appropriate techniques and methods.

**TKT 8233. Occupational Survey, Placement and Follow-Up. (3)** Three hours lecture. Problems, methods and procedures involved in planning, organizing, and conducting of occupational surveys; and in the placement and follow-up of students.

**TKT 8263. Philosophy and Administration of Vocational Education. (3)** Three hours lecture. Development of well-rounded, comprehensive programs suitable to various types of schools and communities; correlation with other school programs.

**TKT 8273. Seminar in Vocational Education and Technology. (3)** Three hours lecture. Individual and group study of current trends and related problems.

**TKT 8703. Emerging Technologies. (3)** Three hours lecture. An examination of modern technologies which shape instructional delivery in a dynamic society.

**TKT 8723. Instructional Design for Industry. (3)** Three hours lecture. Techniques; strategies, and development of instruction for industry.

**TKT 8733. Telecommunications: Applications in Scholarship. (3)** Three hours lecture. The study and application of the telecommunications to professional scholarship and research endeavors; includes data search mechanisms applicable to and in support of graduate program demands.

**TKT 8743. Interactive Media. (3)** Two hours lecture. Two hours laboratory. Investigation and development of a variety of computer-interactive instructional media.

**TKT 8763. Seminar in Planning for Instructional Technology. (3)** Three hours lecture. An analytical study of techniques and strategies contributing to the establishment and effective operation of functional instructional technology.

**TKT 8773. Production of Technology-Aided Instruction. (3)** Six hours laboratory. Application of the electronic curriculum (computer and media) to the development of audio and visual aids for industry and education.

**TKT 8793. Directed Project in Instructional Technology. (3)** Design, development, and presentation of a complex, comprehensive instructional product integrating learning theories with contemporary and/or emerging technologies. Evaluation by jury.

**TKT 8803. Design and Evaluation of Instructional Software. (3)** Two hours lecture. Two hours laboratory. (Prerequisite: TKT 4273/6273 and hypermedia authoring experience). Analysis, synthesis, and evaluation of instructional software designed for and applied to varied learning situations.

**TKT 8813. Issues in Distance Education. (3)** Three hours lecture. This course investigates such issues as administration, implementation, instructional challenges, and evaluation in distance education environments including interactive video and online courses.

**TKT 8833. Design and Implementation of Data Networks. (3)** Three hours lecture. This course explores the design and implementation of data networking systems that are appropriate for instructional and research environments.

**TKT 8990. Special Topics in Technology Teacher Education. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**TKT 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## TRANSPORTATION

Office: 301 McCool

(For departmental information, see **MARKETING**, **QUANTITATIVE ANALYSIS** and **BUSINESS LAW**.)

**TR 2990. Special Topics in Transportation. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**TR 3313. Principles of Transportation. (3)** (Prerequisites: MKT 3013 or consent of instructor and junior standing). Three hours lecture. Transportation development; freight rate differential; transportation and the industrial pattern; valuation and rate making.

**TR 4000. Directed Individual Study.** Hours and credits to be arranged.

**TR 4133. General Transportation. (3)** (Prerequisite: TR 3313). Highway, airways and waterways development. Motor, airline and water carriers administration, finance, service operations, and regulation. Airline development—passenger, cargo, domestic and foreign.

**TR 4313/6313. Physical Distribution Management. (3)** (Prerequisites: BQA 2113 and MKT 3013). Functions of physical distribution in

business management; analysis of shippers, distribution problems in relation to carrier types, services and functions; methods of reducing distribution costs, use of internal and external data in warehouse and factory location; study of rate of structure and rate changes.

**TR 4393. Transportation Seminar. (3)** (Prerequisite: TR 3313). Three hours lecture. A course designed for those students engaged in intensive study and analysis of problems of a particular mode of transport.

**TR 4413/6413. National Transportation Policies. (3)** (Prerequisite: TR 3313). Extensive individual reporting on transportation literature. Designed for students desiring advanced work in the area not previously covered—ICC law and procedures; subsidy and promotion.

**TR 4990/6990. Special Topics in Transportation. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

## UNIVERSITY HONORS COURSES

Office: 45 Magruder Street

Specialized Honors courses are offered under UHP numbers; departmental Honors courses are listed under departmental abbreviations and numbers. The titles of departmental Honors courses clarify their equivalency to regular courses in relation to transfer credits and Core Curriculum and degree requirements. The sections available for honors credit are identified in the MSU Master Schedule each semester.

**UHP 1081-2091. Honors Forum. (1)** One hour lecture. Weekly meeting of honors students. Discussion led by faculty and/or students on various topics.

**UHP 2093. Ascent of Man. (3)** Three hours lecture. Examination of relationships among the arts, sciences, and humanities. (The course may be used to satisfy fine arts, social sciences, or humanities electives only.)

The courses UHP 3183 and UHP 3283 may be taken only by students who have the consent of the instructor. Since the content of each course will vary from year to year, the student should check with the instructor for more information.

**UHP 3183. Interdisciplinary Seminar in the Humanities. (3)** An investigation of an interdisciplinary problem or theme in man's experience. Lectures, readings, discussions, and reports.

**UHP 3283. Interdisciplinary Seminar in the Natural Sciences. (3)** An investigation of an interdisciplinary problem in man's understanding of the natural world. Lectures, readings, discussions, and reports.

**UHP 3198. Internship. (8)** (Prerequisites: Junior standing or consent of instructor). Individual work experience in a governmental or public agency in Washington, D.C., under the guidance of an MSU faculty member.

**UHP 3293. Internship Seminar. (3)** (Co-requisite: UHP 3218). In-depth discussion of topics relevant to various academic disciplines with an emphasis on the integration of theory and practice.

**DEPARTMENTAL HONORS COURSES** (A complete course description for each course is to be found under the department's list of courses. All of the courses except those marked with \* meet core curriculum requirements. Equivalent courses may be transferred from other institutions as honors credits.)

Each semester, departmental honors courses will be listed in the Master Schedule with section number preceded by the letter "H" and will include the word "Honors" in the title.

ACC 2013-2023\* Honors Accounting Principles I-II  
 AN 1103 Honors Introduction to Anthropology  
 ARC 1536-1546 Honors Architecture Design IA-IB  
 ARC 2536-2546 Honors Architecture Design IIA-IIB  
 ART 1113 Honors Art Appreciation  
 ART 4833-4843 Computer Animation I-II  
 CH 1223 Honors In Chemistry  
 CO 1003 Honors Oral Communication

CO 1403 Introduction to Mass Media  
 CO 1503 Introduction to Theater  
 EC 1033 Economic Social Issues  
 EC 2113 Honors: Principles of Macroeconomics  
 EC 2123 Honors: Principles of Microeconomics  
 EC 4523 History of Economic Thought  
 EG 1143 Honors Engineering Graphics  
 EN 1103-1113 Honors English Composition I-II  
 EN 2213-2223 English Literature  
 EN 2243-2253 American Literature  
 EN 2383-2393 Sophomore English Honors I-II  
 FLF 2133-2143 Honors French III-IV  
 FLG 2133-2143 Honors German III-IV  
 FLS 2133-2143 Honors Spanish III-IV  
 GG 1113 Honors Physical Geology  
 GG 163 Honors Historical Geology  
 HI 1183 Honors Problems in Modern World Civilization  
 HI 1083 Honors Problems in American Civilization  
 MA 1713, 1723, 2733, 2743 Honors Calculus I, II, III, IV  
 PH 2213, 2223 Honors Physics I, II  
 PHI 1103 Honors Introduction to Philosophy  
 PHI 1123 Honors in Ethics  
 PS 1113 Honors in American Government  
 PS 1313 Honors in International Relations  
 PS 1513 Honors Comparative Government  
 PS 4083 Senior Research/Thesis  
 PSS 1393 Honors Plant Science  
 PSY 1013 Honors Introduction to General Psychology  
 SO 1003 Honors Introduction to Sociology

Directed Individual Study for Honors credit may be arranged under departmental numbers 4000. Please see "The UHP Handbook" available from the University Honors Program for additional information about honors courses.

**ANIMAL HEALTH SCIENCES**

Office: College of Veterinary Medicine (Wise Center)

**VS 1012. Introduction to Veterinary Medicine Careers. (2)** Two hours lecture. A survey of careers available to graduate veterinarians.

**VS 2033. Diseases of Poultry. (3)** (Prerequisite: VS 2014 or course in poultry physiology). Two hours lecture. Two hours lecture-demonstration and laboratory. Survey of cause, effects, diagnosis, prevention, and control of common poultry diseases.

**VS 2990. Special Topics in Animal Health Sciences. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis

to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**VS 3014. Anatomy and Physiology. (4)** Three hours lecture. Two hours laboratory. A survey of structure and function of animal body systems and a study of their interrelationships.

**Department of WILDLIFE and FISHERIES**

Office: 109 Thompson Hall

Professors Brunson, Burger, D'Abramo, Demarais, Jackson, Kaminski, Leopold (Head), Miranda\*\*\*, Robinson, Schramm\*\*\*, and Tucker; Professors Emeriti Arner, Jacobson\*.

Associate Professors Dibble, Hargreaves, and Jones;

Assistant Professors Brennan\*\*, Conner\*\*, Dinsmore, Godwin\*\*, Griffin\*\*, Hunt, Kelly,

Miller\*\*, Minnis, Palmer\*\*, Reinecke\*\* and Vilella\*\*

**WF 1101. Wildlife and Fisheries Profession. (1)** Prerequisite: Freshman or Sophomore standing). One hour lecture. Orientation to the interdisciplinary and applied nature of wildlife and fisheries management and related fields, emphasizing the department, college, and university; student roles and responsibilities; and career opportunities.

**WF 1213. Introduction to Wildlife and Fish Conservation. (3)** Three hours lecture. A survey of wildlife and forest conservation, stressing biological principles and management practices for renewable resources.

**WF 2990. Special Topics in Wildlife & Fisheries. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**WF 3000. Internship in Wildlife, Fisheries or Aquaculture. (1-4).** (Prerequisite: Junior standing). Professional work experience with governmental or private agencies. (Hours and credits to be arranged).

**WF 3031. Introductory Wildlife/Fisheries Practices. (1)** (Prerequisite: Junior standing). Field exercises and practical exposure to research and management of wildlife and fish species and habitats in Mississippi.

**WF 3131. Applied Aquatic and Terrestrial Ecology Laboratory. (1)** (Corequisite: WF 3133). Four hours laboratory, alternate weeks. Demonstration of ecological concepts and methodologies in the classroom and in the field.

**WF 3133. Applied Aquatic and Terrestrial Ecology. (3)** (Corequisite: WF 3131). Three hours lecture. Four hours laboratory, alternate weeks. The application of ecological principles which serve as a basis for the management of wildlife and fisheries in terrestrial and aquatic habitats.

**WF 3141. Seminar in Wildlife and Fisheries. (1)** (Prerequisite: Junior standing). One hour lecture. Current topics and job opportunities in the field of wildlife and fisheries.

**WF 4000. Directed Individual Study.** Hours and credits to be arranged.

**WF 4013. Introduction to Aquaculture. (3)** Correspondence course introducing basic principles of aquaculture production and management. Designed primarily for extension, education and other professionals and prospective fish producers.

**WF 4121. Wildlife and Fisheries Biometrics Laboratory. (1)** (Prerequisite: ST 3113; corequisite: WF 4122). Four hours laboratory, alternate weeks. Application of basic statistical analytical tools to address wildlife and fisheries management/research questions.

**WF 4122 Wildlife and Fisheries Biometrics. (2)** (Prerequisite: ST 3113; corequisite: WF 4121). Two hours lecture. Application of basic statistical analytical tools to address wildlife and fisheries management/research questions.

**WF 4133/6133. Fisheries Science (3)** (Prerequisite: ST 3113 or equivalent). Two hours lecture. Four hours laboratory, alternate weeks. Study of the biological parameters of fish populations.

**WF 4153/6153. Principles of Wildlife Conservation and Management. (3)** Two hours lecture. Four hours laboratory on alternate weeks. Principles of game management; habitat improvement; wildlife techniques; public relations.

**WF 4173/6173. Fish Physiology. (3)** Two hours lecture. Four hours laboratory, alternate weeks. Basic anatomy and physiology of major systems in fish: integration of the physiological systems as they function during development, growth and maturation.

**WF 4183/6183. Finfish Aquaculture. (3)** (Prerequisites: BIO 1504 and BIO 3524.) Two hours lecture. Four hours laboratory alternate weeks. Introduction to theory and practice of aquacultural methods to the culture of finfish.

**WF 4193/6193. Crustacean and Molluscan Aquaculture. (3)** Two hours lecture. Four hours laboratory, alternate weeks. General biology and methods associated with the various phases of culture of crustacean and molluscan species grown throughout the world.

**WF 4213/6213. Wildlife Damage Management. (3)** (Prerequisites: WF 3133/3131 or consent of instructor). Two lectures per week, labs alternate weeks. Principles and practices of wildlife damage management with emphasis on damage identification and damage prevention and control methods.

**WF 4221/6221. Limnology Laboratory. (1)** (Prerequisite: WF 3133 or consent of instructor; corequisite: WF 4222/6222). Four hours laboratory skills required to evaluate freshwater ecosystems.

**WF 4222/6222. Limnology. (2)** (Prerequisite: WF 3133 or consent of instructor; corequisite WF 4221/6221). Two hours lecture. The physical, chemical and biological processes underlying the function and productivity of freshwater ecosystems.

**WF 4243/6243. Wildlife Techniques. (3)** (Prerequisite: Junior or Senior standing or consent of instructor). Two hours lecture. Four hours laboratory. Contemporary research and management techniques and tools for wildlife populations and habitats.

**WF 4253/6253 Application of Spatial Technologies to Wildlife and Fisheries Management (3)** (Prerequisite: Sr. standing or consent of instructor). Two hours lecture. Four hours laboratory weekly. Practical Application of Global Positioning Systems and Geographic Information Systems to Wildlife and Fisheries Management.

**WF 4263/6263. Wildlife Diseases. (3)** Two hours lecture. Four hours laboratory, alternate weeks. Effects and management of parasites and diseases in wild bird and mammal populations. (Same as CVM 4263/6263).

**WF 4313/6313. Fisheries Management. (3)** (Prerequisite: WF 3133 or WF 3131 or consent of instructor). Two hours lecture. Laboratories alternate weeks. Principles of fisheries management and methods for assessment and analysis of fish populations and aquatic habitats.

**WF 4323/6323. Wildlife Nutrition and Physiology. (3)** Two hours lecture. Four hours laboratory, alternate weeks. Basic applied physiology and nutrition related to management of ruminant and nonruminant game animals.

**WF 4333/6333. Fish and Shellfish Nutrition (3)** (Prerequisites: CH 2503 and CH 2501 or BCH 3613). Three hours lecture. Fundamental and applied aspects of the nutrition of fish, crustacean, and mollusk species including feeding behavior, nutritional ecology, energetics, and nutrient requirements. (Same as NTR 6333).

**WF 4343/6343. Pond and Stream Management. (3)** (Prerequisite: Junior or Senior standing or consent of instructor). Two hours lecture. Four Hours Laboratory alternate weeks. Ecological foundations and management techniques for fisheries in small impoundments and streams.

\* Courtesy appointment

\*\* U.S.D.I.

**WF 4353/6353. Fish and Wildlife Policy and Law Enforcement. (3)** Prerequisite: Sr. standing or consent of instructor). Three hours lecture. A survey of the major content areas of fish and wildlife policy and law enforcement. Emphasis is on the fundamentals of conservation policies and laws.

**WF 4363/6363. Wildlife and Fisheries Administration and Communication. (3)** (Prerequisite: Junior standing) Two hours lecture. Three and one-half hours lab, alternate weeks. Administrative and communicational techniques and skills in the workplace and political environments of wildlife and fisheries organizations.

**WF 4371/6371. Water Quality Management Laboratory. (1)** (Prerequisite: CH 1043 and CH 1053 or consent of instructor, corequisite WF 4372/6372). Four hours laboratory, alternate weeks. Basic analytical and laboratory skills required to evaluate water quality problems.

**WF 4372/6372. Water Quality Management. (3)** (Prerequisite: CH 1043 and CH 1053 or consent of instructor; corequisite: WF 4371/6371). Two hours lecture. Biological, chemical and physical principles affecting water quality; water quality management techniques in aquaculture, fisheries and wastewater treatment.

**WF 4383/6383. Wetlands Ecology and Management. (3)** Two hours lecture. Four hours laboratory, alternate weeks. Hydrology, soils and biogeochemistry of wetlands; structure and function of important wetland types; wetland management for wildlife and fisheries; wetland creation and restoration.

**WF 4394/6394. Waterfowl Ecology and Management. (4)** (Prerequisite: WF 3133, WF 3131, WF 4153, senior standing, or consent of instructor). Three hours lecture. Four hours laboratory. Annual ecology of North American waterfowl, habitat and population ecology, and management, waterfowl identification, field trips, management plan, and current issues.

**WF 4453/6453. International Cultures and Natural Resources Management. (3)** (Prerequisite: Jr./Sr. standing or consent of instructor). Three hours lecture. Comparative examination of how natural resources are viewed and used by various cultures and how this relates to natural resources management.

**WF 4463/6463. Human Dimensions of Fish and Wildlife Management. (3)** (Prerequisite: Jr./Sr. standing or consent of instructor). Three hours lecture. Survey of the major content areas of human dimensions. Emphasis on the considerations and implications associated with measuring, evaluating and influencing people's attitudes and behaviors.

**WF 4473/6473. Wildlife and Fisheries Practices. (3)** (Prerequisite: Senior standing). Two hours lecture. Four hours laboratory. The integration of principles of ecology, wildlife and fisheries techniques and policies for effective planning and implementation of natural resource management.

**WF 4484/6484. Upland Avian Ecology and Management. (3)** Three hours lecture. Four hours laboratory. (Prerequisites: WF 3133 and WF 3131 and WF 4153 and senior standing or consent of instructor). The application of ecological principles to management of wildlife populations, focusing on avian species and communities inhabiting upland ecosystems.

**WF 4494/6494. Large Mammal Ecology and Management. (3)** (Prerequisites: WF 3133/3131 and WF 4153 and senior standing). Three hours lecture. Four hours laboratory, alternate weeks. Ecological principles and applied methods used in the management of large mammals.

**WF 4990/6990. Special Topics in Wildlife & Fisheries. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**WF 7000. Directed Individual Study.** Hours and credits to be arranged.

**WF 8000. Thesis Research/Thesis.** Hours and credits to be arranged.

**WF 8012. Advanced Applied Ecology. (2)** One hour lecture. Two hours laboratory. Provides a review in fundamental principles and application of community ecology, with emphasis on professional communi-

cation in teaching and research important to natural resource management.

**WF 8113. Scientific Literature and Communication for the Natural Sciences. (3)** Two hours lecture. Three hours laboratory. Experience and advanced training in multiple forms of communication useful in the renewable natural resource sciences.

**WF 8131-8231. Seminar in Fisheries and Wildlife. (1)** One hour each week. Seminar for graduates in natural history field.

**WF 8134. Research Methods in Wildlife and Fisheries Sciences. (4)** (Prerequisites: Graduate standing; ST 8114). Three hours lecture. Four hours laboratory. Graduate level introduction to application of scientific methods to wildlife and fisheries ecology and management.

**WF 8144. Theory of Wildlife Population Ecology. (4)** (Prerequisite: WF 3133, ST 3133 or consent of instructor.) Three hours lecture. Two hours laboratory, weekly. Theory of wildlife population ecology including population growth, population regulation, predation, and competition. Basic methods of data collection and population sampling.

**WF 8154. Quantitative Applications in Wildlife Population Ecology. (4)** (Prerequisite: WF 8144, ST 8114 or consent of instructor). Three hours lecture. Four hours laboratory weekly. Application of basic statistical analytical tools to address natural resource management research questions.

**WF 8223. Management of Impounded River Ecosystems (3)** (Prerequisites: WF 6313/4313 or equivalent). A survey of guidance and criteria for managing reservoirs and associated riverine environments to enhance fisheries. Focus is on managing fish and their environment.

**WF 8243. Conservation Biology. (3)** (Prerequisites: WF 3133, BIO 3103 or consent of instructor). Three hours lecture. Theory and applications of conservation biology, measures of biodiversity, ecological geography, measures and treatments of decline.

**WF 8273. Advanced Fisheries Management. (3)** (Prerequisites: WF 4133/6133 and WF 4313/6313 or consent of instructor) Three hours lecture. Field exercises during spring break. Advanced treatment of the multidimensional aspects of fisheries management in a global setting with emphasis on setting realistic objectives and establishing appropriate strategy.

**WF 8283. Fish Genetics. (3)** (Prerequisite: GNS 3103 and ST 8114.) Two hours lecture. Four hours laboratory. Introduction to and use of genetic methods in aquaculture and wild fisheries management.

**WF 8343. Conceptual Ecology and Natural Resource Management. (3)** (Prerequisites: WF 8012 or equivalent or consent of instructor). Three hours lecture. A forum to discuss current literature and theory that advances the study of community ecology and its application to natural resource management.

**WF 8344. Wildlife Habitat Analysis and Management. (4)** (Prerequisite: BIO 4203. Three hours lecture. Four hours laboratory alternate weeks. Identification, ecology, analysis and management of plant communities of value to upland and wetland game species of North America.

**WF 8413. Advanced Fishery Science. (3)** (Prerequisites: WF 4133/6133 and ST 3113, or equivalents). Two hours lecture. Two hours laboratory. Estimation and interpretation of vital statistics of fish populations; analysis of fishery data using computers; models for assessment of fish stocks.

**WF 8644. Wildlife Habitat Evaluation and Modeling. (4)** (Prerequisites: ST 8114 or equivalent, WF 8344 or equivalent and graduate standing or consent of instructor). Three hours lecture. Four hours laboratory. Contemporary quantitative analyses of wildlife habitat relationships, habitat sampling methods, habitat selection, and habitat modeling.

**WF 8990. Special Topics in Wildlife & Fisheries. (1-9)** Credit and title to be arranged. This course is to be used on a limited basis to offer developing subject matter areas not covered in existing courses. (Courses limited to two offerings under one title within two academic years).

**WF 9000. Dissertation Research/Dissertation.** Hours and credits to be arranged.

## WOMEN'S STUDIES

Office: 208 Allen Hall

**WS 1173. Introduction to Gender Studies. (3)** Three hours lecture. An introduction to theoretical concepts in Gender Studies. This course will examine the influence of the women's movement on the aca-

demic development of Gender Studies (Same as AN 1173 and SO 1173).

## IV. FACULTY, EMERITI, and STAFF

### FACULTY

2003-2004

October 1, 2002

#### GILES DISTINGUISHED PROFESSORS

Dr. Terry L. Amburgey  
 Dr. Janice E. Chambers  
 Dr. Nancy Duvall Hargrove  
 Dr. B. Keith Hodge  
 Dr. Jeffrey V. Krans  
 Dr. John F. Marszalek  
 Dr. Edward E. Milam  
 Dr. J. Elton Moore  
 Dr. Henry N. Pitre  
 Dr. David R. Shaw  
 Dr. Ratnasingham Shivaji  
 Dr. W. Glenn Steele  
 Dr. Joe F. Thompson  
 Dr. W. William Wilson

- J. CHARLES LEE, *President*, B.S., North Carolina State University, 1964, Ph.D., North Carolina State University, 1972.
- BEN R. ABADIE, *Professor of Physical Education*, B.S., Tulane, 1980; M.S., University of Southern Mississippi, 1983; Ed.D., 1986.
- CRAIG A. ABEL, *Adjunct Assistant Professor of Entomology*, B.S., Iowa State University, 1987; M.S., 1993, Ph.D., 1998.
- JIMMY W. ABRAHAM, *Adjunct Professor of Counselor Education*, B.S., Mississippi State University, 1975; M.Ed., 1977; Ph.D., The University of Mississippi, 1985.
- PATTI S. ABRAHAM, *Research Professor*, Research and Curriculum Unit, B.S., M.S., Ed.D.,
- JOHN J. ADAMCZYK, Jr., *Adjunct Assistant Professor of Entomology*, B.S., The University of Wisconsin-Madison, 1992; M.S., Clemson University, 1994; Ph.D., Louisiana State University, 1998.
- JAMES H. ADAMS, *Assistant Professor of Instructional Systems, Leadership and Workforce Development*, B.S., Mississippi State University, 1978; M.Ed., Georgia Southern University, 1996; Ed.D., Oklahoma State University, 2000.
- CAROLYN E. ADAMS-PRICE, *Associate Professor of Psychology; Research Fellow, Social Science Research Center*, B.A., University of California, Santa Cruz, 1979; M.A., Brandeis University, 1983; Ph.D., West Virginia University, 1988.
- NOEL D. ADDY, JR., *Associate Professor of Accounting*, B.S., University of Arizona, 1974; M.A., 1976; Ph.D., 1985, C.P.A., Mississippi.
- GEORGE A. ADEBIYI, *Professor of Mechanical Engineering*, B.S., University of Manchester, 1969; Ph.D., 1973.
- A. JERALD AINSWORTH, *Professor of Veterinary Medicine; Head of Basic Science Department; and Director of Research, College of Veterinary Medicine*, B.S., Delta State University, 1975; M.S., University of Mississippi Medical Center, 1977; Ph.D., 1979.
- AKTOSUN, TUNCAY, *Department of Mathematics and Statistics*, Middle East Technical University, 1978; M.S., 1981; Ph.D., 1986.
- ALBERT J. ALLEN, *Professor of Agricultural Economics*, B.S., Alcorn State University, 1971; M.S., Mississippi State University, 1974; Ph.D., 1978.
- EDWARD B. ALLEN, *Assistant Professor of Computer Science*, B.S., Brown University, 1971; M.S., University of Pennsylvania, 1973; Ph.D., Florida Atlantic University, 1995.
- MICHAEL T. ALLEN, *Extension Instructor and Governmental Training Specialist*, B.A., University of Southern Mississippi, 1993; M.P.P.A., Mississippi State University, 1994.
- PAUL W. ALLEN, *Associate Professor of Accounting, Meridian Campus*, B.P.A., Mississippi State University, 1981; M.B.A., Loyola University, 1984; D.B.A., Mississippi State University, 1994; C.P.A., Mississippi, 1982.
- THOMAS G. ALTHEN, *Professor of Animal and Dairy Sciences*, B.S. University of Maryland, 1967; M.S., 1971; Ph.D., 1973.
- CLAYTON B. ALTIZER, *Research Associate I, Forestry*, B.S., M.S.,
- TERRY L. AMBURGEY, *Professor of Forest Products*, B.S., State University of New York, College of Environmental Science and Forestry, 1963; M.S., 1965; Ph.D., North Carolina State University, 1969.
- VERNON D. AMMON, *Professor of Plant Pathology*, B.S., University of Missouri, 1965; M.S., 1966; Ph.D., 1972.
- JOHN D. ANDERSON, *Assistant Extension Professor, Department of Agricultural Economics*, B.S., College of the Ozarks, 1992; M.S., Arkansas State University, 1994; Ph.D., Oklahoma State University, 1998.
- GORDON L. ANDREWS, *Extension Professor of Entomology*, B.S., Southeastern Louisiana College, 1967; M.S., Louisiana State University, 1970; Ph.D., Mississippi State University, 1972.
- LINDA S. ANDREWS, B.S., M.S., Ph.D., *Assistant Extension/Research Professor, Food Science, Experimental Seafood Processing Laboratory, Pascagoula.*
- KELLI ANTHONY, *Lecturer, Department of Communication*, B.A., Mississippi State University, 1998; M.A., University of Alabama, 2001.
- W. STANLEY ANTHONY, *Adjunct Assistant Professor of Agricultural and Biological Engineering*, B.S., Mississippi State University, 1968; M.S., 1970.
- ABDOLLAH ARABSHAH, *Research Engineer*, Engineering Research Center, B.S., M.S., Ph.D.
- KEVIN L. ARMBRUST, *Associate Professor of Chemistry and State Chemist, Mississippi State Chemical Laboratory*, B.S., University of CA at Davis, 1987; Ph.D., University of CA at Davis, 1992.
- KEVIN J. ARMSTRONG, *Associate Professor of Psychology; Research Fellow, Social Science Research Center*, B.A., Carleton College, 1982; Ph.D., Illinois Institute of Technology, 1992.
- LYNNE S. ARNAULT, *Professor of Counseling Education, Educational Psychology, and Special Education*, B.S., Mississippi State University, 1974; M.R.E., New Orleans Baptist Theological Seminary, 1977; M.S., Mississippi State University, 1979; Ed.S., 1981; Ed.D., Memphis State University, 1985.
- KIRK P. ARNETT, *Professor of Information Systems*, B.S., Mississippi State University, 1968; M.B.A., 1974; D.B.A., 1984.
- ROBERT PAUL ARNETT, *Associate Professor of Communication*, B.F.A., Pacific Lutheran University, 1970; M.A., Washington State University, 1983, Ph.D., University of Southern Mississippi, 1996.
- HENDRIK F. ARNOLDUS, *Associate Professor of Physics*, B.S., Eindhoven University of Technology, The Netherlands, 1980; M.S., 1981; Ph.D., Utrecht University, The Netherlands, 1985.
- RANGASWAMI ARUNKUMAR, *Research Engineer II, DIAL*, B.T., M.S.
- JON H. ARVIK, *Chief Technologist*, Remote Sensing Technologies Center, B.A., Central Washington University, 1963; M.S., 1967; Ph.D., Colorado State University, 1973.
- BETH E. ASHMORE, *Assistant Professor and Instruction Services Librarian*, M.S., University of Illinois, Urbana-Champaign, 2001.
- FRANK W. AUSTIN, *Associate Professor of Veterinary Medicine*, B.S., Oklahoma State University, 1979; D.V.M., 1983; Ph.D., Louisiana State University, 1988.
- JIMMY L. AVERY, *Associate Extension Professor-Aquaculture*, B.S., University of Mississippi; M.S., Delta State University; Ph.D., Louisiana State University.
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MARNIE VOLKENANT-MEURER, B.S., M.Ed., Assistant Director for Assignments, Contracts, and Billing, Housing and Residence Life

RICHARD L. WADE, Sergeant Major, Chief Instructor of Military Science

BETTY F. WALKER, B.S., Coordinator, Infant Toddler Center

CAROL WALKER, International Immigration Advisor, International Services Office

FRANCES J. SMITH WALKER, B.S., Business Manager, Department of Agricultural Economics

RENEE WALKER, B.S., Nurturing Homes Initiative Child Care Training Coordinator, School of Human Sciences

RONALD D. WALKER, B.S., M.M.Ed., Ed.D., Associate Specialist, Center for Governmental Technology

MARY JO WALLACE, B.S., M.Ed., Senior Publications Editor, Office of Agricultural Communications

ANGELA WALLER, B.P.A., B.B.A., Assistant Director, Printing Services

LAURA WALLING, B.S., M.Ed., Director of Recreational Sports

RAMONA WALTERS, Academic Records Assistant, Graduate Studies in Business

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JOAN WANG, B.S., Programmer Analyst, Information Systems

XIAO WANG, B.S., M.S., Research Associate I, Engineering Research Center

JOSHUA WARD, A.A.S., B.B.A., Computer Programmer

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LOUIS WASSON, B.S., M.S., Research Associate I, Engineering Research Center

ROY WATKINS, B.A., Manager of Laboratory Animal Resources/Animal Care, College of Veterinary Medicine

JO ANN WATTS, B.A., M.S., Senior Research Associate, Research and Curriculum Unit

MELISSA WATSON, B.S., Help Desk Consultant

DANIEL WEBB, B.A., Project Manager, Information Systems

JOE C. WEBB, B.S., A.T.P., Director of Aircraft Operations

DAWN WEEMS-JONES, B.S., B.A., Financial Aid Counselor, Student Financial Aid and Scholarships

PAUL C. WELCH, B.S., M.B.A., Director of Support Services

JOHN E. WELLS, B.S., M. Ext. Ed., Video Producer, Office of Agricultural Communications

DEWAYNE WHEELER, B.S., M.Ed., District Director and Assistant Head-Coastal Research and Extension Center, Southeast District

ANDREW G. WHETSTONE, M.S., BME, Rehabilitation Engineer, T.K. Martin Center for Technology and Disability

JERRI WHITE, B.S., Compliance Coordinator, Regulatory Compliance

LOUISE WHITE, B.S., Sponsored Programs Manager, Controller and Treasurer's Office

MERLINE M. WHITE, Billing & Inventory Coordinator, Physical Plant

MICHAEL W. WHITE, B.S., M.Ed., Dean of Students

THOMAS WHITE, B.S., UNIX Systems Analyst, Systems & Networks

STAN WIGINTON, B.A., M.A., Counselor, Student Support Services

DEHLIA RAE WILKINSON, B.S., M.S., Ph.D., 4-H Youth Development Specialist/CYFAR Coordinator, 4-H Youth Development

ELIZABETH WILLIAMS, B.S., Special Educator, T.K. Martin Center for Technology and Disability

JENNIFER WILLIAMS, Desktop Support Specialist, User Services

MARSHA T. WILLIAMS, B.S., M.S., Senior Research Associate, Social Science Research Center

SANDRA WILLIAMSON, B.S., C.P.A., Business Manager, Engineering Research Center

ROBERT WILLS, B.S., M.S., D.V.M., Ph.D., Epidemiology

BETTY MAC WILSON, B.S., Graphic Designer/Illustrator, Office of Agricultural Communications

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LOWELL S. WILSON, B.S., Assistant Superintendent, MAFES Research Center, Research Support Units

MARILYN WILSON, Senior LAN Systems Programmer, User Services

RAYMOND WILSON, M.S., LAN Systems Analyst, Systems & Networks

ANITA WINGER, B.S., Computer Systems Assistant, Library

FT. WITHERS, JR., B.S., M.S., Head and Research/Extension Professor, Central Mississippi Research and Extension Center

MARILYN L. WOOD, Staff Sergeant, Administrative NCO of Military Science

DIANE D. WOLFE, B.S., M.Ed., Associate Director of Admissions

MINDY M. WOLFE, B.B.A., Coordinator of Distance Education Program Development, Division of Continuing Education

JOEY WOMACK, A.A., B.B.A., Computing Consultant, User Services

JUNXIAO WU, B.S., M.S., Ph.D., Postdoctoral Fellow, Engineering Research Center

LYNN WYMAN, B.P.A., Assistant Manager for Sponsored Programs Accounting, Controller and Treasurer's Office

BENNY L. YARBROUGH, B.S., Landscape Maintenance Supervisor, Campus Landscape

BETTY P. YEATMAN, B.B.A., M.B.A., Financial Aid Counselor, Student Financial Aid and Scholarships

JANE B. YEATMAN, B.S., M.T. (ASCP), Research Assistant II

MEHMET CETIN YUCEER, B.S., M.S., Ph.D., Visiting Research Associate I, Forestry

FANG-YU YUEH, B.Ed., M.S., Research Scientist, DIAL

DON ZANT, C.P.A., C.I.A., C.F.E., B.S., Director, Internal Audit

HELEN K. ZUERCHER, B.A., M.A., Director, International Services Office

CHARLES D. ZUMWALT, JR., B.S., M.S., Research Associate II

LAUREN ZUMWALT, B.S.B.A., C.P.A., Budget Manager, College of Veterinary Medicine

## EMERITI ADMINISTRATIVE PERSONNEL

DURWARD WILLIAM AIKEN, Vice President Emeritus for Student Affairs

WILLIAM M. BOST, Director Emeritus of Mississippi Cooperative Extension Service

ED BUCKNER, Sr. Director Emeritus of Support Services

VERNER HURT, Director Emeritus, Mississippi Agricultural and Forestry Experiment Station

LEWIS F. MALLORY, Vice President Emeritus for Business Affairs

DANIEL W. McCALIP, Comptroller Emeritus

GARNETT J. THOMAS, Administrative Office Emeritus, Mississippi Agricultural and Forestry Experiment Station

## ATHLETIC DEPARTMENT STAFF

LARRY TEMPLETON, B.S., Director Athletics

RICHARD AKINS, B.S., M.Ed., Assistant Strength Coach

REYNAUD ALEXANDER, B.S., M.S., Assistant Track Coach

SHARON ALLEN, B.S., Assistant Women's Basketball Coach

KATHRYN ANDERSON, B.S., M.S., Assistant Women's Soccer Coach

TODD ANDERSON, B.S., Sports Information Assistant

KATHY ARENSEN, B.A., Head Women's Softball Coach

CRISTIAN BADAIE, B.S., Assistant Women's Tennis Coach

BILL BALL, B.S., M.S., Assistant Men's Basketball Coach

CRAIG BERE, B.A., M.S., Assistant Women's Volleyball Coach

RAY BERRYHILL, B.S., M.S., Director of Academics

DAVID BOLES, B.A., M.A., Ed.D., Associate Athletic Director/Student Services

BRENDA BOWLIN, B.S., M.A., Head Women's Volleyball Coach

LINDA BUEHLER, B.S., M.S., Assistant Academic Counselor

WENDY BUTLER, B.S., M.A., Assistant Athletic Trainer

JOHN CADE, B.S., Assistant Media Relations Director

ANN CARR, B.S., M.A., Assistant Academic Counselor

GREG CARTER, B.S., Assistant Men's Basketball Coach

JIM CASE, B.S., M.S., Ed.S., Assistant Baseball Coach

JOHNNIE COOKS, B.S., M.S., Assistant Athletic Director/Administration

GLENN DAVIS, B.S.E., M.E., Assistant Football Coach



JOE DIER, B.S., Assistant Sports Information Director  
 BROCK DULANEY, B.B.A., M.Ed., Video Coordinator  
 JOE LEE DUNN, B.S., Defensive Coordinator  
 DON EDWARDS, B.S., Assistant Coordinator/Game Operations  
 SHARON FANNING, B.S., M.S., Head Women's Basketball Coach  
 WILLIAM FINDLEY, B.S., M.E., Head Women's Soccer Coach  
 STACEY FRANKLIN, B.S., Assistant Women's Basketball Coach  
 GERARD FREMIN, B.S., M.S., Assistant Football Coach  
 BRENT FREY, B.S., Assistant Coordinator/Game Operations  
 JEANNINE GAUDREAU, Assistant Women's Softball Coach  
 NICKY GOETZE, B.S., Head Men's Golf Coach  
 DEBBY GOLSON, Administrative Assistant  
 ARTHUR "PETE" GOODWIN, B.S., M.A., Assistant Women's Softball Coach  
 MIKE GRANT, B.S., M.S., Head Strength Coach  
 SYLVAIN GUICHARD, B.S., Assistant Men's Tennis Coach  
 JOHN HENDRICK, B.S., Assistant Football Coach  
 TODD HUNT, B.B.A., M.Ed., Director of Humphrey Coliseum and Athletic Concession  
 ANDY JACKSON, B.S., Head Men's Tennis Coach  
 MICHELLE JENKINS, B.S., M.S., Assistant Academic Counselor  
 SAMYE JOHNSON, B.S., M.Ed., Associate Athletic Director/Women's Sports  
 STRATON E. KARATASSOS, M.Ed., Assistant Athletic Director/Development  
 GEORGE T. KERIN, B.S., Assistant Compliance Officer  
 ROBERT KIRBY, B.S., Assistant Men's Basketball Coach  
 LUANNE LAIRD, Assistant Ticket Manager  
 TRACY LANE, B.S., M.Ed., Head Women's Tennis Coach  
 JOSEPH LOGAN, JR., B.S., M.S., Assistant Athletic Trainer  
 BRENDA LUCAS, Assistant Ticket Manager  
 BYRON MCCALL, B.S., Administrative Assistant  
 JOCELYN MCGILBERRY, B.S., Assistant Women's Basketball Coach  
 DUNCAN MCKENZIE, B.S., B.A., Associate Athletic Director/Internal Operations

MARY MCLENDON, B.S., M.S., Assistant Athletic Trainer  
 PAT MCMAHON, B.A., M.Ed., Head Baseball Coach  
 CARLA MILLARD, B.S., Media Relations Assistant  
 GEORGE MILLER, B.S., M.A., Coordinator Tutorial Program  
 STEPHEN P. MOCK, B.S., Head Athletic Trainer  
 MIKE NEMETH, B.S., M.A., Associate Athletic Director/ Media Relations  
 BRENDA NEUBAUER, B.S., M.Ed., Coordinator of Services, Multi-Purpose Building  
 JEFFREY NEUBAUER, B.S., M.S., Operations Coordinator, Multi-Purpose Building  
 NICOLE OAKES, B.S., Assistant Academic Counselor  
 SARA OSWALT, Assistant Ticket Manager  
 TOMMY RAFFO, B.A., M.A., Assistant Baseball Coach  
 GEORGE WESLEY REED, M.E., Associate Athletic Director/ Development  
 KATHERINE RICE, B.S., Administrative Assistant  
 DAVID ROSINSKI, B.S., M.S., Associate Sports Information Director  
 CHRISTI SANDERS, B.S., Head Women's Golf Coach  
 AL SCHMIDT, B.S., M.S., Head Track Coach  
 JACKIE SHERRILL, B.A., Head Football Coach  
 PHIL SILVA, B.S., Equipment Manager  
 SHARON SIMMONS, B.S., M.S., Assistant Track Coach  
 MELVIN SMITH, B.S., B.A., Assistant Football Coach  
 RICK STANSBURY, B.S., M.A., Head Men's Basketball Coach  
 CRAIG STUMP, B.S., M.Ed., Assistant Football Coach  
 BOBBY TOMLINSON, B.S., Coordinator of Game Operations  
 TONY TOMMASI, B.A., Assistant Women's Soccer Coach  
 JIM TOMPKINS, B.S., M.S., Assistant Football Coach  
 JIM VANHOOTEGEM, B.A., Assistant Track Coach  
 PATRICIA WALLACE, Ticket Manager  
 RANI WHITSON, B.S., Assistant Women's Volleyball Coach  
 DAVID WILSON, B.S., Assistant Football Coach  
 PHILLIP "SPARKY" WOODS, B.S., Offensive Coordinator  
 MILDRED YEATMAN, Assistant Business Manager

## V. OTHER DIVISIONS, UNITS, and AGENCIES

### A. MAJOR DIVISIONS and STAFFS

#### ADMINISTRATIVE AFFAIRS

Responsible for Human Resources management; operation and maintenance of the physical plant; campus landscape operations; support services; the operation of auxiliary enterprises, including the laundry, dining services and University-owned faculty and staff housing.

**W. Gaddis Hunt, B.S. M.Ed.**, Chief Administrative Officer

#### BUDGET and FINANCIAL OFFICE

Responsible for receiving, managing, and disbursing funds from all sources; for fiscal planning and the development of budgets; and control of purchasing.

**J. Wayne Bland, B.S., M.C.S.**, Controller and Treasurer

**C. Wayne Reed, B.S.**, Assistant Chief and Financial Officer

#### CONTROLLER and TREASURER'S OFFICE

The Controller and Treasurer's Office primary mission is to (1) provide financial service to the University community and its customers, (2) protect the University's financial resources and (3) insure compliance with both internal and external financial regulations, policies and procedures.

**J. Wayne Bland, B.S., M.C.S.**, Controller and Treasurer  
**Ronald S. Brown, B.S., C.P.A.**, Associate Controller  
**Betty Gentry, B.S.**, Assistant Controller for Treasury Services  
**Jane Kinard, B.P.A.**, Assistant Controller, Accounts Receivable, Collections  
**Denise Peebles, B.P.A., M.B.A.**, Assistant Controller, Sponsored Programs Accounting  
**Ken Stewart, B.S., M.C.S.**, Associate Controller for Budget, Records, Reporting & Payroll  
**Sonja Beavers, B.B.A., M.S.A.**, Assistant Manager for Student Account Services  
**Amy Burchfield, B.S., M.S., C.P.A.**, Financial Reporting Manager  
**Criss Bell, B.P.A.**, Staff Accountant  
**Lori Bulliwinkel, B.P.A.**, Financial Records Accountant

**June Dempsey, B.P.A.**, Assistant Controller for Budget & Payroll  
**Cynthia B. Hartsell, B.B.A., CPA**, Assistant Financial Reporting Manager  
**Susan S. Heath, B.P.A.**, Budget & Payroll Processing Manager  
**Cedric Henson, B.P.A.**, Cost Analyst  
**Shirley Hill, B.S.**, Accounts Receivable Manager  
**Diane Huntley, B.B.A.**, Sponsored Programs Accountant  
**Brenda Jones, B.S.B.A.**, Disbursement Manager  
**Pam Kilby, B.S.**, Disbursement Accountant  
**Donna MacNeill, B.P.A.**, Payroll Reporting & Adjustment Manager  
**W. Joe Myers, B.S.B.A.**, Account Services Manager  
**Louise White, B.S.**, Sponsored Program Manager  
**Lynn Wyman, B.P.A.**, Assistant Manager Sponsored Programs Accounting

#### CONTINUING EDUCATION

(For functions, organizations, and programs of the Division of Continuing Education, see PART II. THE COLLEGES and SCHOOLS.)

**Clayborne D. Taylor, P.E., Ph.D.**, Dean of Continuing Education

### FOREST and WILDLIFE RESEARCH CENTER

The Forest and Wildlife Research Center (FWRC) was authorized by the Mississippi Legislature with passage of the Renewable Natural Resources Act of 1994. This Act consolidated within a single administrative unit at Mississippi State University programs of research which focus on the forest, wildlife and fisheries resources of Mississippi. To this end the FWRC was assigned the mission to conduct research and technical assistance programs relevant to the efficient management and utilization of the forest, wildlife and fisheries resources of the state and region and the protection and enhancement of the natural environment associated with these resources. Within the scope of this mission, the FWRC has responsibilities for developing through research: (1) natural resource management systems which ensure the optimal production of goods and services while protecting and enhancing the forest and aquatic environments; (2) harvesting and manufacturing technologies that promote the efficient utilization of the state's timber resource; (3) biological and economic data bases which address specific problems and opportunities related to the state's forest and wildlife resources, including environmental issues related to those resources; and (4) policy analyses which provide options for renewable resources management and use in Mississippi.

The research center is composed of the Department of Forestry, the Department of Wildlife and Fisheries, Department of Forest Products and the Forest Products Laboratory. The agency's base research program involves approximately 100 separate research activities and covers project work in 14 research areas in forestry, forest products, wildlife, and fisheries. This research program serves a diverse list of clients which includes forest landowners, forest-based industries, other state agencies, and various forest resources user groups. Faculty in the Forest and Wildlife Research Center hold joint appointments for teaching purposes in the College of Forest Resources.

#### Forest and Wildlife Research Center

**Bob L. Karr, B.S., M.S., Ph.D.**, Interim Director  
**Charles E. Burkhardt, B.S.**, Forest Supervisor  
**Alan F. Brown, B.S.**, Coordinator of Continuing Education

#### Forestry

**Douglas P. Richards, B.S., M.F., Ph.D.**, Department Head  
**Keith L. Belli, B.S., M.S., Ph.D.**, Professor  
**William C. Booth, B.S.**, Research Associate I  
**William W. Elam, B.S., Ph.D.**, Professor Emeritus  
**David L. Evans, B.S., M.S., Ph.D.**, Associate Professor  
**Andrew W. Ezell, B.S., M.S., Ph.D.**, Professor  
**R. Rodney Foil, B.S.F., M.F., D.F.**, Forester Emeritus  
**Laura A. Grace, B.S., M.S., Ph.D.**, Associate Professor  
**Stephen C. Grado, B.A., B.S., M.A., Ph.D.**, Associate Professor  
**Donald L. Grebner, B.S., M.F., M.A., Ph.D.**, Assistant Professor  
**John E. Gunter, B.S., M.S., M.B.A., Ph.D.**, Professor  
**John D. Hodges, B.S., M.S., Ph.D.**, Professor Emeritus  
**Amanda L. Husak, B.S., M.S.**, Visiting Research Scientist  
**Samuel B. Land, B.S.F., M.S., Ph.D.**, Professor  
**Andrew J. Londo, B.S., M.S., Ph.D.**, Assistant Professor

**Thomas G. Matney, B.S., M.S., Ph.D.**, Professor  
**James E. Moak, B.S.F., M.F., Ph.D.**, Professor Emeritus  
**Ian A. Munn, B.A., M.B.S., Ph.D.**, Professor  
**Robert C. Parker, B.S., M.S., Ph.D.**, Associate Professor  
**Scott D. Roberts, B.S., M.F., Ph.D.**, Associate Professor  
**Roy D. Ross, B.S.F., M.F., Ph.D.**, Associate Professor Emeritus  
**Emily B. Schultz, B.S., M.S., Ph.D.**, Associate Professor  
**William B. Stuart, B.S., M.F., Ph.D.**, Professor  
**William F. Watson, B.S.F., M.S., Ph.D.**, Professor Emeritus  
**John B. Auel, B.S., M.S.**, Research Associate I  
**Janet C. Dewey, B.S., M.S.**, Research Associate III  
**Patrick A. Glass, A.A., B.S., M.S., Ph.D.**, Research Assistant I  
**Jonathan Paul Jeffreys, B.S.**, Research Associate I  
**H. Alexis Londo, B.S.F., M.S.F.**, Research Associate I  
**John W. McCombs, B.S., M.S.**, Research Associate I  
**Juanita A. Mobley, B.S., M.S.**, Research Associate I  
**Clayton B. Altizer, B.A., M.S.**, Research Associate I

#### Forest Products Laboratory

**Abdolhamid Borazjani, B.S., M.S., Ph.D.**, Environmental Microbiologist

**Terry L. Amburgey, B.S., M.S., Ph.D.**, Wood Deterioration Specialist  
**H. Michael Barnes, B.S., M.S., Ph.D.**, Wood Scientist  
**S. V. Diehl, B.S., M.A., Ph.D.**, Environmental Microbiologist  
**Steve L. Hunter, B.S., M.S., Ph.D.**, Manufacturing Systems Engineering  
**Brian K. Mitchell, B.S.**, Research Associate I  
**Gary B. Lindsey, B.S.**, Research Associate I  
**Mark S. Maupin, B.S.**, Research Associate I  
**Thomas C. McElroy, B.S., M.S., Ph.D.**, Postdoctoral Associate  
**Kimberly Tarlton, B.S.**, Research Associate I  
**Darrel D. Nicholas, B.S., M.S., Ph.D.**, Wood Scientist  
**Terry Sellers, Jr., B.S., M.S., Ph.D.**, Wood Composites  
**Leonard L. Ingram, Jr., B.S., Ph.D.**, Wood Chemist  
**Moon G. Kim, B.S., Ph.D.**, Wood Products Scientist  
**Tor P. Schultz, B.S., M.S., Ph.D.**, Natural Products Chemist  
**R. Daniel Seale, B.S., M.S., Ph.D.**, Wood Scientist  
**Phillip H. Steele, B.S., M.S., Ph.D.**, Wood Scientist  
**Jilei Zhang, B.S., M.S., Ph.D.**, Wood Scientist  
**Jeanie K. McNeel**, Coordinator of Administrative Services I  
**Jason Leng, B.S., M.S.**, Research Associate III  
**Harold A. Stewart, B.S., B.S.F., M.W.T.**, Assistant Research Professor  
**David A. Strobel, B.S.**, Research Associate III  
**Susmita V. Parikh, B.S., M.S.**, Research Associate III  
**M. Lynn Prewitt, B.S., M.S., Ph.D.**, Research Associate III  
**M. Curry Templeton, B.S., M.S.**, Research Associate II  
**Amy W. Garrard, B.S., M.S.**, Research Associate III  
**Craig Boden, B.S., M.S.**, Research Associate II  
**Jerome Cooper, B.S., M.S.**, Research Associate II  
**Linda K. Jones, B.S.**, Research Associate II  
**George D. Miller, Jr., B.S., M.S.**, Research Associate II  
**Mary F. Hannigan, B.S., M.S.**, Research Assistant II  
**Alex Salenikovich, B.S., M.S., Ph.D.**, Post Doctoral Assistant  
**Michael G. Sanders, B.S.**, Research Associate II  
**Linda S. Sites, B.S.**, Research Associate II

**Robert E. Tackett, B.S.**, Research Associate II  
**Amy Rowlen, B.A., M.B.A.**, Research Associate I  
**Franklin Quin, Jr., B.S., M.S.**, Research Associate I

#### Wildlife and Fisheries

**Bruce D. Leopold, B.S., M.S., Ph.D.**, Wildlife Biologist and Department Head  
**Dale H. Arner, B.S., M.S., Ph.D.**, Professor Emeritus  
**Loren W. Burger, B.S., M.S., Ph.D.**, Wildlife Biologist  
**Stephen Demarais, B.S., M.S., Ph.D.**, Associate Wildlife Biologist  
**Louis R. D'Abramo, B.A., M.S., Ph.D.**, Aquaculturalist  
**Eric D. Dibble, B.S., M.S., Ph.D.**, Associate Fisheries Biologist  
**Martin W. Brunson, B.S., M.S., Ph.D.**, Fisheries Biologist  
**Donald C. Jackson, B.S., M.S., Ph.D.**, Fisheries Biologist  
**Leandro E. Miranda, B.S., M.S., Ph.D.**, Fisheries Biologist  
**Harold L. Schramm, B.S., M.S., Ph.D.**, Fisheries Biologist  
**Harry A. Jacobson, B.S., M.S., Ph.D.**, Professor Emeritus  
**Jeanne C. Jones, B.S., M.S., Ph.D.**, Associate Wildlife Biologist  
**Richard M. Kaminski, B.S., M.S., Ph.D.**, Wildlife Biologist  
**Bruce D. Leopold, B.S., M.S., Ph.D.**, Wildlife Biologist  
**James E. Miller, B.S., M.S., Ph.D.**, Wildlife Biologist  
**Stephen I. Dinsmore, B.S., M.S., Ph.D.**, Assistant Wildlife Biologist  
**Kevin M. Hunt, B.S., M.S., Ph.D.**, Assistant Wildlife Biologist  
**Ben C. West, B.S., M.S., Ph.D.**, Assistant Wildlife Biologist  
**Francisco J. Vilella, B.S., M.S., Ph.D.**, Associate Wildlife Biologist  
**John A. Hargreaves, B.S., M.S., Ph.D.**, Associate Aquaculturalist  
**Anita M. Kelly, B.S., M.S., Ph.D.**, Assistant Aquaculturalist  
**Richard B. Minnis, B.S., M.S.**, Research Scientist I  
**Bronson K. Strickland, B.S., M.S.**, Research Assistant I  
**Johnnie K. Dawkins**, Facilities Coordinator

## MISSISSIPPI AGRICULTURAL and FORESTRY EXPERIMENT STATION

The Mississippi Agricultural and Forestry Experiment Station operates under mandates of the U.S. Congress (1862 and 1887) and the Mississippi Legislature (1888) for the purpose of conducting scientific research in agriculture, forestry, and related sciences. The foundation mission of MAFES is to improve the state's agricultural and aquacultural industries and the well-being of all Mississippians.

The success of agricultural research in the first 100 years has resulted in a highly complex food and fiber system that is the envy of the world — but one that is also characterized by the continuing emergence of new problems and opportunities. Thus, the foremost challenge of the Experiment Station is maintaining a continuum of research discovery and education to keep Mississippi's agricultural producers viable and competitive in a global economy.

**Experiment Station Headquarters** (MSU Campus) The Leveck Animal Research Center, the Bearden Dairy Research Center, the Plant Science Research Center and the Black Belt Branch Station at Brooksville provide field laboratories for on-campus scientists and represent all of the important plant and animal commodities produced in the State.

On-campus departments conducting research to meet these needs are: Agricultural Economics, Agricultural and Biological Engineering, Plant and Soil Sciences, Animal and Dairy Sciences, Biochemistry and Molecular Biology, Entomology and Plant Pathology, Food Science and Technology, Human Sciences, Poultry Science, the Social Science Research Center, Veterinary Medicine, and the aquaculture unit of wildlife and fisheries.

Off-campus activities are conducted through four regional research and extension centers and associated branch experiment stations in the various soil and types-of-farming areas of the State. Research efforts involve cooperative projects with scientists from on-campus departments and other branch stations, as well as collaboration with state and federal agencies, producers, and private industry sponsors.

**Central MS Research and Extension Center:** The Brown Loam Branch Station near Raymond carries out an extensive program of beef cattle crossbreeding and management, forage, and field crop studies. At the Coastal Plain Branch Station near Newton, long-standing programs of dairy and field crops research blend with studies of nutrient management. The Truck Crops Branch Station at Crystal Springs serve a populous urban-rural area with research on both commercial greenhouses and home garden fruit and vegetable crops and ornamentals.

**Coastal Research and Extension Center:** Research at the Coastal Aquaculture Unit at Gulfport focuses on production of freshwater species, estuarine species, and other fishery resources that have potential for production in commercial enterprises and includes redfish, hybrid striped bass, and freshwater shrimp. The Seafood Processing Research Laboratory at Pascagoula was established in cooperation with the National Marine Fisheries Service and operates to develop processing technologies to enhance the utilization of later marine fishery resources and improve seafood quality and safety. The South MS Branch Station units at Poplarville, White Sand and McNeill conduct research on beef cattle, field and forage crops, agro-forestry, and ornamentals.

**Delta Research and Extension Center:** The Delta Branch Station at Stoneville employs an integrated, multidisciplinary approach to discover, develop, and demonstrate new technologies and improved germplasm for enhanced profitability and productivity of agricultural enterprises in the Yazoo River-Mississippi River Delta. Its research programs on the major crop and animal production systems of the Delta Counties (cotton, rice, soybean and catfish) are recognized nationally and internationally. Both the Southern Regional Aquaculture Center and the National Warmwater Aquaculture Research Center are located here.

**North MS Research and Extension Center:** The North MS Branch Station at Holly Springs emphasizes research on dairy production, soil erosion management, and crop production systems using conservation tillage methods suitable for the soils of the region. The Horticulture Research & Education Unit at Verona conducts cultivar evaluations and cultural practices studies with vegetable, ornamental, and medicinal herbs crops. The Northeast MS Branch Station at Verona conducts conservation tillage systems research and variety evaluations for the major field crops of the region. The Pontotoc Ridge-Flatwoods Branch Station at Pontotoc emphasizes sweet potato breeding and production, peaches and other fruits, field crops, and swine production. The Prairie Research Unit at Prairie focuses on utilizing forages in the economic and efficient production of beef, with emphasis on herd health management and improved conception and nutrition.

Extensive collaborative relationships with other state and federal agencies enhance the productivity and applicability of MAFES' research programs on-campus and off-campus. Representative participants include USDA/Agricultural Research Service (Small Grain Nurseries, Pasture Research Laboratory, Forage Research Unit, Corn Research Unit, Small Fruits Research Station, Southern Field Crop Insect Management Laboratory, Cotton Physiology and Genetics Research Unit, Southern Weed Science Laboratory, Field Crops Mechanization Research Unit, Soybean Production Research Unit, U.S. Cotton Ginning Laboratory, Soil Sedimentation Laboratory and Boll Weevil Research Laboratory); USDA/Natural Resources Conservation Service (Artificial Wetlands and Global Change Monitoring Station); NOAA/National Weather Service; MS Department of Agriculture and Commerce; MS Department of Wildlife, Fisheries, and Parks; USDA/APHIS Animal Damage Control Unit; USDA/Forest Service (Southern Hardwoods Laboratory); Tennessee Valley Authority; Mississippi Power Company; U.S. Army Corps of Engineers; and U.S. Department of Commerce (National Marine Fisheries Service).

Research programs of MAFES are both basic and applied. Basic research deals with long-range fundamental opportunities or problems in agriculture and the development of new knowledge. Applied research is directed toward early solution of problems of immediate concern facing farmers, processors and marketers of agricultural products, and all citizens of the state, whether urban or rural.

Research facilities to support the broad scope of research conducted by MAFES include chemical, biological, engineering, and computer laboratories; greenhouses and growth chambers; land for crops, orchards, and forests; pastures and building facilities for beef and dairy cattle, sheep, hogs, and poultry; ponds and related facilities for aquaculture; and the farm machinery and other equipment required to enable our scientists to conduct effective research programs. In addition, facilities and personnel of ARS, USDA and other federal and state agencies are strategically co-located to augment the total research effort.

While the primary mission of MAFES is agricultural and aquacultural research for the State, its presence on the campus adds strength to both the teaching and extension programs. Most department heads and many other staff members have joint appointments involving teaching, research, and/or extension activities, and teach or administer instructional programs in agriculture, engineering, and art and sciences. Agriculture students at Mississippi State University have the opportunity to observe and participate in research, and MAFES provides graduate research assistantships and other part-time employment for many students.

MAFES operates on state and federally appropriated funds supplemented by income from sales of products from the research projects. Grants and contracts from private industry and from other sources provide additional funds.

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## MISSISSIPPI STATE UNIVERSITY EXTENSION SERVICE

The Mississippi State University Extension Service provides research-based educational programs and information in agriculture and natural resources, 4-H youth development, family and consumer education and enterprise and community resource development to improve the economic, social, and cultural well-being of all Mississippians.

The Smith-Lever Act of 1914 established the Cooperative Extension System, a publicly funded, informal educational system that links the United States Department of Agriculture, the land-grant university system, and individual counties. As the off-campus educational arm of Mississippi State University, Extension provides current research and educational information in all 82 counties. Mississippi State University Extension Service is also a cooperating partner with Alcorn State University, the 1890 land-grant institution in Mississippi.

Extension's overall purpose is education-education that will empower people to make intelligent decisions relating to their vocations, their families, and their environment. Extension's unique interdisciplinary perspective enables the organization to make a real difference in the lives of Mississippians.

Mississippi State University Extension Service is, and will continue to be, a leader for positive change for individuals, families, and communities by: providing research and education in a practical and applicable way; using the latest technology and teaching techniques to serve clients; developing and using volunteers to help disseminate programs and information; cooperating with other groups and agencies; and maintaining a culturally diverse staff responsive to needs of various audiences at all socio-economic levels.

The educational efforts of the Extension Service are conducted primarily through local Extension agents in each county. They use a variety of educational methods and techniques and the most current delivery technology, such as the World Wide Web, in disseminating research-based information.

The county staff is supported by a team of state and area specialists who are responsible for gathering, interpreting, and disseminating the latest research and technology developed by Mississippi Agricultural and Forestry Experiment Station (MAFES), Forest and Wildlife Research Center (FWRC), College of Veterinary Medicine (CVM), USDA research agencies, and other legitimate research institutions across the nation. In performing these functions, the subject matter specialists are in constant contact with research scientists to ensure that they are current on the latest research findings and technology.

We believe that agriculture and its related enterprises are of major economic importance in Mississippi, and we will direct programs and resources to reflect this importance. We also believe that quality of life is affected by the reciprocal relationship between people and their environment will continue to emphasize environmental issues. We recognize the critical need for human resource development and will continue to search for ways to assist individuals, families, youth and communities cope with an ever-changing society.

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**Emily Ray Knight, B.S.**, Program Assistant

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**Stephen G. Dicke, B.S., M.S., Ph.D.**, Extension Professor, Forestry  
**David M. Ingram, B.S., M.S., Ph.D.**, Associate Extension/Research Professor - Plant Pathology  
**Deborah Knight, B.S.**, District Director, Family and Youth, Southwest District  
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**Marina Presley**, Bilingual Adult Education Coordinator, Southwest District  
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\*\***Richard G. Snyder, B.S., M.S., Ph.D.**, Extension Research Professor, Horticulture  
**Norman L. Winter, B.S., M.S.**, Extension Instructor, Ornamental Horticulture

### Coastal Research and Extension Center, Biloxi

\*\***C. David Veal, B.S., M.S., Ph.D.**, Head, Coastal Research and Extension Center and Professor of Agricultural and Biological Engineering  
\*\***David D. Burrage, B.S., M.A.**, Marine Resources Extension Professor  
\*\*\*\***Robert F. Brzuszek, B.S., M.S.**, Senior Curator, Crosby Arboretum, Picaune



**John W. Guyton, III, B.S., M.Ed., Ed.D.**, Associate Extension Professor, Environmental Education  
**\*\*Cathy Z. Holloman, B.S., M.S.**, Associate Environmental Scientist  
**\*\*Mark W. LaSalle, B.S., M.S., Ph.D.**, Marine Resources Associate Extension Professor, Estuarine Ecology  
**Janet K. Lukens, B.S., M.B.A.**, Consumer Management Extension Professor  
**\*\*Benedict C. Posadas, B.S., M.S., Ph.D.**, Marine Resources Assistant Economist  
**John H. Braswell, B.S., M.S., Ph.D.**, Associate Extension Professor  
**Linda L. Saucier**, Business Manager

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**Sherrie E. Cox, B.B.A., M.B.A.**, Project Manager  
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**James R. Loper, B.S., M.S.**, Systems Analyst III  
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**Robert E. Gholston, B.S.**, Network Project Assistant  
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**Patty M. Lincoln, B.S.**, Senior Programmer Analyst  
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**Steven E. Jones, A.A.**, Computer Hardware Support Assistant  
**Debbie S. Rivers**, Technical Assistant  
**Steve Hankins**, Project Assistant  
**Jason Musselwhite**, Computer Inst. Technologist  
**Brenda A. Bell**, Programmer Analyst

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**Robert F. Brzuszek, B.S., M.L.A.**, Senior Curator

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**Clarissa Balbalian, B.S., M.S.**, Diagnostician/Laboratory Manager  
**Elmo Collum, B.S.**, Extension Associate II; Pesticide Education Coordinator, Raymond  
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**Blake Layton, Jr., B.S., M.S., Ph.D.**, Extension Professor  
**John Lyndon Long, B.S.**, Program Assistant  
**Andrew Milling**, Pest Management Technician, Decatur  
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**Sherry Parker**, Assistant Extension/Research Professor, Entomology  
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**Anna F. Hood, B.S., M.S., Ph.D.**, Extension Professor  
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**Linda Mitchell, B.S., M.Ed.**, Interim District Program Director Family and Youth, Northeast District  
**Joseph R. Rhea, M.Ed.**, District Director-ANR and Assistant Head, North Mississippi Research and Extension Center Northeast District  
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**Mac A. Blaine, B.S., M.S., Ph.D.**, Extension Professor

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**Karl K. Crouse, B.S.A., M.S., Ph.D.**, Assistant Extension Professor

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\*\***David H. Tatum, B.S., M.S., Ph.D.**, Extension/Research Professor

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**Scott A. Samson, B.A., M.A., Ph.D.**, Associate Professor

**Jim Steil, B.S., M.S.**, Instructor

**Mary Love Tagert**, Extension Associate

#### Sea Grant Advisory Services

\*\***C. David Veal, B.S., M.S., Ph.D.**, Leader, Sea Grant, and Head, Coastal Research and Extension Center, Biloxi

**David D. Burrage, B.S., M.A.**, Extension Professor

\*\***Mark W. LaSalle, B.S., M.S., Ph.D.**, Associate Extension Professor

\*\***Benedict C. Posadas, B.S.B.A., M.A., Ph.D.**, Assistant Extension/Research Professor

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\*\***Bonnie P. Teater**, Assistant to Director, SRDC

**Emily E Shaw**, Writer/Editor

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**Martin W. Brunson, B.S., M.S., Ph.D.**, Leader and Extension Specialist

\*\*\*\*\***Loren W. Burger, B.S., M.S., Ph.D.**, Professor

**C. Jarod Quillen, B.S.**, Wildlife Extension Assistant

**Benjamin West, B.S., M.S., Ph.D.**, Assistant Extension Professor

\* CVM  
\*\* MAFES/MSU  
\*\*\* MAFES/CVM  
\*\*\*\* FWRC/MSU  
\*\*\*\*\* CALS/MSU

#### COUNTY PERSONNEL

Each of the 82 counties has a County Extension Staff who provides economics, 4-H -youth, and community development. In addition, there are 66 program assistants, most of whom work part-time in the nutrition education program. The total number of professional and paraprofessional employees at the county level is 336.

## UNIVERSITY LIBRARIES

The University's major library collections and functions are housed in the Mitchell Memorial Library, which occupies a central location on the campus. In addition to providing more than 1,757,536 volumes selected to support the teaching and research efforts of students and faculty, the library subscribes to more than 16,202 periodicals. The Special Collections Department contain materials of historical value, including 491 manuscript collections, church and business records. The Congressional and Political Research Center houses the papers of a number of public figures important to Mississippi - most notably those of U.S. Senator John C. Stennis. The Archives of the University includes papers of the University's presidents and other officers, college, division and departmental records, faculty papers, records of committees and university related organizations. The Library provides an environment for education technology activities and a learning center of techniques related to digital multimedia in the Instructional Materials/Media Center. The Library's Computer Commons lab is available twenty-four hours.

The School of Architecture and the College of Veterinary Medicine maintain their own library holdings but operate as branches of Mitchell Memorial Library.

**Frances N. Coleman**, Dean of Libraries

**John Cuickshank**, Veterinary Medicine Librarian

**Emilie C. White**, Architecture Librarian

**Kathrin Dodds**, Jackson Center Librarian and Information Specialist

**Melanie Thomas**, Meridian Campus Librarian and Information Specialist

## UNIVERSITY REGISTRAR

The Office of the University Registrar is responsible for supervising the scheduling of classes, managing the registration of students in courses, recording grades, and maintaining academic records and transcripts of all students and alumni of the University.

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**Sharon Nobles, B.A., M.A.**, Interim Assistant Registrar

**Lisa G. Holloway**, Student Information Systems Coordinator

**Traci N. Mongeon, B.S. M.S.**, Curriculum and Scheduling Specialist

## B. INTERNAL SERVICE UNITS

### INFORMATION TECHNOLOGY SERVICES

The mission of Information Technology Services (ITS) is to enhance learning, service, and research through an advanced information technology environment. The mission is fulfilled through the four operational units within ITS - Systems & Networks, User Services, Information Systems, and Telecommunications. ITS supports and operates the University's voice, data, video and wireless networks and provides a broad array of computing and information technology resources and services for students, faculty, and staff, including Internet and INternet2 access. The ITS Help Desk is available to answer questions and help with computer-related problems. A comprehensive suite of workshops is offered to aid faculty and staff in learning new hardware and software. See [www.its.msstate.edu](http://www.its.msstate.edu) for more information.

**Mike Rackley, B.S., M.C.S.**, Head, Information Technology Services

**Mike Argo, B.S., M.S.**, Security & Compliance Officer

**Danny Kemp, B.S., M.B.A.**, Director, Information Systems

**Timothy Griffin, B.S.**, Director, Systems & Networks

**Tom Lindsay, B.P.A., C.P.A.**, Director, Telecommunications

**Matt Raven, B.S., M.S., Ph.D.**, Director, User Services

## OFFICE of INSTITUTIONAL RESEARCH

The Office of Institutional Research assimilates, analyzes, and reports external information needed for orderly planning and provides background information needed in the formulation of policy decisions to the President, Vice Presidents, and others.

The office analyzes and prepares reports to the President, Vice Presidents, Deans and others, relevant to evaluating faculty workload, student credit hours produced and departmental data that are vital in the allocation of university resources.

The office assists the university community through its research, consulting, and survey activities. A major component of these activities is the Evaluation and Test Service. This service, utilizing optical scanning equipment, scores and analyzes more than 150,000 faculty-constructed tests and processes an equal number of questionnaires and student evaluation of instruction each year.

The office is a primary contact with State and Federal agencies, educational groups, other institutions of higher education, and individuals for the purpose of information and data exchange. A major activity of the office is maintaining a responsive and productive relationship with these external entities.

**Julie C. Fulgham**, Interim Director  
**Kathy A. Huffman**, Coordinator of Reports and Analyses  
**Elaine B. Turner**, Administrative Secretary

**Steven Barlow**, Data Analyst  
**Vanessa McTaggart**, Evaluation Assistant  
**Ling Zhao**, Data Analyst

## POLICE DEPARTMENT

It is the mission of the Police Department to support the university and its community by providing effective and efficient services that assist in establishing a safe and secure environment.

The department is staffed 24 hours a day with highly trained officers to enforce the laws, and university rules and regulations. Additionally, police officers actively work with the campus community in providing crime prevention information and addressing crime, safety, and security issues.

## C. RESEARCH UNITS

### OFFICE of the VICE PRESIDENT for RESEARCH

Office: 617 Allen Hall

The Office of Research is the administrative unit for the coordination of all basic and applied research of the University in the areas of Architecture, Biological and Physical Sciences, Education, Engineering, Business and Economics, Humanities and the Social Sciences. It is composed of the following: **Intellectual Property and Technology Licensing, Laboratory Animal Veterinarian, Radvanyi Chair in International Studies, Regulatory Compliance Office, Sponsored Programs Administration, the Mississippi State Chemical Laboratory, and Centers and Institutes:** Center for Advanced Energy Conversion, Center for Advanced Vehicular Systems, Center for Educational and Training Technology, Center for Safety and Health, Center for Science, Math and Technology, Electron Microscope Center, Remote Sensing Technologies Center, Research and Curriculum Unit, Science and Technology Research Center, Social Science Research Center (Mississippi Alcohol Safety Education Program), T.K. Martin Center for Technology and Disability, Transportation Research Center, Water Resources Research Institute. In addition, there are separately organized research units in the various schools and colleges: **School of Architecture** (Architecture Research-Small Town Center, Jackson Community Design Center), **College of Arts and Sciences** (Biological and Physical Science Research Center, Cobb Institute of Archaeology, Institute for the Humanities, University/Industry Chemical Research Center), **College of Business and Industry** (Division of Business Research, Bureau of Business Services, Center for Insurance Loss Control), Technology Resource Institute for Business and Engineering, **College of Education** (Bureau of Educational Research and Evaluation, Center for Educational Partnerships, Rehabilitation Research and Training Center for Blindness and Low Vision, Writing-Thinking Institute), **College of Engineering** (Diagnostic Instrumentation and Analysis Laboratory, Engineering Research Center, Global Center for Desiccant Technology, High Voltage Laboratory, Industrial Assessment Center, Microsystems Prototyping Laboratory, Mississippi Energy Research Center, Raspet Flight Research Laboratory).

Interdisciplinary research is promoted and coordinated by the Office of Research. Teams are assembled and proposals, projects, and programs are developed for research opportunities. The Directors for Centers and Institutes and Sponsored Programs Administration serves to help assemble teams of experts in broad areas.

Mississippi State University is a participating institution of the Mississippi-Alabama Sea Grant Consortium, a consortium of Mississippi and Alabama universities and the Gulf Coast Research Laboratory, it is a member institution of the Oak Ridge Associated Universities, the Southeastern Universities Research Association, and the Mississippi Academy of Sciences.

With a core of excellent scientists, engineers, and economists, aided by numerous graduate research assistants, Mississippi State University has contributed to the economic and industrial growth of the State. Extensive resources are available to assist economic, industrial, and governmental organizations desiring help in discovery, design, and the development of new products. Research, graduate education, and undergraduate education become the three segments of learning pursued in a university setting. Each of these contributes to the other, making possible a balanced program which provides the State with research oriented graduates as well as new basic knowledge necessary for growth. The Office of Research and the Mississippi Agricultural and Forestry Experiment Station work together and exchange ideas and information in the performance of their missions to do basic and applied research contributing to the total industrial and agricultural development of Mississippi.

**Jonathon W. Pote, Ph.D.**, Interim Vice President for Research  
**Sandra H. Harpole, Ph. D.**, Interim Associate Vice President for Research

**Donald Trotter**

## OAK RIDGE ASSOCIATED UNIVERSITIES (ORAU)

Since 1949, students and faculty of Mississippi State University have benefitted from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 85 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education, the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the *ORISE Catalog of Education and Training Programs* which is available at <http://www.orau.gov/orise/regd.htm>, or by calling either of the contacts below.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scientist Program, and various services to chief research officers.

For more information about ORAU and its programs, contact:

**Jonathon W. Pote, Ph.D.**, ORAU Counselor for MSU (662-325-3570)

**Monnie E. Champion**, ORAU Corporate Secretary (423-576-3306); or  
Visit the ORAU Home Page (<http://www.ora.gov>)

## INTELLECTUAL PROPERTY and TECHNOLOGY LICENSING (IPTL)

Office: 306 Bowen Hall

The mission of the Office of Intellectual Property and Technology Licensing is the identification, protection, marketing, and licensing of intellectual properties developed by Mississippi State University faculty, staff, and students. This mission originates from Public Law 96-517, better known as the Bayh-Dole Act, which stipulates that inventions developed under sponsorship from the federal government and assigned to the university must be actively transferred to the private sector for the benefit of the general public.

**Charles Rivenburgh, M.B.A.**, Director

## LABORATORY ANIMAL VETERINARIAN (LAV)

Office: 300 Bowen Hall

Laboratory Animal Veterinarian is a University-wide resource that provides compliance monitoring, veterinary care, technical support, and program planning for animals used in biomedical and some agricultural teaching, testing, and research. The research, overseen by the Vice President for Research, is advised by the University Institutional Animal Care and Use Committee and conforms with local, state, and Federal regulations and guidelines for animal care and use.

**John E. Harkness, D.V.M.**, University Laboratory Animal Veterinarian

**Michelle Wilkerson, D.V.M.**, Associate Laboratory Animal Veterinarian

## RADVANYI CHAIR in INTERNATIONAL STUDIES

Office: 55 & 57 Magruder

On June 11, 1996, the endowed Chair in International Security and Strategic Studies was established with Dr. Janos Radvanyi as the first chair holder. On June 22, 1998, Dr. Malcolm Portera, President, Mississippi State University, named the Chair in Dr. Radvanyi's honor, the Radvanyi Chair in International Studies. The Chair devotes full attention to vital global problems, with special emphasis on the complex security issues of the post-communist Era. It alerts to America's vulnerability by not having a reliable defense against hostile missile attacks. The Chair is studying U.S. counter terrorism policy and is monitoring German-European and American relations and the insight of the workings of the European Union and Asian Security issues. The Chair, through its Executive Lecture Forum (ELF) provides a unique outreach program, hosting internationally respected speakers from around the globe to address the membership. Its publications reach government agencies, think-tanks, and major libraries. This exclusive lecture forum counts as its members Mississippi business executives, academicians, and state government representatives, and meets on a regular basis, several times a year. Through the Chair, both students and faculty are provided with a wide range of opportunities to gain awareness of international, political, economic, and cultural issues.

**Janos Radvanyi, Ph.D.**, Chair

## REGULATORY COMPLIANCE OFFICE (RCO)

Office: 300 Bowen

The Regulatory Compliance Officer is responsible for the administration and facilitation of regulatory compliance matters that affect the research, instruction, and extension programs of the institution. Primary emphasis is on day to day management and overall coordination of the Regulatory Compliance Office and its components: Biosafety, Radiological Safety, Hazardous Waste, Human Use in Research (IRB) Animal Care and Use (IACUAC).

The Biosafety Officer ensures compliance with federal, state, and local governmental regulations concerning biosafety in the laboratory and field. Information is provided to faculty and support personnel on guidelines developed by the Centers for Disease Control (CDC), the National Institutes of Health (NIH), and the United States Department of Agriculture (USDA) which normally complement state and local regulations.

The Hazardous Waste Officer assures that all hazardous wastes generated by MSU are disposed of in accordance with applicable state and federal regulations. This officer oversees the collection, storage, and disposal of these wastes. All required compliance records related to hazardous waste activities at MSU are maintained in this area.

The Radiological Safety Officer administers the University's radioactive materials license, and monitors the use of radioactive materials and other sources of ionizing radiation on campus. This officer is responsible for the endorsement of federal, state, and University regulations regarding the use of ionizing radiation at MSU.

**Tracy Arwood**, Regulatory Compliance Officer  
**Franklin R. Champlain**, Biosafety Officer

**Terry Coggins**, Radiological Safety Officer  
**Marion B. Hughlett**, Hazardous Waste Officer

## SPONSORED PROGRAMS ADMINISTRATION

Office: 305 Bowen Hall

Sponsored Programs Administration (SPA) is the component of the Office of Research responsible for the administration of external proposal activities, and pre-award and post award contractual negotiations of fiscal and administrative matters. Services provided by Sponsored Programs include: Disseminate funding information; assist faculty in locating potential funding opportunities; assist faculty in contacting funding agencies; assure compliance with proposal guidelines; provide proposal budget cost analysis; facilitate in obtaining appropriate departmental and collegiate approvals; coordinate institutional compliance with government regulation; act as administrative liaison with the administrative officers of external sponsors; and, assist faculty and staff in administrative **problem-solving** associated with their sponsored projects.

**James E. Peterson, Ph.D.**, Director  
**Tina C. Henson**, Senior Sponsored Programs Administrator  
**Robyn B. Remotigue**, Sponsored Programs Administrator  
**Sheri Johnson**, Sponsored Programs Administrator

**Kacey Jones Strickland**, Sponsored Programs Administrator  
**Mary Ann Richardson**, Sponsored Programs Associate Administrator  
**Mary Ann Latham**, Sponsored Programs Assistant Administrator

## MISSISSIPPI STATE CHEMICAL LABORATORY

Office: 112 Hand Lab

From the earliest days in its history the authorities of Mississippi State University have encouraged those in charge of its science and technical departments to seek opportunities of contributing to the agricultural and industrial progress in the State and otherwise to cooperate in the public service. The State Chemical Laboratory is a part of this effort.

The State Laboratory was established in 1892 with the control of fertilizer quality as its primary responsibility. Subsequent legislation added duties in the areas of animal feed control, pesticide control, food control, paint and varnish control, and petroleum products control.

In 1970 the Legislature redefined and clarified the purpose and operations of the Mississippi State Chemical Laboratory. Four divisions were established: the Chemical Regulatory Division, the Petroleum Products Division, the Industrial and Agricultural Services Division, and the Research Division. Operation of the first two divisions was continued practically unchanged from the practice of many years. The Industrial and Agricultural Services Division and the Research Division are an expansion of services formerly performed by the Chemical Regulatory Division.

The Chemical Regulatory Division carries out regulatory control programs in food, animal feeds, fertilizers, economic poisons, and paints and varnishes.

The Petroleum Products Division conducts regulatory control testing on petroleum and related products.

The Industrial and Agricultural Services Division provides applied scientific and engineering consultation to industries and individuals residing in or doing business in the State. Charges are assessed for major projects such that they will be self-supporting but nonprofit. The guiding principle in such services, free or paid, shall be that they contribute to the economic growth of Mississippi or to the welfare of its citizens.

The Research Division conducts self-supported, grant, or contract research having immediate or potential influence on the economic growth and promotion of agriculture or industry in Mississippi, or on improvement of the Laboratory's analytical capabilities.

**Kevin L. Armbrust, Ph.D.**, Interim State Chemist; Associate Professor of Chemistry

**Reba L. Ingram, Ph.D.**, Director, I.A.S. Division

**Fay Y. Hutto, M.S.**, Director, Petroleum Products Division

**Paul J. Brignac, Ph.D.**, Associate State Chemist

**Patricia B. Reeves**, Director, Chemical Regulatory Division

## CENTERS and INSTITUTES

### CENTER for ADVANCED ENERGY CONVERSION (CAEC)

The Center for Advanced Energy Conversion (CAEC), established in 2001, is a multidisciplinary organization formed to address alternative energy fuels and energy Conversion systems of the future. The mission of CAEC is to research and develop alternative energy technologies that will address the energy needs of the future. *Energy Technology for Tomorrow's World.*

The center enlists faculty from across the Science and Engineering Colleges to address its cross-disciplinary research problems. The Center also forms strategic alliances and/or industrial organizations.

The research efforts of the Center will provide state-of-the-art capabilities for various alternative energy technologies and advanced enabling technologies. This along with strategic initiatives and industrial partnerships will lay the ground work for Mississippi industries to address the country's future energy needs. The Center will also be an informational resource on alternative energy for Mississippi industry.

**Robert L. Cook, Ph.D.**, Director

### CENTER for ADVANCED VEHICULAR SYSTEMS (CAVS)

Office: 617 Allen Hall

The Center for Advanced Vehicular Systems (CAVS) was created in 2001 to research and develop manufacturing and design means and methods for producing vehicles of superior quality with advanced features and functions at reduced costs and shorter product development times, exploiting the underlying technologies for broader industrial use.

The State of Mississippi initiated significant efforts to recruit Nissan to build a major manufacturing facility in central Mississippi and committed to the establishment and continued operation of CAVS at Mississippi State University with a branch of CAVS near the Nissan plant site to provide direct support and engineering training for Nissan and suppliers. Both the CAVS engineering extension building at Canton and the CAVS research building at MSU are targeted for opening in August of 2003.

**J. Donald Trotter, Ph.D.**, Interim Director, Center for Advanced Vehicular Systems

**Zachery Rowland, M.S.**, Research Associate III

**Song-Yul Choe, Ph.D.**, Research Professor

**C. Dean Norman, Ph.D.**, Research Professor

**Mark F. Horstemeyer, Ph.D.**, CAVS Chair, Computational Solid Mechanics; Professor, Mechanical Engineering

### CENTER for EDUCATIONAL and TRAINING TECHNOLOGY

Office: 309 Bost, 512 Russell Street

The Center for Educational and Training Technology was created in 1996 to provide for the development of innovative software tools through an interdisciplinary approach involving a wide cross section of units, departments, and colleges from Mississippi State University, state and federal agencies, and corporate America. The Center's ultimate goal is to develop emerging software-based technologies and to integrate them into the educational and training environment at all levels.

**R.D. Brook, ED.D.**, Co-Director, Training and Contract Development

**R.D. Koshel, Ph.D.**, Co-Director, Software Tools Development

### CENTER for SAFETY and HEALTH

Office: Suite C, 106 Crosspark Drive  
Pearl, Mississippi 39208

The Center for Safety and Health is a federal grant program. It was created in 1970 as the Branch of Occupational Safety and Health, a part of the Mississippi State Board of Health. In 1991 the branch was elevated to division status and in 1992 was relocated to the Mississippi Workers' Compensation Commission. In 1994 the division was transferred to Mississippi State University and designated a center.

The purpose of the Center is to provide assistance to small, medium, and high hazard business employers in Mississippi by helping them come into compliance with the regulations of the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). The services provided by the Center are free of charge, confidential, and conducted only at the request of the business employers. The Center is staffed with experienced safety consultants and industrial hygienist that conduct consultative surveys at industrial sites, construction projects, and medical facilities. During the consultation visit, an opening conference is held to present the consultant's credentials, define the consultation procedure, and explain employer's recordkeeping and program requirements under the law. Also during the opening conference the employers obligations are addressed. The employer must agree to correct all identified imminent danger and serious hazards. A review of the recordkeeping and required programs will be conducted. During a conducted tour of the survey site or facility, production processes, methods of operation, and facilities are assessed for potential and observed hazards. Health and safety conditions present in the workplace are evaluated by the use of appropriate monitoring and testing equipment. A brief closing conference is held to review the observed safety and health hazards and to suggest initial corrective measures. The consultant then prepares a technical report to describe any hazards as related to applicable standards and to make recommendations for correction and/or control measures. Mutually agreed upon hazard abatement dates are addressed in the report.

The Center staff is also available to assist employers over the telephone in off-site consultation matters to help solve problems and answer general questions. Employers may be provided with helpful handouts such as sample programs, forms, etc. Employers may also choose to visit the website or Center office to interface directly with a consultant to discuss various subjects.

**Kelly M. Tucker, B.S.**, Director  
**Charles M. Savage, B.S.**, Safety Supervisor  
**Charles T. Shorter, B.S., M.S.**, Senior Safety Consultant  
**Danny L. Sumrall, B.S.**, Senior Safety Consultant

**Davern A. Jones, B.S.**, Senior Industrial Hygienist  
**Ralph S. Terry**, Industrial Hygienist II

## CENTER for SCIENCE, MATHEMATICS and TECHNOLOGY

Office: 23 President's Circle

The Center for Science, Mathematics and Technology was created in 1996 to facilitate multidisciplinary research with a focus on science and mathematics education. Concentrating on human resource development issues in preparing people for work, in gender equity, in curriculum reform and in environmental education, the Center has actively pursued research projects in teacher enhancement, advanced technology and faculty development from extramural sources. Under supervision of the Vice President for Research, the Center will continue to undertake collaborative research projects with other Mississippi State University departments and units supporting educational reform, faculty enhancement, environmental education, and encouraging participation of women and minorities in science, engineering, mathematics and technology.

**Sandra H. Harpole, Ed.D.**, Director and Professor of Physics

**Lori A. Hill, M.S.**, Research Associate I

## ELECTRON MICROSCOPE CENTER

Office: Clay Lyle Entomology Complex

The Electron Microscope Center is a University-wide facility administratively under the Mississippi State University Office of Research. The purposes of the Electron Microscope Center are: (1) to provide the Mississippi State University academic and research community access to specialized electron microscopy and confocal equipment, (2) to give professional consultation on research problems related to electron microscopy, and (3) to provide instruction and assistance in the use of electron microscopy and confocal equipment.

**Kay Nevels Milam, B.S.**, H.T., HTL, Director

## REMOTE SENSING TECHNOLOGIES CENTER (RSTC)

Office: 403 Bost

Mississippi State University has established a Center for Remote Sensing Technologies (RSTC) in the areas of agriculture and forestry, and wildlife and transportation underpinned by the cross-cutting areas of computational modeling and workforce development. The overall goal of the research program of the RSTC is to produce a robust research process that defines the role of the land-grant university in applying remote sensing technologies to solve problems that affect our stakeholders. Organizationally, MSU offers colleges, schools, institutes, centers, and laboratories whose outstanding capabilities have been recognized both nationally and internationally. Through its mission statement and programs of research, teaching, and service, MSU supports human resources development, economic and community advancement, science, and technology at the local, state, national, and international level. Mississippi State University possesses the infrastructure, with thirteen experiment station research sites throughout the state, necessary to validate phenomena observable with remote sensing. A few examples include crop conditions, forest stand conditions and effects of management on all types of vegetation and transportation infrastructure. The unique physical and demographic features of the State, along with the presence and commitment to MSU, the NASA Stennis CRSP and the Mississippi Space Commerce Initiative (MSCL), make Mississippi an ideal laboratory for applications of remote sensing to promote sustainable use by the public and private sectors. Recent federal mandates for production of an agriculture and forestry census by USDA (Census of Agriculture Act of 1997, Public Law 105-113, Title 7 U.S.C.) as well as federal appropriations for transportation infrastructure, place an important national focus on needs for landscape management.

**David Shaw, Ph.D.**, Director  
**Jon H. Arvik**, Chief Technologist

**Charles L. Hill**, Associate Director  
**Roger L. King**, Chief Engineer

## RESEARCH and CURRICULUM UNIT for VOCATIONAL and TECHNICAL EDUCATION

Office: 601 Hogan Street

The Research and Curriculum Unit for Vocational and Technical Education (RCU) is jointly sponsored by the Mississippi Department of Education, Office of Vocational and Technical Education, and the Office of Research of Mississippi State University.

The mission of the RCU is to provide leadership in state workforce development efforts and coordinate those efforts with secondary and community/junior college vocational technical education curriculum development. The RCU cooperates with other state agencies in uniting and coordinating workforce development efforts. It provides instructional leadership in vocational and technical education activities, working with statewide curriculum frameworks and initiatives. Professional development activities are provided for educators across the state, enhancing their ability to provide optimal utilization and implementation of materials and research findings for the classroom. Research activities include assistance with state-wide vocational-technical assessments, reporting, and innovations. The RCU staff works with personnel from local school systems, community/junior colleges, state universities, the Mississippi Department of Education, the U.S. Office of Education, and other agencies and organizations.

**Patricia Abraham, Ph.D.**, Interim Director and Professor, Department of Technology and Education  
**James S. McCully, Ph.D.**, Senior Research Scientist, (Coordinator for Instructional Programs) and Assistant Professor, Agricultural Information Science and Education

**Lemond Irvin, Ed. D.**, Senior Research Scientist, (Coordinator for Workforce Development)  
**Cindy Morgan, Ph.D.**, Associate Research Professor, (Coordinator of Research and Assessment)

## SCIENCE and TECHNOLOGY RESEARCH CENTER

Office: John C. Stennis Space Center

The Science & Technology Research Center (STRC) has been located at The John C. Stennis Space Center (SSC) in Hancock County, MS., since the mid sixties. It provides research coordination and fact-finding assistance as a liaison office to all MSU faculty with Federal and State Agencies at SSC and elsewhere on the Mississippi Gulf Coast. Additionally, STRC coordinates research projects through the Mississippi Research Consortium (MRC) for MSU, UM, JSU, and USM.

**Roy A. Crochet, Ph.D.**, Director

**Wendell J. Lorio, Ph.D.**, Senior Research Scientist

## SOCIAL SCIENCE RESEARCH CENTER

Office: 103 Research Park

The Social Science Research Center has over 50 years experience as an organized university research center. It engages in the analysis and study of numerous important social and economic issues facing Mississippi, the southern region, and the nation. Some 35 research fellows, supported by approximately 75 graduate and undergraduate students, research associates, and support staff conduct around 65 sponsored and numerous unsponsored research projects. The Center has a strong tradition of multi-disciplinary research, development and evaluation projects dealing with social and community development, the family and children, alcohol and drug studies, highway safety, race relations, natural resources, the environment, behavioral dimensions of health and information-age societal monitoring. Housed in the Mississippi Research and Technology Park adjacent to the MSU campus, SSRC researchers benefit from the interdisciplinary research infrastructure of the Center, which has seven program areas: the Family and Children Research Unit; the Mississippi Alcohol Safety Education Program; the Crime and Justice Research Unit; the Rural Health, Safety and Security Institute; the Social and Community Research Program; and the General Research Program. It also supports the Survey Research Unit, the Monitor Laboratory, the Delta Data Center, the Secure Date Laboratory, the Decision Support Laboratory, and the Unit for Community and Environmental Studies. A university-level, multi-disciplinary research unit, organized with university-wide responsibilities under supervision of the Vice President for Research, the SSRC also has administrative responsibilities, for certain programs, to the Director of MAFES.

The SSRC has the following major goals: 1) to conduct research on social, economic, political, human resource and social-environmental problems facing the state, nation, and world; 2) to provide a support system for the University to plan, develop, secure funding for and conduct social research on problems of interest to the scientific community and to consumers of research findings; 3) to provide a mechanism whereby existing social science research capabilities in the University can be matched with funding sources; 4) to contribute to the University's graduate and undergraduate program by involving students in research projects through assistantships and other work arrangements; and 5) to provide a vehicle for unique social research and public service programs that do not fit more traditional academic structures.

A university-level, multi-disciplinary research unit, organized with university-wide responsibilities under supervision of the Vice President for Research, the SSRC also has administrative responsibilities, for certain programs, to the Director of MAFES. The Center receives continuing support for its research operations from MSU and MAFES. Most research projects, however, are supported through extramural funding.

**Arthur G. Cosby, Ph.D.**, Director, Executive Director of Rural Health, Safety and Security Institute, Sociologist and Research Fellow  
**Michael L. Lightsey, M.A.**, Associate Director for Administration, MASEP Operations Coordinator, and Research Fellow  
**Elisabeth Wells-Parker, Ph.D.**, Associate Director of Cognitive and Behavioral Research; Co-Director of Cognitive and Behavioral Research of the Rural Health, Safety and Security Institute; Psychologist and Research Fellow  
**Martin L. Levin, Ph.D.**, Co-Director of Sociological and Organizational Research of the Rural Health, Safety and Security Institute; Research Fellow  
**M. Larry Doolittle, Ph.D.**, Coordinator, Delta Data Center; Sociologist and Research Fellow  
**R. Gregory Dunaway, Ph.D.**, Coordinator, Crime and Justice Research Unit, Sociologist and Research Fellow  
**Wolfgang Frese, Ph.D.**, Coordinator, Survey Research Unit; Sociologist and Research Fellow

**Duane A. Gill, Ph.D.**, Co-Coordinator, Unit for Community and Environmental Studies; Sociologist and Research Fellow  
**Ruth J. Haug, Ph.D.**, Coordinator of Administrative and Research Services and of the General Research Program; Assistant Research Scientist; Research Fellow  
**Domenico Parisi, Ph.D.**, Co-Coordinator, Unit for Community and Environmental Studies; Assistant Sociologist; and Research Fellow  
**Jarryl Ritchie, B.A.**, Coordinator, Monitor Laboratory; and Research Associate  
**Liesel A. Ritchie, M.A.**, Coordinator, Decision Support Laboratory; Scientist; and Research Fellow  
**Stephen D. Shaffer, Ph.D.**, Coordinator, Mississippi Poll, Political Scientist and Research Fellow  
**Ronald W. Snow, Ph.D.**, Coordinator, MASEP Program Development and Research; Associate Research Geographer; and Research Fellow  
**Linda Southward, Ph.D.**, Coordinator, Family and Children Research Unit; Associate Social Scientist; and Research Fellow

## T.K. MARTIN CENTER for TECHNOLOGY and DISABILITY

Office: T.K. Martin Center

The T.K. Martin Center for Technology and Disability at Mississippi State University was created in 1994 as a unique entity which provides direct clinical assistive technology to individuals with disabilities in an environment that promotes application and research.

The T.K. Martin Center for Technology and Disability works in conjunction with the Mississippi Department of Rehabilitation Services and other agencies to provide the latest in evaluation, prescription and training of a wide range of assistive technologies, ranging from design and fabrication of mechanical devices to computer based technologies. The T.K. Martin Center collaborates with other University Centers, Institutes and Departments on research issues involving new technologies and technology integration issues.

The T.K. Martin Center for Technology and Disability is housed in a new facility, the T.K. Martin Center Building, adjacent to the Longest Student Health Center.

**Janie Ciriot, M.S., CCC/SLP**, Director  
**Laurie Craig, M.A., CCC-SLP**, Speech Pathologist  
**Judy G. Duncan, M.S.**, Case Manager  
**Jill T. Ethridge, OTR/L**, Occupational Therapist  
**Matthew S. Fuller, BSEE**, Sensory Aids Specialist  
**Gary M. McFadyen, Ph.D., ATP**, Senior Rehabilitation Engineer

**Lucinda McMaster, M.Ed**, Special Educator  
**Wes Perry, M.S., M.B.E.**, Rehabilitation Engineer  
**Denise Swafford, M.Ed.**, Special Educator  
**Christan Toney, M.S., CCC-SLP**, Speech Pathologist  
**Andrew G. Whetstone, M.S., BME**, Rehabilitation Engineer  
**Elizabeth Williams, B.S.**, Special Educator

## TRANSPORTATION RESEARCH CENTER

Office: 204 McCain Engineering

The Transportation Research Center (TRC) was established in 1997. The primary function of TRC is to conduct scholarly research designed to advance the current state of technologies in the State of Mississippi, and to provide educational opportunities to the Mississippi Department of Transportation (MDOT) personnel for the advancement of their professional careers. The TRC acts in coordination with the MDOT Division of Research to screen proposals submitted to TRC and jointly awards the research contracts. TRC provides on-campus administration of the research projects, and provides credit and non-credit instructional programs as requested by MDOT.

**Thomas D. White, Ph.D.**, Director

## WATER RESOURCES RESEARCH INSTITUTE

Office: 55-57 Magruder Street

As a reflection of the public consciousness of water problems, Congress in July 1964 (P.L. 98-242) authorized the establishment of a Water Resources Research Institute in each of the fifty states and in Puerto Rico. In November 1964, The Governor of Mississippi designated Mississippi State as the institute in Mississippi to carry out this work.

The mandate of the Institute is to help Mississippi citizens, water users, and water managers in their continuing efforts to improve the stewardship of water. This is accomplished through a coordinated research and development program that helps solve water and water-related problems in Mississippi, the region, and the nation. Student assistants receive on-the-job research training, preparing many of them for employment in water resource-related fields.

Activities are developed in close consultation and collaboration with leading water resources officials within the state. The Institute is a joint state-federal undertaking for which federal funds are presently derived through the U.S. Geological Survey, Department of the Interior.

**David R. Shaw, Ph.D.**, Director

**Jeffery A. Ballweber, J.D.**, Associate Director for Governmental Affairs

**Board of Managers**

**Jonathon W. Pote**, Interim Vice President for Research, MSU  
**J. Charles Lee, Ph.D.**, Interim President of Mississippi State University  
**Lewis R. Brown, Ph.D.**, Professor of Microbiology, MSU  
**Charles A. Campbell, Ph.D.**, Associate Dean and Director, Division of Business Research, MSU

**Felix Okojie, Ph.D.**, Vice President for Research and Strategic Initiatives, Jackson State University  
**Alice M. Clark**, Vice Chancellor for Research and Dean of the Graduate School, University of Mississippi  
**Don Cotten, Ph.D.**, Vice President for Research and Planning, University of Southern Mississippi  
**A. Wayne Bennett, Ph.D.**, Dean, College of Engineering, MSU

## SCHOOLS and COLLEGES

### SCHOOL of ARCHITECTURE

#### ARCHITECTURAL RESEARCH

Office: 140 Giles

As architecture combines aspects of both science and art, research within the School of Architecture is more than either basic research or creative expression. Research in the discipline of architecture aims to improve the quality of life and may range from the development of new materials or building components which make buildings more efficient, safer, less expensive, or more durable to the design of prototypical communities that are environmentally sensitive, energy efficient, and economically viable.

The research program of the School of Architecture includes the Small Town Center (STC), the Jackson Community Design Center (JCDC), the Digital Research and Imaging Laboratory (DRIL), and the Educational Design Institute (EDI). Established in 1979, the Small Town Center seeks to initiate theoretical and applied research, and to serve as a national focus for the collection, storage, dissemination, and application of information pertinent to issues of special interest in small towns.

Small Town Center activities include graphic and photographic documentations and computer imaging of the small-town scene. The STC has participated in design case studies, environmental impact studies, and economic and marketing analyses. The STC provides research and service assistance to towns through the redevelopment of downtowns and the implementation of other comparable community improvement initiatives. Assistance projects may include: organizing for community improvement, community design, economic diversification, town planning, conservation of architectural and historic resources, affordable housing design and technology, and other activities that affect quality of life in the community.

Jackson Community Design Center activities include interdisciplinary studies of urban living and working environments. Studies focus on environmental factors associated with crime prevention, history, social behavior, building material durability, and use-feasibility analysis for urban revitalization efforts.

The JCDC endeavors to provide technical, educational, design, and research assistance to neighborhoods and groups within the Jackson urban community in order to facilitate their revitalization initiatives. Assistance projects include: affordable housing design, urban public-space-improvement design, programming and cost estimating, educational seminars, identification of and research on historically significant structures, and feasibility studies to encourage new development.

The work of the Digital Research and Imaging Laboratory aims to apply state-of-the-art visualization technology to problems that yield significant improvements in the quality of life for the people of Mississippi and beyond. Located in Giles Hall, it is a state-of-the-art laboratory for the creation of multi-media productions, including video tape and CD-ROM, as well as for the development of new graphics and visualization software. Graduate and undergraduate students participate in projects that apply visualization technology to a range of multi-disciplinary problems. Work ranges from design studies of buildings and facilities on the MSU campus through master planning and visualization work for major facilities within the state, to a variety of projects of national and international scope that bring together such disciplines as archaeology, anthropology, history and the sciences.

The Educational Design Institute is a collaborative initiative between the College of Education and the School of Architecture. The EDI is charged with exploring the changes in educational delivery and with rethinking how schools envision, plan, design, manage, and use their educational facilities. The EDI is conducting surveys of educational facilities and preparing design guidelines and documents for school-facilities design. To achieve the goals of establishing the EDI as both a collaborative partner for educational-facility planning and a leader in educational-design innovation in the South, the Institute is pursuing collaborative projects and initiatives with local school districts, the Small Town Center, the Mississippi Department of Education, and private foundations.

Other research activities within the School of Architecture focus on humanities and technology studies. Humanities include such work as new methodologies for programming, planning and design, anthropometric modeling and evaluation, architecture theory and history research, visual imagery and its impact, post-occupancy evaluation of buildings by their user, etc. Technology studies include technological evaluation of building materials and methods, energy design evaluation, solar energy equipment, construction, and testing.

**James L. West, M. Arch., A.I.A.**, Dean and Director of Research  
**Larry R. Barrow, D. Des., A.I.A.**, Director, Digital Research and Imaging Laboratory  
**Kimberly A. Brown, M. Arch., A.I.A.**, Director, Small Town Center

**David Perkes, M. Arch.**, Director, Jackson Community Design Center  
**John Poros, M. Arch.**, Director, Educational Design Institute

## COLLEGE of ARTS and SCIENCES

### BIOLOGICAL and PHYSICAL SCIENCES RESEARCH INSTITUTE

Office: 208 Allen Hall

Support for research activities in the biological and physical sciences comes both from the University and from outside sources, including state and federal agencies, private industry, and foundations. Some projects are carried out by staff members working independently or with graduate students, while other projects are multidisciplinary in nature and are conducted in cooperation with staff members from other colleges in the University, the Mississippi Agricultural and Forestry Experiment Station and the Mississippi State Chemical Laboratory. Staff members also participate in multi-institutional projects in cooperation with personnel from the University of Mississippi, the University of Southern Mississippi and Gulf Coast Research Laboratory.

Facilities at the Gulf Coast Research Laboratory at Ocean Springs and the Mississippi State Research Center at the National Space Technology Laboratories are available and are being utilized in several of the research projects.

The results of the research efforts are published in appropriate scientific journals and, in the case of graduate student participation, become the basis of theses and dissertations.

Assistance in the preparation of research proposals, the location of appropriate funding sources, and the administration of grants and contracts is available to staff members through the institute.

The research staff of 21 consists of faculty and staff members from the departments of Biological Sciences, Chemistry, Geosciences, Mathematics and Statistics, and Physics and Astronomy.

**Philip B. Oldham, Ph.D.**, Dean, College of Arts and Sciences



## THE COBB INSTITUTE of ARCHAEOLOGY

Office: Cobb Institute Building

The Cobb Institute of Archaeology was founded in July, 1971, at Mississippi State University by Mr. Cully A. Cobb (Class of 1908) and Mrs. Lois Dowdle Cobb, for instruction and research in Archaeology with emphasis upon the origins of Western European Civilization and the Indians of the South, particularly Mississippi. The Institute was endowed by the Cobbs to complement the university's activities in archaeological instruction, research and service.

The Institute provides active support for the instructional program in archaeology offered through the Department of Sociology, Anthropology and Social Work and the Department of Philosophy and Religion. Research and field work are actively pursued, primarily in the Middle East and the South-eastern United States. The Institute actively supports an archaeological field school offered in alternate summers in the Middle East and Mississippi. The Institute is housed in two specially designed archaeological buildings which include classrooms, archaeological laboratories, environmentally controlled artifact storage areas, and a museum in which archaeological exhibits are made available to students and the public.

**S. Homes Hogue, Ph.D.**, Physical Anthropologist  
**Paul F. Jacobs, Ph.D.**, Middle Eastern Archaeologist  
**John W. O'Hear, M.A.**, North American Archaeologist  
**Janet L. Rafferty, Ph.D.**, North American Archaeologist

**Joe D. Seger, Th.D.**, Director and Middle Eastern Archaeologist  
**Evan Peacock, Ph.D.**, North American Archaeologist

## INSTITUTE for the HUMANITIES

Office: 209 Allen Hall

In order to organize the scholarly activities in the area of the humanities, the Institute for the Humanities (IH) has been established. Support for scholarly work in the humanities has been obtained from the National Endowment for the Humanities, from the Mississippi State University Development Foundation, and from private sources. Staff members have been authors of books and articles and have presented papers at meetings of learned societies.

The research staff consists of four faculty members from the departments of Art, Communication, English, Foreign Languages, History, and Philosophy and Religion.

**Donald J. Mabry, Ph.D.**, Director

## THE JOHN C. STENNIS INSTITUTE of GOVERNMENT

Office: The Depot Building

The John C. Stennis Institute of Government performs a threefold mission; (1) to enhance the efficiency and effectiveness of Mississippi State and local government through basic and applied research, training, technical assistance and service; (2) to provide technical assistance and research for both rural development in Mississippi and regional activities in the Southeast; and (3) to promote civic education and citizen involvement in the political process. The Stennis Institute's programs relating to state and local government include the State Executive Development Institute for key state officials; the Governing Institute for Mayors, and technical assistance to state agencies and local governments. The Institute's research on rural development includes an assessment of local officials' perceptions of state economic development activities. The Stennis Institute's civic education programs include participation in the Congressional Insight program, as well as a variety of state and national programs.

Funds for The Stennis Institute of Government come partially from interest on more than \$1.7 million that has been raised by the Mississippi State University Development Foundation as a memorial to Senator

John C. Stennis, but primarily from grants and contracts from outside sources.

**W. Martin Wiseman, Ph.D.**, Director  
**Phillip S. Pierce, M.P.P.A.**, Research and Development Coordinator  
**Judith Phillips, M.B.A.**, Research Associate I

**Keith A. Smith**, Research Associate I  
**James Markham, M.P.P.A.**, Research Associate I

## UNIVERSITY/INDUSTRY CHEMICAL RESEARCH CENTER

Office: 118 and 313 Hand Lab

The University/Industry Chemical Research Center (UICRC) began doing contract work for industries in 1982. The UICRC has the following major goals: 1) to assist Mississippi industry by performing chemical research to aid in their product development, 2) to work on chemistry related problems for any industry, 3) to teach graduate and undergraduate students techniques of industrial chemistry, 4) to help attract chemical based industry into the state, and 5) to help train B.S., M.S., and Ph.D. Chemists and attract visiting scholars and postdoctoral fellows for specific functions for industry.

The UICRC conducts grant and contract research and can work with most industries to develop mutually satisfactory agreements involving any necessary secrecy arrangements. It is also possible to work on short or long term projects and to arrange feasibility studies before binding contracts are written.

**Keith T. Mead**, Director

**Charles U. Pittman, Ph.D.**, Research Director

## COLLEGE of BUSINESS and INDUSTRY

### DIVISION of BUSINESS RESEARCH and SERVICES (DBRS)

Office: 240 McCool Hall

**The Division of Business Research and Services** is an integral part of the College of Business and Industry. Recently organized, this office is comprised of four distinct and varied units. The Division of Business Research (DBR) is one of the major research organizations of the University. It was established in 1939 as the Bureau of Business and Economic Research to study scientifically the business, economic and governmental problems of the state under the direction of the College of Business and Industry. Continued growth of the Bureau led to the eventual establishment of the Division of Business Research with several distinct responsibilities. First, the Division participates in contracted research, cooperating with interested organizations that have specific problems requiring investigation. Second, the Division serves as the coordinating center of funded research for the College of Business and Industry and offers services to faculty. Third, the Division works with the MSU Office of Research in seeking grants for faculty members and in assisting with implementing and completing projects. Fourth, this unit publishes the *Mississippi Statistical Abstract*, a varied compendium of statistics about Mississippi.

**The Division of Business Services (DBS)** has as its primary responsibility the provision of training and services, other than primary research, to the business community. Typical activities include custom-designed seminars and consulting services for private firms, governmental agencies, international groups, and non-profit associations. These services are usually provided on a contractual or fee basis.

**Small Business Development Center (SBDC)** at Mississippi State University was organized in 1984 to provide counseling in Oktibbeha County and the surrounding counties to people who own a small business of are interested in starting one. This unit is designed to assist small businesses through direct consulting, training seminars, and referrals to other agencies or individuals. Charges are minimal or non-existent.

**Technology Resource Institute (TRI)** is charged with the mission of promotion of university public/private partnership that will enhance economic development throughout the state. This Center provides assistance with business analysis or planning; production, marketing or finance solutions; research projects; feasibility studies; and community planning. The staff serves as liaison with appropriate faculty or service agencies and assists in resolving business issues.

**Sara M. Freedman, Ph.D.**, Dean  
**G. Stephen Taylor, Ph.D.**, Director, Technical Resource Institute

**Thomas M. Adkins**, Associate Director/ External Liaison Resource Referral Center  
**R.S. "Sonny" Fisher**, Director, Small Business Development Center

## COLLEGE of EDUCATION

### BUREAU of EDUCATIONAL RESEARCH and EVALUATION

Office: 328 Allen

The Bureau of Educational Research and Evaluation (BERE) was authorized by the Board of Trustees in the Spring of 1966. This research organization is an integral part of the College of Education and is a cooperating unit of the MSU Office of Research.

The major functions of the Bureau are:

1. To engage in basic and applied research pertaining to all phases of education.
2. To consult with faculty and students about problems of research design and analysis.
3. To provide aid in dissemination of research findings.
4. To assist faculty/staff in the development of proposals for research and program development in the College of Education.
5. To provide assistance to school districts and other educational/human service agencies in Mississippi the region, and the nation in the areas of research and evaluation.
6. To assist in test development for public schools.

The services of the Bureau of Educational Research and Evaluation are available to all students and faculty of Mississippi State University and to educators of the state, region, and nation.

The Bureau helps coordinate research projects and proposals in seven departments/units of the College of Education.

**Stephanie King, M.S.**, Research Scientist

### CENTER for EDUCATIONAL PARTNERSHIPS (CEP)

400 Morrill Road

The Center for Educational Partnerships is an integral part of the College of Education, functioning as a facilitator of technical and support services to the public school districts of Mississippi.

Major functions of the Center include:

1. Providing administrative support for the Program for Research and Evaluation of Public Schools, Inc (PREPS, Inc.) PREPS is a private nonprofit consortium composed of 88 public school districts.
2. Providing administrative support for the Mississippi Writing/Thinking Institute. The Institute is a state-wide project chartered by the National Writing Project.
3. Providing administrative support for the World Class Teaching Project. The Project is a state-wide initiative intended to support the certification of Mississippi teachers through the National Board of Professional Teaching Standards.
4. Providing administrative support for the America Reads - Mississippi Project. This project is intended to support and enhance the reading performance of elementary students in participating schools located in the State's 14 Level 1 accredited school districts.
5. Providing administrative support for the Educational Design Institute. This project focuses on improving the educational design of education facilities and offering educational planning consultation and other services to school districts.
6. Administering the Mississippi Superintendent Mentor Program. The Mentor program provides training and consultation for newly selected Mississippi school superintendents.
7. Providing assistance in the development of a National Center for the Community College.

**Peggy Swoger, M.A., Ph.D.**, Project Director  
**Cynthia Ward, Ed.D.**, Project Director

**Sherry Seale Swain, Ed.D.**, Director, Writing/Thinking Institute  
**Theresa Hall-Brown, M.A.**, Sr. Regional Coordinator

### REHABILITATION RESEARCH and TRAINING CENTER on BLINDNESS and LOW VISION

Office: 150 Industrial Education Building

The Rehabilitation Research and Training Center (RRTC) on Blindness and Low Vision was established in 1981 at Mississippi State University to serve all states and territories of the U.S. It is cooperatively sponsored by the National Institute on Disability and Rehabilitation Research and the College of Education.

This National Center is dedicated to the study of blindness and low vision and their effects on the employment and careers of people who are blind or severely visually impaired. The programs of the RRTC are based on the two following assumptions:

1. All blind and severely visually impaired people have a right to work at a wage comparable with non-disabled persons and in careers which provide satisfaction and opportunity for advancement and;
2. Many persons who are blind or visually impaired may obtain satisfying gainful employment through the utilization of research and training programs.

**RESEARCH PROGRAM:** Guiding the research conducted at the RRTC is the Career Development Intervention Strategy model. This model examines the impact of intrinsic and extrinsic factors on the career development of visually impaired people. It also indicates how these factors might be altered or strengthened to enhance such development. It examines the relationship among the following dimensions: career development stages, career services, service provision setting, and service outcomes. The six career development stages identified represent the individual's birth-to-death process of preparing for and maintaining a work life. The eight service areas identified all relate to employment of the individual who is blind or visually impaired. The six service delivery sites represent rehabilitation, education, employment, and self-help settings. Four employment outcomes are identified that range from competitive to unpaid employment. These four dimensions: career development, career services, service delivery site, and outcomes are arranged in a cube that makes it possible to identify potential combinations. All of the research projects of the Center can be placed within this model, which is used both as an organizing tool for ongoing research and as a framework for new research.

**TRAINING PROGRAM:** The RRTC is linked to the blindness field through its training program the goal of which is to influence employment of persons who are blind or severe visually impaired by facilitating use of the most current rehabilitation and education research and service delivery techniques. This goal is accomplished through development of materials that make research findings readily usable by professionals, the dissemination of these materials, and the training of rehabilitation and education service providers. Both pre-service and in-service training are provided through the Center and Mississippi State University.

The RRTC conducts in-service training programs throughout the United States. Center staff are heavily involved in training programs sponsored and cosponsored by other agencies within the blindness field. Additionally, the Center conducts specially designed training programs on a contractual basis for various rehabilitation and education agencies.

Pre-service training is conducted in two ways. First in cooperation with the MSU Department of Counseling, Education Psychology, and Special Education, RRTC staff members teach courses designed to specifically prepare new rehabilitation professionals to work with persons who are blind or severely visually impaired. Second, the RRTC sponsors graduate assistantships, which enable students to acquire special skills in research areas related to blindness and low vision. New research has been promoted through student dissertations and theses, as well as the Anne Sullivan Macy Fellowship and the Jennings Randolph Research Awards Program.

**J. Elton Moore, Ed.D., CRC**, Director and Professor of Counselor Education

**John H. Maxson, M.S.**, Director of Training  
**Brenda Cavanaugh, Ph.D.**, Research Director

## COLLEGE of ENGINEERING

### DIAGNOSTIC INSTRUMENTATION and ANALYSIS LABORATORY (DIAL)

Office: 205 Research Boulevard

The Diagnostic Instrumentation and Analysis Laboratory (DIAL) has established a tradition of excellence in diagnostic research at Mississippi State University. Funding for DIAL comes primarily from the Office of Technology Development within the Office of Environmental Management in the U.S. Department of Energy (DOE).

DIAL is an interdisciplinary research department in the College of Engineering employing more than 50 professional and support personnel. A number of the professionals hold joint appointments in academic departments in the College of Engineering and the College of Arts and Sciences. DIAL has the distinction of being the longest continuously funded research project in the College of Engineering.

The DIAL facility is a 58,000-square-foot, state-of-the-art building located on eight acres in the Mississippi Research and Technology Park. The Facility houses 1 faculty and administrative offices, two classrooms, a 100-seat auditorium, a machine shop, a high-bay test area, 16 research laboratories, and numerous graduate student offices.

DIAL's research program includes the development and application of advanced diagnostic systems, analytical model development and validation, test facilities process development, and onsite field measurement and analysis. DIAL's staff has expertise and experience using their instruments in the field to make diagnostic measurements at government-sponsored development facilities, at commercial power facilities, and in industrial facilities. DIAL researchers are meeting the challenges of the future by providing diagnostic support for environmental management projects in a variety of diverse venues.

**John Plodinec, Ph.D.**, Director

**Charles A. Waggoner, Ph.D.**, Deputy Director

### ENGINEERING RESEARCH CENTER (ERC)

Main Office: 2 Research Boulevard  
Branch Office: Building 1103, Stennis Space Center

The Engineering Research Center was created in 1990 by the University and the National Science Foundation as an interdisciplinary research center within the College of Engineering. Its primary mission was to enhance global competitiveness of United States industry by reducing the time and cost necessary for complex field simulations for engineering analysis and design. Such problems were among the computational grand challenges of the nation's High Performance Computing and Communication Program and have been cited by DoD and DoE as critical technologies for the 1990's and beyond. Only a close collaboration among computational engineers, computer scientists and engineers, mathematicians and application engineers can achieve the necessary advances. The ERC was formed to provide such a cross-disciplinary environment to support this research.

With the foundation of computational engineering, computational science, high performance computing, computational mathematics, and visualization established to address the field simulation problems, the ERC has expanded in size and domain. Computational field simulation of fluid dynamics, structural mechanics, and electromagnetics in problem domains such as aircraft, ships, and submarines, automobiles, pollutant transport, water resources, earthquakes, buildings, oceans, human hearts, and bronchial tubes are addressed by researchers in the center. Researchers are also addressing improved simulation algorithms, and new computational methodologies. ERC researchers are collaborating with researchers of the Remote Sensing Technologies Center to integrate sensed data into simulations with researchers of the Life Sciences and Biotechnology Institute in the area of computational biology, and with researchers of the Water Resources Research Institute on computational approaches to water and environmental issues.

With the growth of the research in ERC, computational engineering and computational science was identified in 2000 as one of the priority areas of the University. In 2001, the mission of the ERC was revised and expanded. The ERC is to serve the University as "an institute for the advancement of computational engineering and science through research, education, and collaboration with industry and government."

With the new role, several research centers within the ERC have been formed. These are dynamic organizations that will be redefined as opportunities and research needs change. The current research groups within the ERC with their missions are as follows:

**Computational Simulation and Design Center:** to serve the U.S. Government and industry through research and development of advanced computational simulation design systems to both enable and support designers in simulation, design, and certification of land, sea, air and space vehicular systems.

**Center for Computational Systems:** to enhance the applicability and usability of simulations involving interacting physical, chemical, biological, and engineering phenomena by developing integrated computational environments and cross-cutting tools that synergistically couple information technology with computational science and engineering.

**Computational Geospatial Technologies Center:** to develop the science and knowledge base for creating information from data with a geospatial context (e.g., geospatial of geoscience) focused in the measurement, information extraction, modeling, visualization, and knowledge delivery technologies of these data in application areas that involve atmosphere, ocean, and land processes.

**Center for DoD Programming Environment and Training:** to bring research results and expertise to bear in collaborative assistance and training for DoD users as part of the DoD High Performance Computing Modernization Program (HPCMP). In collaboration with several other universities and private companies, this center addresses the needs of the four DoD Major Shared Resource (supercomputing) Centers.

**David Marcum, Ph.D.**, Interim Executive Director and Interim Director, Computational Simulation Design Center

**J. Donald Trotter, Ph.D.**, Interim Director, Center for Advanced Vehicular Systems

**David Thompson, Ph.D.**, Interim Director, Center for Computational Systems

**Joe F. Thompson, Ph.D.**, Director, Center for DoD Programming Environment and Training

**Roger L. King, Ph.D.**, Director, Computational Geospatial Technologies Center

**Boyd Gatlin, Ph.D.**, Coordinator of Education and Communication

### EMERGING MATERIALS RESEARCH LABORATORY (EMRL)

OFFICE: 412 Simrall Engineering Building

The Emerging Materials Research Laboratory (EMRL), a unit within the Department of Electrical and Computer Engineering, was established to serve as a center of development in the State of Mississippi in the field of wide-bandgap semiconductor technology. This exciting field is where the next generation of advanced semiconductor devices will be developed, and EMRL will ensure that the State of Mississippi plays an active role in this important field of research.

The Emerging Materials Research Laboratory is housed in a class 10,000 clean room with class 1,000 work stations. The principal equipment of EMRL is a high-temperature, RF-induction-heated Chemical Vapor Deposition (CVD) system for growing state-of-the-art single-crystal silicon carbide. Materials characterization capabilities include electrical characterization and photoluminescence spectroscopy.

**Michael S. Mazzola, Ph.D.**, Director

### GLOBAL CENTER for DESICCANT TECHNOLOGY (GCdT)

Office: 210 Carpenter Engineering Building

The Global Center for Desiccant technology is a partnership of equipment manufacturers, users, utilities, and academe to foster research, development, validation, design, and applications of gas-fired desiccant technology. The Center will pursue desiccant topics collectively funded by affiliates and will make such information available to the HVAC industry. Additionally, research into topics of a proprietary nature and equipment testing with confidentially maintained are possible by contract with individual sponsors.

**B. Keith Hodge, Ph.D.**, Director

**Carl James, Ph.D.**, Associate Director

### HIGH VOLTAGE LABORATORY (HVL)

Office: 115 Simrall Engineering Building

The Mississippi State University High Voltage Laboratory is a part of the Department of Electrical and Computer Engineering and serves as an independent, non-industrial, university center for high voltage engineering. The mission of the High Voltage Laboratory includes the following: research, evaluation/testing, and education activities. The principal objective of this multi-purpose laboratory is to meet the research and evaluation/testing needs of industry, utilities, and government, and to provide the necessary environment for an academic program associated with high voltage engineering.

The main laboratory of the High Voltage Laboratory has a floor area of 33.5m by 24.5m and a minimum ceiling height of 15.2m. This is the largest high voltage laboratory among North American universities. This unique laboratory is comparable in size to many industrial facilities and is equipped with the following energy sources: 3000kV, 57kJ lightning/switching impulse generator; 60Hz, 1000kV, 1000 kVA conventional test transformer; 100kV, 150kV and 250kV transformer test sets; a 1050kV, 7kW dc test set; and a portable IMJ current generator that can deliver a 2.00-kA lightning impulse.

Current research projects in the area of high voltage engineering include: lightning protection of electrical power transmission and distribution lines and substations; an electrical breakdown mechanism in high voltage polymer insulation; lightning impulse performance of composite insulation; electrical degradation of high voltage polymer insulators; and lightning protection of marine vehicles.

The High Voltage Laboratory frequently offers short courses in the area of high voltage engineering. The lecturers at the various short courses are recognized as outstanding experts in their field of high voltage engineering. They are from the U.S. as well as internationally recognized institutions and industries.

**G. Marshall Molen, Ph.D.**, Director

### INDUSTRIAL ASSESSMENT CENTER (IAC)

Office: 210 Carpenter Engineering Building

The primary mission of the Industrial Assessment Center is to serve the energy-related needs of small and medium-sized manufacturers within a geographic radius of approximately 150 miles of the Mississippi State University Campus. This is accomplished by analyzing the operating characteristics and energy requirements of manufacturing facilities to identify and recommend specific opportunities to conserve energy and/or utilize alternate energy sources, to improve productivity and minimize waste production, and to report the findings to the manufacturer together with estimates of their implementation costs, payback periods, and returns on investment. The Center fulfills its mission through site visits to plants which are carried out by the Center director or student teams under the supervision of the assistant director.

**B. Keith Hodge, Ph.D.**, Director

**Mary C. Emplincourt, M.S.**, Assistant Director

### MISSISSIPPI CENTER for ADVANCED SEMICONDUCTOR PROTOTYPING (MCASP)

Office: 103 Edwards Laboratory

The Mississippi Center for Advanced Semiconductor Prototyping (MCASP), a unit within the Department of Electrical and Computer Engineering was established in 1999 to serve as a prototyping laboratory serving both government and private industry for wide-bandgap semiconductor devices. Mississippi State University is a leader in wide-bandgap Silicon Carbide technology, and MCASP helps to move this important new semiconductor technology from the research laboratory to the military and commercial sectors.

MCASP is temporarily housed in the Edwards Laboratory, a stand-alone facility on the east side of the MSU campus, while a new facility is being constructed in the Mississippi Research and Technology Park, just north of the MSU campus. The principal equipment of MCASP is a Chemical Vapor Deposition system for growing state-of-the-art epitaxial semiconductor layers, Lam 9900 Plasma Enhanced Chemical Vapor Deposition System, Lam 9400 Inductively Coupled Plasma Etching System, Varian E-Beam Deposition System, Hitachi 808C Electron Microscope, a GCA 630B Wafer Stepper, and a fully automated Keithley Semiconductor Test and Characterization system. MCASP maintains active collaborations with industry, government, and academia world wide. Further information is available at [www.mcasp.msstate.edu](http://www.mcasp.msstate.edu) or by calling (662) 325-2500.

**Jeffery B. Casady, Ph.D.**, Director and Assistant Professor of Electrical and Computer Engineering

**Doug Seale**, Laboratory Manager

### MISSISSIPPI ENERGY RESEARCH CENTER (MERC)

Office: 210 Carpenter Engineering Building

Sponsored by the Division of Energy within the Mississippi Economic and Development Authority, the purpose of the Mississippi Energy Research Center is to develop, implement and coordinate energy and energy related research programs in Mississippi. This mission is accomplished by developing appropriate policies and procedures (a) for identification of priority research problems (b) for collaborating with local and state government agencies, utilities, industry, other universities, federal government agencies and the Legislature in the formation of their research programs (c) for selection of projects to be funded; and (d) for the transfer of technology which is produced by the research.

**B. Keith Hodge, Ph.D.** Director

### RASPET FLIGHT RESEARCH LABORATORY (RFRL)

Office: Starkville Airport

The Rasket Flight Research Laboratory (RFRL) is one of the premier university flight research facilities in the country. Established at Mississippi State University over 50 years ago by Dr. August Rasket, this aeronautical research laboratory possesses a rich heritage in full-scale flight vehicle develop-

ment and test, advanced composites development and fabrication, computer controlled manufacturing, and test of prototype composite applications. The RFRL is an integral part of the Department of Aerospace Engineering. In addition to externally funded research, the RFRL has historically made significant contributions to the educational goals of the department and the University as a superior training ground and research facility for MSU students at the graduate and undergraduate level. Among universities engaged in aeronautical research, the RFRL is distinguished as one of the very few with the capability to design, build, and test prototypes of full-scale manned and unmanned aircraft. The RFRL has engaged in a broad spectrum of composite prototyping and flight test activities over the past years to include development and fabrication of the first turbine powered composite aircraft, the XV-11A (1959), the development of a Kevlar STOL wing for the SV-11A (1981), a Kevlar towed RPV for SOCOM (1984), a graphic wing and horizontal tail for a Beech A-36 (1986), the first all-graphite turboprop business jet (Honda UA-5 1989), a close range UAV for Westinghouse (1990), a one-third-scale mock-up of X-30 National AeroSpace Plane (NASP) (1992) and a series of LoFlyte wind tunnel models (1994).

**David L. Lawrence**, Director

## D. SERVICE UNITS

### AGRIBUSINESS INSTITUTE

100 Lloyd-Ricks Building

The Agribusiness Institute has as its primary responsibility the coordination of teaching, research and service activities in the broad area of agribusiness. Its mission is to assist agribusinesses through teaching, research and service. The Agribusiness Institute is a joint venture between the Colleges of Agriculture and Life Sciences and Business and Industry. Association with the Institute is available to faculty and professional staff of the university who are actively engaged in agribusiness instruction, research and service. Adjunct affiliation with the Institute is available to individuals involved in both private and public sector agribusiness activities external to Mississippi State University.

The major functions of the Institute are as follows:

- (1) To provide the operational vehicle for administering appropriate academic programs in agribusiness jointly conducted by the College of Agriculture and Life Sciences, the College of Business and Industry, and the Graduate School.
- (2) To stimulate, develop, and coordinate regional, national and international research and service programs in agribusiness management.
- (3) To seek external support from agribusiness firms and governmental agencies to advance research, internships, and continuing education programs in agribusiness management.
- (4) To assist faculty members associated with the Institute in broadening research support in agribusiness.
- (5) To serve as a vehicle of communication for students, staff, industry and government agencies with an interest in agribusiness management.

**M. Darren Hudson**, ABI Coordinator

## DIVISION of AGRICULTURE, FORESTRY, and VETERINARY MEDICINE

### BIOMEDICAL RESEARCH CENTER

The Biomedical Research Center, established in FY 1994 focuses on use of animal models for new and advanced areas of technology; such as, for bone regeneration and repair, for testing dietary fiber substitutes, for active compounds for human dietary substitutes, for periodontal disease, and for osteoporosis. The Center also collaborates in its research efforts with major biomedical and pharmaceutical firms developing and evaluating new products and technology for human health care. This research will lead to the commercialization of drugs that contribute to the quality of life for middle-age and geriatric people. In addition, the BRC has tested dietary substitutes that have anti-cancer and cardiovascular benefits. Appropriate new animal models are developed and standardized in the area of drug evaluation.

**J. Greg Boring, DVM**, Director

### CENTER for ENVIRONMENTAL HEALTH SCIENCES

1102 Wise Center

The Center for Environmental Health Sciences provides a focus for university activities directed towards maintaining and improving the quality of environmental health in Mississippi, the nation, and the world. Its goal is to facilitate the development, implementation, and administration of focused and of multi-disciplinary efforts in research, training, and service in the areas of environmental health, with consideration of both human health and ecosystem health. One of the primary focus areas in environmental health is discerning the effects of environmentally relevant chemicals on organisms and on ecosystems, and, conversely, the effects that organisms and ecosystems have on these chemicals. The Center provides an interdisciplinary mechanism for uniting researchers from different MSU administrative units to work on common problems which require interdisciplinary solutions. Participants have appointments in the College of Veterinary Medicine, the College of Arts and Sciences, the Mississippi Agricultural and Forestry Experiment Station, the Mississippi State Chemical Laboratory, and the School of Forest Resources. Major disciplines represented are biochemical toxicology, neurotoxicology, immunotoxicology, analytical chemistry, pharmacology, water quality, ecology, microbiology (bioremediation), and food safety. The Center unites MSU faculty members with appropriate expertise into teams which can respond to environment health issues when general or specific needs arise.

**Janice E. Chambers, Ph.D.**, D.A.B.T., Director

### ANALYTICAL SUPPORT and FOOD SAFETY LABORATORY

Office: Wise Center

The Analytical Support and Food Safety Laboratory (ASFSL) provides specialized chemical analyses for faculty of Mississippi State University. Where the interests of the faculty and agencies outside of Mississippi State University coincide, the ASFSL will also provide analyses for these agencies. The agencies include industry; agribusiness; municipal, county, state, and federal governments. Operating procedures comply with Good Laboratory Practices and regulations of federal agencies. The laboratory staff will participate with university faculty in preparing proposals for funding and will serve as a resource for graduate training on funded projects. The laboratory is located in the College of Veterinary Medicine's Wise Center.

**Scott Boone, Ph.D.**, Assistant Laboratory Director

**Kristina Hansson Lebbin**, Laboratory Project Manager

### FLOW CYTOMETRY FACILITY

Office: Wise Complex, Room R2217

The Flow Cytometry Facility is a University-wide facility supported by the College of Veterinary Medicine. The facility has a two-fold purpose of providing flow cytometry support of scientists at Mississippi State University and consultation on research problems involving flow cytometry. The facility is staffed by two trained technicians.

**A. Jerald Ainsworth, Ph.D.**, Director

## OTHER UNITS

### FOOD SCIENCE INSTITUTE

Mississippi State University has an active program of research and teaching in the broad area of Food Science and Technology and Food Safety. Research in Animal and Dairy Science, Human Science, Poultry Science, Microbiology, Biochemistry and Molecular Biology, Biotechnology, Dairy Manufacturing, Human Nutrition, Agricultural Economics, Seafood and Catfish Processing, Sensory Analysis, Agricultural and Biological Engineering, Horticultural Products Processing, Enology, and Food Engineering has been in progress for several years. Since 1966, Mississippi State has had an undergraduate teaching program and a Master of Science program in Food Science and Technology. In 1975, the doctorate in this area was approved. Both programs are interdisciplinary and currently involve the departments of Food Science and Technology, Animal and Dairy Sciences, Poultry Science, and the School of Human Sciences.

Since the research and teaching programs are interdisciplinary in nature, their effectiveness depends upon good coordination and cooperation. The Food Science Institute was authorized by the Board of Trustees of the Institutions of Higher Learning in the Spring of 1968, and given the responsibility of coordinating the various research and teaching programs in Food Science and Technology. The major functions of the Institute are as follows:

- (1) To stimulate and coordinate new or expanded research and extension programs;
- (2) To assist faculty and staff members in broadening the base of research support in food sciences;
- (3) To serve as the central vehicle of communication at MSU for students, staff, industry and government agencies with an interest in food sciences and related areas.

The Food Science Institute has been designated the "flag-ship" for food processing in Mississippi. The area of Food Science, including food safety, is one of the five core areas of interest within the Division of Agriculture, Forestry, and Veterinary Medicine. The Board of Trustees of Institutions of Higher Learning, the University, the Division of Agriculture, Forestry and Veterinary Medicine, the faculty and staff of the Food Science Institute, the Department of Food Science and Technology, the Food and Fiber Center of the Cooperative Extension Service, and the other cooperating departments and schools are all committed to making the Food Science and Technology program one of the excellent ones in the U.S.

**Robert W. Rogers, Ph.D.**, Animal and Dairy Sciences; Food Science and Technology

**Thomas G. Althen, Ph.D.**, Animal and Dairy Science

**Linda S. Andrews, Ph.D.**, Coastal Research & Extension

**Hart Bailey, Ph.D.**, Veterinary Science

**David Burrage, Ph.D.**, Coastal Research & Extension

**Sylvia Byrd, Ph.D.**, Human Sciences

**T. C. Chen, Ph.D.**, Poultry Science

**Yo Shen Chen, Ph.D.**, Food Science and Technology

**Patti Coggins, Ph.D.**, Food Science and Technology

**Stewart Dean**, Food and Fiber Center

**Wanda Dodson, Ph.D.**, Human Sciences

**Zahurul Haque, Ph.D.**, Food Science and Technology

**Bill Herndon, Ph.D.**, Agricultural Economics

**Anna Hood, Ph.D.**, Food and Fiber Center

**Darren Hudson, Ph.D.**, Agricultural Economics

**Rebecca Kelley, Ph.D.**, Human Sciences

**Menghe H. Li, Ph.D.**, Delta Research & Extension

**Jason Lusk, Ph.D.**, Agricultural Economics

**Bruce Manning, Ph.D.**, Delta Research & Extension

**Mike Martin, Ph.D.**, Food Science Technology

**Melissa Mixon, Ph.D.**, Human Sciences

**Charlotte Oakley, Ph.D.**, Human Sciences

**Benedict Posadas, Ph.D.**, Coastal Research & Extension

**Edwin Robinson, Ph.D.**, Delta Research & Extension

**Brian Rude, Ph.D.**, Animal and Dairy Science

**Cary Sutphin**, Human Sciences

**Yvonne Thaxton, Ph.D.**, Poultry Science

**Craig Tucker, Ph.D.**, Delta Research & Extension

**Filip To, Ph.D.**, Agricultural & Biological Engineering

**Amy Vickery, Ph.D.**, Continuing Education

**Chingling Wang, Ph.D.**, Veterinary Medicine

**Charles White, Ph.D.**, Food Science and Technology

### THE MISSISSIPPI QUARTERLY

Office: 213 Lee Hall

The *Mississippi Quarterly* is a publication of the College of Arts and Sciences and the Office of Research. Founded in 1948, it is a refereed, scholarly journal which publishes articles on the life and culture of the South, past and present. In addition to the four regular issues, the journal publishes an annual "Checklist of Scholarship in Southern Literature" as a supplement.

**Robert L. Phillips, Jr., Ph.D.**, Editor

**Jerry T. Williams, B.A.**, Associate Editor

**W. Edwin Ellis, Ph.D.**, Technical Editor

**Jonathan R. Smith, Ph.D.**, Associate Editor

### OFFICE of the STATE CLIMATOLOGIST

Office: 201 Hilbun Hall

A State Climatologist for Mississippi was appointed in the Department of Geosciences at MSU in 1983. The State Climatologist serves as the focal point for climatic information and analysis within the state. The State Climatologist communicates data and information, performs research, and monitors current climate conditions and places events in historical perspective.

**Charles L. Wax, Ph.D.**, State Climatologist for Mississippi

### THE SPATIAL INFORMATION TECHNOLOGIES LABORATORY

The term "Spatial Information Technologies" (SIT) describes any information collection and/or manipulation technologies used to determine the physical characteristics and spatial relationships of objects (e.g. trees, stands, soil types, woodyards, wildlife food plots, lakes, streams, roads, buildings). SIT includes the disciplines of: Remote Sensing (Satellite Data, Aerial Imagery), Global Positioning Systems (GPS), and Geographic Information Systems (GIS).

The Spatial Information Technologies Laboratory (SITL) is located in the College of Forest Resources/Forest and Wildlife Research Center (CFR/FWRC). It fulfills a broad commitment to excellence in research and teaching in SIT. The SITL has computer facilities that make it unique for forestry research in Mississippi. The Lab computing environment includes high-performance Unix workstations, PC's, color printers and plotters. The SITL supports a complete array of GIS, image analysis, and statistics software packages. GPS units and accompanying software are also used for collection of location data in the field.

This powerful combination of computer hardware and integrated software gives faculty, staff, and students at the CFR/FWRC unprecedented capabilities for natural resource mapping, assessment, and monitoring. Researchers are now applying these facilities to answer resource availability questions by using them for vegetation mapping and assessment and economic analysis of forest resources. Data available at the SITL for this work include: a complete GIS of Mississippi obtained from the Mississippi Automated Resource Information System (MARIS), digital satellite data coverage of the entire state, and an archive of recent and historic aerial photography and maps of large parts of the state. Current research projects include: use of satellite imagery in forest inventory systems, combining high-resolution imagery with LIDAR data for forest tract assessment, and classifying forest stands using digital frame camera imagery.

The SITL supports resident instruction offered by the Department of Forestry through transfer of research results into courses such as Forest Photogrammetry, Remote Sensing Applications, and GIS for Natural Resource Management. Graduate programs are offered that lead to Masters and Doctor of Philosophy degrees with concentration in SIT.

For more information on the SITL, research, or academic programs, contact:

**Dr. David L. Evans**, Department of Forestry

## MISSISSIPPI DEPARTMENT of AGRICULTURE and COMMERCE - BUREAU of PLANT INDUSTRY

Office: Mississippi Department of Agriculture and  
Commerce Building on Stone Boulevard

The Bureau of Plant Industry is a division of the Mississippi Department of Agriculture and Commerce.

The Bureau is established under the Mississippi Plant Act, Sections 69-25-1 through 69-25-47, Mississippi Code 1972, and is responsible for protecting the agricultural and horticultural interests of the state from the introduction into and dissemination within the state of injurious insects and plant diseases. The Bureau of Plant Industry is the Plant Protection and Quarantine Division of the Mississippi Department of Agriculture and Commerce. An Advisory Board is established by law to advise the Commissioner of Agriculture on matters regarding the Bureau, especially in adopting rules and regulations.

The Bureau of Plant Industry Advisory Board is composed of the following: the State Chemist; the head of the Department of Entomology and Plant Pathology, Mississippi State University; the head of the Department of Plant and Soil Sciences, Mississippi State University; Director of Agriculture and Applied Sciences, Alcorn State University; and for a period of two years, the following: one Soil Conservation District Commissioner appointed by the Commissioner; two residents of Mississippi who engage in the production of any crop, appointed by the Commissioner; one resident of Mississippi who is a commercial pesticide applicator licensed by the Bureau of Plant Industry, appointed by the Commissioner; one resident of the state of Mississippi who is a restricted use pesticide registrant or an employee of such person, appointed by the Commissioner, one resident of the state of Mississippi who is either a wholesale or retail horticulturist, appointed by the Commissioner; and one resident of the State of Mississippi who is a licensed landscape contractor appointed by the Commissioner.

The Bureau is responsible for administration and enforcement of statutes as follows:

1. The Mississippi Plant Act, - Sections 69-25-1 through 69-25-47.
2. Regulation of Professional Services - Sections 69-19-1 through 69-19-11.
3. Mississippi Pesticide Law - Sections 69-23-1 through Sections 69-23-27.
4. Mississippi Pesticide Application Act - Sections 69-23-101 through 69-23-133.
5. Crop Spraying and Licensing of Aerial Applicators - Sections 69-21-1 through 69-21-27.
6. Mississippi Boll Weevil Management Act - Sections 69-37-1 through 69-37-33.
7. Mississippi Bee Disease Act - Sections 69-25-101 through 65-25-109.
8. Mississippi Commercial Feed Law, - Sections 75-45-151 through 75-45-195.
9. Mississippi Pure Seed Law, - Sections 69-3-1 through 69-3-27.
10. Mississippi Fertilizer Law, - Sections 75-47-1 through 75-47-39.
11. Mississippi Soil and Plant Amendment Law, - Sections 69-24-1 through 69-24-27
12. Mississippi Agricultural Liming Materials Act, - Sections 69-39-1 through 69-39-19.

### Major Programs

1. Under the provisions of the Mississippi Plant Act, plant quarantine programs are in operation, including quarantine programs for inspection and certification of nursery stock, sweet potatoes and various other plants, crops, machinery, and other articles which may be responsible for the spread of injurious insects and plant disease.
2. Regulation of Professional Services - Receiving fees for entomological, plant pathological, horticultural, tree surgery and weed control work, consultant services, and soil classifiers. This statute requires persons engaged in the above mentioned professions to be licensed by the Bureau in order to protect the citizens of this state from fraudulent practices. People engaged in these professions are required to meet professional standards through training and/or experience, exhibit a knowledge of the profession through examination, and in some cases be required to meet bond and/or insurance requirements to guarantee faithful performance of services.
3. Mississippi Pesticide Law - This statute requires registration of all pesticides sold or distributed within the state, prohibits misuse of these materials, provides for restricting certain hazardous uses and allows the Bureau to regulate the use and distribution of pesticides in order to protect the general public. Also, under this program, pesticides are inspected and samples are collected and tested to determine if they meet label guarantee in order to protect users of pesticides from losses due to inferior products.
4. Mississippi Pesticide Application Act - This statute provides for the use and application of those pesticides which are restricted due to their hazardous nature of causing adverse effects on man and the environment unless used by knowledgeable and competent applicators. Those pesticides uses of which are restricted may be used only by, or under the supervision of certified applicators. In order for pesticide applicators to be certified to use restricted use pesticides, they must demonstrate competency in the use of pesticides by attending training courses and/or passing written examinations. This program meets the requirements set forth by the U. S. Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act. Without this applicator certification program, the citizens of this state, especially the agricultural and industrial users of pesticides, would be denied the use of many pesticides which are essential for these users.
5. Regulation of Crop Spraying by Aircraft - This statute requires all aerial applicators of Hormone-Type herbicides to be licensed by the Bureau of Plant Industry. Hormone herbicides such as 2,4-D, by their hazardous nature may cause damage to susceptible crops from drift. These pesticides are used for brush control on forest lands, weed control in pastures, and small grains, and are used extensively for weed control in rice production. Small amounts of these materials, if allowed to drift to non-target susceptible crops such as cotton, soybeans, vegetables, etc., will cause damage. As required by the statute, aerial applicators of these pesticides are required to exhibit a knowledge of these materials, their characteristics, application techniques and hazards by passing a written examination for a license. Also, they must meet liability insurance requirements and meet certain safety requirements.
6. The Mississippi Boll Weevil Act - This statute provides for methods and procedures to be used for boll weevil suppression, pre-eradication and eradication programs; to define certain terms; to certify a statewide Cotton Growers Organization which will represent cotton growers in defining boll weevil management regions and types of boll weevil management programs desired; to provide for a referendum in each region to determine whether the majority of cotton growers within the region wish to participate in such management programs; to authorize assessments on cotton growers in the regions which have approved by referendum such assessments and boll weevil management programs; to authorize the Department of Agriculture and Commerce to collect such assessments and to impose penalties for failure to pay assessments; to authorize the Department of Agriculture and Commerce to promulgate regulations to effectuate the purposes of this Act; and for related purposes.
7. Mississippi Bee Disease Act - This statute provides for inspection of apiaries in order to prevent the introduction into and dissemination within the state of infectious and contagious diseases and parasites to honey bees. Under this program, apiaries are inspected for American foulbrood, other serious bee diseases, and parasites. Migratory beekeepers, queen breeders, and producers of package bees are required to have inspection certificates for shipment of honey bees and used beekeeping equipment.
8. Mississippi Commercial Feed Law - This statute requires registration of all feed ingredients and mixed feeds distributed for sale in the state. All feed registrants are required to report tonnage sold and pay inspection fees to the department. Under this program feed and feed ingredients are inspected and samples are collected and tested to determine if they meet label requirements and guarantee in order to protect users of feed from losses due to inferior products.
9. Mississippi Pure Seed Law - This statute requires the license of all sellers of seed in and into the state. It also provides for the operation of the State Seed Testing Laboratory to test official samples of seed sampled to confirm label guarantees. The seed regulatory official also cooperates in enforcement of the Federal Seed Act.
10. Mississippi Fertilizer Law - This statute requires registration of all brands and grades of fertilizer and ingredients for sale in the state. All fertilizer registrants are required to report tonnage and pay inspection fee to the department. Under this program fertilizer and custom blends are inspected and samples are collected and tested to determine if they meet label requirements and guarantee in order to protect users of fertilizer from losses due to inferior products.
11. Mississippi Soil and Plant Amendment Law - This statute requires registration of all products offered for sale which promote plant growth by means other than supplying a recognized plant food element, or which is applied to plants or seed for the purpose of improving germination, growth, yield, product quality, reproduction, flavor or other desirable characteristics of plants.
12. Mississippi Agricultural Liming Materials Act - This statute requires registration of all products which reduce soil acidity. Under this program samples are collected and tested to determine if they meet label requirements and guarantee in order to protect users of liming products from losses due to inferior products.

To carry out its various functions, the Bureau of Plant Industry has a headquarters staff at Mississippi State consisting of technically trained personnel and the needed secretarial force. A staff of district entomologists is assigned to territories on a basis of work loads in those areas.

#### Headquarters Staff:

**Edwin G. Dyess, B.S., M.S.**, Director and State Entomologist  
**Mike Tagert, B.S., M.S.**, Deputy Director  
**Harry Fulton, B.S., M.S.**, Director Pesticide Division & State Apiarist  
**Lee Daughtry, B.S.**, Director, Seed Division  
**Harry Ballard, B.S., Director**, Feed and Fertilizer & Lime Programs  
**James Haskins, B.S., M.S.**, Branch Director, Commercial Certification and Pest Control Licensing  
**Benny Graves, B.S., M.S.**, Branch Director, Plant Certification  
**Tommy McDaniel, B.S., M.S.**, Branch Director, Private Certification, Dealer Licensing and EPA Programs  
**John Corbon, B.S., M.S.**, Branch Director, U.S.D.A. Programs  
**Patti Drapala, B.A., B.B.A., M.P.P.A.**, Director, Public Relations  
**Keith Davis, B.S., M.S.**, Branch Manager, Pesticide Compliance and EPA Programs  
**Rusty Crowe, B.S., M.S.**, Environmental Scientist III, Pesticides, Groundwater, Endangered Species, Worker Protection Standard, and Waste Pesticide Collection and Container Disposal Programs

#### District Entomologists:

**Randy Boyle, B.S.**, Mississippi State

**Brad Banes, B.A.**, Jackson  
**Mike Bayles, B.S.**, Prentiss  
**Guy Buford, B.S.**, Brookhaven  
**Nate Brown, B.S.**, Braxton  
**Kenneth Calcote, B.S.**, Gulfport  
**Mike Foresman, B.S.**, Senatobia  
**Milton R. Henderson, B.S., M.S.**, Laurel  
**Jim Flautt, B.S.**, Greenwood  
**Bruce Jackson, B.S.**, Decatur  
**Carl W. Jones, B.S.**, Grenada  
**Mark Kelley, B.S.**, Tupelo  
**Tommy Kennedy, B.S.**, Corinth  
**Mike Ledlow, B.S.**, Flora  
**Chad Wade, B.S.**, Vandeave  
**Charles H. Wilson, B.S., M.S.**, Hattiesburg  
**David Farley**, Regulatory Inspector

#### USDA Records Inspector

**Butch Alpe**, Mississippi State

## MISSISSIPPI STATE CLIMATOLOGY LABORATORY

Office: 314 Hilbun Hall

The MSU Climatology Laboratory (MSUCL) was created in 1987 to supply the university and the surrounding area with real-time weather information. The Climatology Laboratory is also the focal point of the Broadcast Meteorology Program (BMP) and the Operational Meteorology Program (OMP) within the Department of Geosciences.

The Climatology Laboratory is equipped with state-of-the-art meteorological hardware and software systems in support of the teaching, research, and service missions of the department. The Laboratory includes four WSI Weather Producer workstations and four Weather Central Genesis workstations used for the production of television and radio weathercasts, thirteen Celeron 550Mhz workstations, and a Baron Radar system featuring FasTrac/NexTrac and VIPIR which processes near-real time radar data from Columbus (MS), Jackson (MS), Memphis (TN), and Birmingham (AL). An Automated Weather Systems instrument group provides instantaneous weather conditions and video of the current weather from atop Hilbun Hall. The Climatology Laboratory also houses our Broadcast Studio, fully equipped with linear and non-linear digital editing equipment for the production of television weathercasts.

The MSUCL also serves as a base of operations for the North Mississippi Severe Storms Intercept Team (NOMISSIT). NOMISSIT members are highly-trained operational meteorology students who pursue severe local storms in the field in order to provide the National Weather Service, and local community, with the most up-to-date severe weather information possible. Annual field expeditions are also undertaken; to the Great Plains to survey severe storms during the spring, and to the Gulf and Atlantic coast in pursuit of hurricanes during the late summer and fall.

The MSU Climatology Laboratory provides a valuable resource for undergraduate and graduate students, as well as off-campus students through the Division of Continuing Education, in support of their education and training as operational meteorologists. Graduates of our program go on to careers in broadcast meteorology, private industry, or government service.

Daily weather forecasts developed in the Climatology Laboratory are provided to the public through the Bulldog Forecast Line (662-325-2915); radio station WMSV (FM 91.1); through television broadcasts on Bulldog Weather (MSU), and WOBV-TV (Starkville); and through live "webcasts" on the World Wide Web.

Research supported by the Climatology Laboratory includes topics in Broadcast Meteorology, human biometeorology, synoptic meteorology, tropical meteorology, severe local storms, and influences of mesoscale land-surface-atmosphere interactions on deep convection. The Lab also supports the Office of the State Climatologist and is opened on a limited basis to tour groups.

## MISSISSIPPI STATE SEED TESTING LABORATORY

The State Seed Testing Laboratory is a facility operated by the State Department of Agriculture in cooperation with Mississippi State University. Its primary function is to test official seed samples submitted by inspectors of the State Department of Agriculture in connection with the enforcement of the Mississippi Pure Seed Law. The laboratory also serves as the official testing laboratory for the Mississippi Seed Improvement Association.

In addition, the laboratory operates as a service department for farmers and seed merchants. Seeds submitted for analysis are tested for purity, germination and noxious weeds. Seed merchants are charged a nominal fee. Resident farmers are entitled to have one sample of each kind tested free in any calendar year, but for each additional sample a small fee is charged.

The State Seed Testing Laboratory is in the Mississippi Department of Agriculture and Commerce Building on the west side of Stone Boulevard along with the Division of Plant Industry.

**Lee Daughtry, B.S.**, Director/Seed Division  
**Anna V. Barron**, Administrative Assistant IV  
**Kathy M. Collier**, Seed Analyst II

**Tracy S. Gregory**, Secretary Principal  
**Herman S. Tomlinson**, Administrative Assistant V

## USDA AGRICULTURAL RESEARCH SERVICE

### Southern Insect Management Research Unit

The mission of the Integrated Pest Management Research Unit is to expand the knowledge of the biology of various cotton insects and turn this knowledge into sound, profitable technology for detecting, estimating, suppressing or eradicating populations of pest species. In the technologies developed, a major emphasis is placed on alternative control methods that avoid dependence on pesticides alone. The current program is in keeping with the ARS position on Integrated Pest Management.

**Eric J. Villavaso, B.S., M.S., Ph.D.**, Research Entomologist  
**William L. McGovern, B.A., M.S., Ph.D.**, Entomologist

**Robert G. Jones, B.S. M.S., Ph.D.**, Entomologist (APHIS)

### Biological Control and Mass Rearing Research Unit

The mission of the Biological Control and Mass Rearing Research Unit is to conduct basic and applied research on the production and use of natural enemies for control of agricultural pests. Emphasis is placed on development of *in vivo* and *in vitro* mass rearing methods and technology. Related research is on field biology/ecology and economic use of parasites, predators and pathogens as biological control agents. Methods that include classical biological control (introduction of exotic natural enemies), augmentation, and conservation of natural enemies are developed and integrated with other pest management techniques to help solve pest problems.



**Donald A. Nordlund, B.S.F.R., M.S.**, Research Leader and Supervisory Research Entomologist  
**Janet Alverson, B.S., D.V.M., Ph.D.**, Research Microbiologist

**Allen C. Cohen, B.S., M.S., Ph.D.**, Research Entomologist  
**Eric W. Riddick, B.S., M.S., Ph.D.**, Research Entomologist  
**Gay G. McCain, B.S.**, Supervisory Entomologist

### USDA CROP SCIENCE RESEARCH LABORATORY

In the Crop Science Research Laboratory of the U. S. Department of Agriculture basic and applied research is conducted by scientists representing many scientific disciplines. The major objectives of the research programs are to provide increased crop production with greater efficiency by developing cropping systems, pest resistant strains with improved agronomic traits, and decision-making models to reduce costs and conserve natural resources.

Major research lines include corn host plant resistance, genetics and precision agriculture, waste management and forage research.

**Johnie N. Jenkins, B.S., M.S., Ph.D.**, Director  
**Farid Bal'a, B.S., M.S., Ph.D.**, Microbiologist  
**Thomas D. Brooks, B.S., M.S., Ph.D.**, Geneticist  
**Franklin E. Callahan, B.S., Ph.D.**, Plant Physiologist  
**Michael J. Clements, B.S., M.S., Ph.D.**, Geneticist  
**Timothy Fairbrother, B.S., M.S., Ph.D.**, Animal Scientist  
**Leigh K. Hawkins, B.S., M.S., Ph.D.**, Plant Physiologist  
**Paul A. Hedin, B.A., M.S., Ph.D.**, Collaborator  
**Jack C. McCarty, Jr., B.S., M.S., Ph.D.**, Agronomist  
**James M. McKinion, B.S., M.S., Ph.D.**, Electronics Engineer  
**Michael R. McLaughlin, B.S., M.S., Ph.D.**, Plant Pathologist

**Dana Miles, B.S., M.S.**, Chemical Engineer  
**Phillip R. Owens, B.S., M.S., Ph.D.**, Soil Scientist  
**Robert G. Pratt, B.A., M.S., Ph.D.**, Plant Pathologist  
**John J. Read, B.S., M.S., Ph.D.**, Agronomist  
**Dennis E. Rowe, B.S., M.S., Ph.D.**, Geneticist  
**Sukamar Saha, B.S., M.S., Ph.D.**, Geneticist  
**Haile Tewolde, B.S., M.S., Ph.D.**, Agronomist  
**Thomas D. Brooks, B.S., M.S., Ph.D.**, Geneticist  
**Jeffrey L. Willers, B.S., M.S., Ph.D.**, Entomologist  
**William P. Williams, B.S., M.S., Ph.D.**, Plant Geneticist  
**Gary L. Windham, B.S., M.S., Ph.D.**, Plant Pathologist

### USDA SOUTHERN RESEARCH STATION

Two research units of the Southern Research Station, U.S. Department of Agriculture, Forest Service, are located in the Forestry Sciences Laboratory, 201 Lincoln Green, in the southwest portion of the campus, and two in the Forestry Building. Basic and applied research on the physiology and technology of seeds of forest tree species is conducted by the staff of the Tree Seed Project. The Forestry Inventory and Analysis Unit Personnel conduct the continuing forest resources survey for the midsouth states. The Wood Products Insect Research Unit personnel conduct basic and applied research on termites.

**Center for Bottomland Hardwoods Research - Seed Research**  
**Franklin T. Bonner, B.S., M.F., D.F.**, Plant Physiologist, Emeritus  
**J. A. Vozzo, B.S., M.S., Ph.D.**, Plant Physiologist  
**Kristina Connor, Ph.D.**, Plant Physiologist, Location Manager  
**Jillian B. Donahoo, Biological Technician**

**Forest Inventory and Analysis:**  
**David V. Few, B.S.**, Supervisory Forester  
**David M. Morgan, B.S.**, Forester  
**Victor A. Rudis, B.S., M.S.**, Research Forester

**Research Support Services:**  
**Charlene Walker, Purchasing Agent**

**Forest Inventory and Analysis**  
**Haimes E. Critz, Computer Specialist**  
**Andrew J. Hartsell, B.S.F.**, Forester  
**Dennis M. Jacobs, B.S.F., M.S.F.**, Research Forester

**William H. Cooke, III, B.S., M.S., Ph.D.**, Research Forester  
**Sam Lambert, B.S.F.**, Forester  
**Sara Combs, B.S.F.**, Forester

**Wood Products Insect Research**  
**Terence L. Wagner, B.S., M.S., Ph.D.**, Supervisory Research Entomologist; Project Leader

**Joseph E. Mulrooney, B.S., M.S., Ph.D.**, Research Entomologist  
**Chris J. Peterson, B.S., M.S., Ph.D.**, Research Entomologist  
**Thomas G. Shelton, B.S., M.S., Ph.D.**, Research Entomologist  
**Blossie Boyd, B.S.**, Biological Science Technician  
**Craig Bell, B.S.**, Biological Science Technician  
**Don I. Fye, B.S.**, Biological Science Technician  
**Earnest L. Scruggs, B.S.**, Biological Science Technician  
**Sarah D. Uharriet, Support Services Specialist**  
**Stephanie S. Pitts, Office Automation Assistant**

### USDA SOUTH CENTRAL POULTRY RESEARCH LABORATORY

The South Central Poultry Research Laboratory of the U.S. Department of Agriculture was dedicated May 29, 1965. Located on the west side of the campus on Spring Street, it is a center for the study of disease, environmental, and waste management factors that affect the poultry industry. Research facilities include the office-laboratory building, environmental chambers, disease isolation units and seven poultry research houses. The research is being conducted by specialists in the fields of Engineering, Molecular Biology, Poultry Science, and Veterinary Science of Agricultural Research Service, U.S.D.A., in cooperation with Mississippi State University and other interested universities.

**Scott L. Branton, D.V.M., M.S., Ph.D.**, Veterinary Medical Officer; Acting Research Leader  
**Stephanie D. Collier, B.S., M.S., Ph.D.**, Molecular Biologist  
**Dana M. Miles, B.S., M.S.**, Chemical Engineer

**John D. Simmons, B.S., M.S., Ph.D.**, Agricultural Engineer  
**Jeff D. Evans, B.S., M.S., Ph.D.**, Molecular Biologist  
**William B. Roush, B.S., M.S., Ph.D.**, Poultry Management

### USDA/APHIS/WS NATIONAL WILDLIFE RESEARCH CENTER

103 Scales Building

The National Wildlife Research Center (NWRC) is the research arm of the Wildlife Services program of the U.S. Department of Agriculture/Animal and Plant Health Inspection Service. NWRC is the U.S. federal organization responsible for conducting research to resolve conflicts between humans and wildlife. The NWRC Mississippi field station was established by Congressional mandate in 1988 to develop methods for reducing bird depredations at aquaculture farms in the southern United States. Personnel at the NWRC Mississippi field station study the biology, impact, and management of a variety of captive and free-ranging avian species, including cormorants, pelicans, and wading birds.

**Scott Werner, Ph.D.**, Project Leader/Supervisory Wildlife Biologist (Research)  
**D. Tommy King, M.S.**, Research Wildlife Biologist  
**Susan C. Smith, B.S.**, Program Support Assistant

**Brian S. Dorr, M.S.**, Biological Science Technician (Wildlife)  
**Paul B. Fioranelli, B.S.**, Biological Science Technician (Wildlife)  
**Billy Scott Woodruff, B.S.**, Biological Science Technician (Wildlife)

### USDA/APHIS/ WILDLIFE SERVICES

200 Thompson Hall

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services (WS) program is legislatively mandated to provide assistance in the prevention and control of wildlife damage. WS programs are directed toward the protection of agriculture, property, industrial resources, and public health and safety, and natural resources. Services include technical assistance or direct operational control. Technical assistance consists of advice, recommendations, training, information transfer, or materials provided to others for the resolution of problems. In contrast, direct operational control activities are conducted by WS personnel through cooperative wildlife damage management programs. These two types of assistance are available upon request to individuals or government agencies.

**Kris Godwin, B.S., M.S.**, State Director

**Kevin Sullivan, B.S., M.S.** District Supervisor

**Cherri Golden, B.S.**, Budget Analyst  
**Johnny Carter**, Wildlife Specialist  
**Misty Tanner**, Secretary

### **UNIVERSITY PRESS of MISSISSIPPI**

The University Press of Mississippi was founded in 1970 to encourage the dissemination of the results of research and study through the publication of scholarly works. Functioning as the scholarly publishing arm of the state-supported universities in Mississippi, the University Press is governed by a Board of Directors made up of two representatives from each of the eight state universities, one representative from the Board of Trustees of Institutions of Higher Learning, and the director of the Press, *ex officio*.

The University Press normally publishes approximately fifty books each year. Primary areas of interest are Mississippi history, literature, and culture, but manuscripts in all areas of study are welcomed.

Administrative offices of the University Press are located in the Education and Research Center of Mississippi, 3825 Ridgewood Road, Jackson, Mississippi.

## MISSISSIPPI STATE UNIVERSITY ENROLLMENT SUMMARY

### Non-Duplicated Enrollment

#### Starkville Campus Only

#### Fall and Spring Semesters, 2001-2002

	Men	Women	Total				
Agriculture & Life Sciences				Juniors	181	391	
Freshmen	67	120		Seniors	396	719	
Sophomores	134	145		Graduates	222	607	
Juniors	171	170		Total	932	2039	2,971
Seniors	388	259		Engineering			
Graduates	160	117		Freshmen	276	73	
Total	920	811	1,731	Sophomores	274	82	
Architecture				Juniors	372	78	
Freshmen	32	22		Seniors	760	170	
Sophomores	26	14		Graduates	442	130	
Junior	28	13		Total	2124	533	2,657
Seniors	84	38		Forest Resources			
Graduates	7	3		Freshmen	25	3	
Total	177	90	267	Sophomores	50	7	
Arts & Sciences				Juniors	60	6	
Freshmen	207	362		Seniors	140	23	
Sophomores	240	417		Graduates	115	26	
Juniors	319	426		Total	390	65	455
Seniors	629	789		Veterinary Medicine			
Graduates	346	343		Animal Health Technology			
Total	1741	2337	4,078	Freshmen	0	0	
Business & Industry				Sophomores	0	7	
Freshmen	186	105		Juniors	1	3	
Sophomores	329	184		Seniors	0	3	
Juniors	405	227		Veterinary Medicine			
Seniors	734	403		First Year	14	35	
Graduates	158	101		Second Year	17	32	
Total	1812	1020	2,832	Third Year	22	26	
Accountancy				Fourth Year	15	32	
Freshmen	22	43		Graduates	16	14	
Sophomores	25	44		Total	85	152	237
Juniors	33	52		Unclassified & Interdisciplinary			
Seniors	68	64		Undergraduate	707	498	
Graduates	22	29		Graduate	154	235	
Total	170	232	402	Continuing Education	37	33	
Business & Industry and Accountancy				Total	898	766	1664
Total	1982	1252	3,234	Total Session 2001-2002			
Education				(Fall and Spring Semester)	9,249	8,045	17,294
Freshmen	40	109		Total Summer 2002 ( 3,867 Males, 3,696 Females)		7,563	
Sophomores	93	213					

## DISCLOSURE STATEMENT

### Student Right-to-Know Act (P.L. 101-542)

#### Graduation Rate of Entering Freshmen

The graduation rate for all students entering Mississippi State University as first-time freshmen during the 1995-96 academic year was 53.0 percent. This graduation rate represents the percentage of students entering Mississippi State University as first-time (i.e. new) full-time degree-seeking freshmen during the 1995-96 academic year who subsequently were awarded baccalaureate degrees by Mississippi State University within six calendar years (i.e., through August 2001). This rate was calculated under definitions and procedures established by the National Collegiate Athletic Association (NCAA), and reported to the NCAA on the University's 2001 Graduation Rate Disclosure Form in March 2002.

Specific regulations and guidelines for the calculation, reporting, and disclosure of graduation rate information required under the Student Right-to-Know Act have not yet been issued by the Department of Education. Definitions of the entering student cohort in the Department of Education's proposed regulations (Federal Register, July 10, 1992) and the NCAA Graduation Rate Disclosure Form differ slightly. However, the University has determined that the graduation rate information in the annual NCAA report is substantially comparable to the information required under the Student Right-to-Know Act, and is reporting that information at this time pending release of final federal reporting regulations. The graduation rate information reported above is accurate and complete as of the date of publication of the 2003-04 Bulletin.

FALL 2002 ON-CAMPUS ENROLLMENT

SOUTHEASTERN			
STATE	WOMEN	MEN	TOTAL
Alabama	308	382	690
Arkansas	58	72	130
Florida	78	94	172
Georgia	63	95	158
Kentucky	24	32	56
Louisiana	78	118	196
North Carolina	15	18	33
South Carolina	24	19	43
Tennessee	336	433	769
Texas	73	88	161
Virginia	26	52	78
Total Southeastern	1,078	1,395	2,474

UNITED STATES OUTSIDE SOUTHEAST			
STATE	WOMEN	MEN	TOTAL
Alaska	3	2	5
Arizona	13	11	24
California	28	41	69
Colorado	9	12	21
Connecticut	3	9	12
Delaware	6	1	7
Hawaii	6	4	10
Idaho	6	5	11
Illinois	23	59	82
Indiana	8	19	27
Iowa	5	14	19
Kansas	14	13	27
Maine	7	6	13
Maryland	21	12	33
Massachusetts	5	10	15
Michigan	10	21	31
Minnesota	5	15	20
Missouri	25	58	83
Montana	1	3	4
Nebraska	4	6	10
Nevada	2	8	10
New Hampshire	1	5	6
New Jersey	11	10	21
New Mexico	3	5	8
New York	19	27	46
North Dakota	1	1	2
Ohio	26	24	50
Oklahoma	3	11	14
Oregon	2	11	13
Pennsylvania	21	36	57
Rhode Island	2	3	5
South Dakota	1	4	5
Utah	7	8	15
Vermont	0	1	1
Washington	10	8	18
West Virginia	4	9	13
Wisconsin	8	22	30
Wyoming	1	3	4
District of Columbia	0	3	3
U.S. Citizens in Foreign Countries	3	7	10
Total Outside Southeast	307	512	819

MISSISSIPPI TOTALS		
MEN		6,095
WOMEN		5,674
TOTAL		11,769

INTERNATIONAL STUDENTS			
Country	WOMEN	MEN	TOTAL
Argentina	1	1	2
Azerbaijan	1	0	1
Bahamas	0	1	1
Bangladesh	2	3	5
Belgium	1	0	1
Belize	1	0	1
Brazil	4	2	6
British Virgin Islands	0	1	1
Cambodia	1	0	1
Cameroon	0	2	2
Canada	12	12	24
Chile	0	2	2
China	58	88	146
Colombia	3	5	8
Croatia	0	0	0
Czech Republic	0	1	1
Ecuador	4	2	6
Egypt	1	2	3
France	0	6	6
Germany	1	0	1
Ghana	0	2	2
Honduras	5	8	13
Hong Kong	1	3	4
Hungary	1	0	1
India	54	210	264
Indonesia	1	4	5
Iran	1	2	3
Ireland	1	1	2
Italy	1	1	2
Jamaica	1	1	2
Japan	6	1	7
Jordan	1	1	2
Kenya	2	1	3
Korea, South	24	37	61
Kuwait	0	2	2
Lebanon	0	1	1
Malaysia	8	17	25
Mexico	0	1	1
Mongolia	1	0	1
Nepal	0	3	3
Nicaragua	0	2	2
Nigeria	2	2	4
Norway	0	1	1
Pakistan	5	6	11
Peru	1	0	1
Philippines	4	0	4
Poland	2	3	5
Portugal	0	0	0
Puerto Rico	0	0	0
Qatar	0	0	0
Romania	1	1	2
Russia	2	4	6
Saudi Arabia	2	8	10
Serbia and Montenegro	1	2	3
Slovakia	0	1	1
South Africa	1	2	3
Sri Lanka	0	3	3
Sweden	3	0	3
Taiwan	9	10	19
Tajikistan	1	0	1
Thailand	8	3	12
Trinidad & Tobago	0	2	2
Tunisia	0	1	1
Turkey	3	4	7
Ukraine	3	3	6
Uzbekistan	1	0	1
United Arab Emirates	1	0	1
United Kingdom	3	3	6
Vietnam	0	1	1
Venezuela	2	5	7
Total International	253	488	741
Total University	6,388	7,205	13,593

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## Offices to Assist You

(All postal addresses are Mississippi State, Mississippi 39762.)

General Information about the University: Director of Enrollment Services, P.O. Box 6334; 662-325-3076

Admissions (requirements and application forms): Director of Admissions, P.O. Box 6305; 662-325-2224

Graduate Admissions: Director of the Office of Graduate Studies, P.O. Box G; 662-325-7400

Student Financial Aid (loans, grants, College Work-Study Program, scholarships): Director of Student Aid, P.O. Box 6035; 662-325-2450

Student Housing and Residence Life: Director of Housing and Residence Life, P.O. Box 9502; 662-325-3557

Orientation programs for new students and parents: Director of Enrollment Services, P.O. Box 6334; 662-325-3076

Student Registration and Records: University Registrar, P.O. Box 5268; 662-325-2022, 325-2662

Career Services Center: Director of the Career Services Center, P.O. Box P; 662-325-3344

Vice President for Student Affairs, P.O. Box DS; 662-325-3045

Provost and Vice President for Academic Affairs, P.O. Box BQ; 662-325-3742

Vice President for Research, P.O. Box 6343; 662-325-3570

Continuing Education (non-credit and credit courses; independent and correspondence study); Dean of Continuing Education, P.O. Box 5247; 662-325-3473

Meridian Campus, 1000 Hwy 19 North, Meridian, MS 39307; 662-325-2100