

# Alabama Agricultural and Mechanical University



## Undergraduate Bulletin

2003-05



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## *Undergraduate Bulletin*

**2003 - 2005**

4900 Meridian Street  
Huntsville, Alabama  
35810

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Alabama A&M University (AAMU) is committed to equal opportunity in employment and education. AAMU does not discriminate in any program or activity on the basis of race, color, religion, sex, age, or national origin, or against any qualified individual with a disability.

The *Alabama A&M University Undergraduate Bulletin (AAMU Bulletin)* is typically published every two years, effective from the beginning of a fall semester to the end of a summer session. The information contained in this publication is current and accurate at the time of printing. However, because changes in economic conditions and/or student program needs may occur at any time within the two-year period, AAMU reserves the right to adjust fee schedules, admission requirements, academic policies, curricula, and other institutional regulations and requirements as necessary. Students will be notified of changes through office and departmental correspondence and/or institutional posting through traditional or electronic means.

Students are expected to read and become familiar with the information contained in the *AAMU Bulletin*. Students are responsible for knowing and understanding regulations and policies, and for meeting all deadlines and requirements of admission, registration and degree programs. Failure to read the information provided will not be considered an excuse for noncompliance.

Alabama Agricultural and Mechanical University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools. Inquiries regarding the institution's accreditation status only may be addressed to:

Commission on Colleges of the Southern Association of Colleges and Schools  
1866 Southern Lane  
Decatur, GA 30033-4097  
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[www.sacscoc.org](http://www.sacscoc.org)



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## GENERAL INFORMATION

### History

Alabama A&M University was organized in 1875 through the untiring efforts of its founder and first President, William Hooper Councill, an ex-slave. The school opened on May 1, 1875, as the Huntsville Normal School. Industrial education was added in 1878, generating widespread attention, which helped to garner financial support from the Slater and Peabody Funds and private contributors. Under the second Morrill Act of 1890, AAMU became a land grant institution and moved to its present location in 1891.

The University has undergone four name changes during its 126 years of existence. Upon earning the junior college status in 1919, the name was changed to the State Agricultural and Mechanical Institution for Negroes. Senior college level courses were added in 1939; the first graduating class received the bachelor's degree in 1941, and the name was changed to Alabama A&M College in 1949. The College became a fully accredited member of the Southern Association of Colleges and Secondary Schools in 1963. Subsequently, the name was changed to Alabama Agricultural and Mechanical University in 1969.

### Mission

Alabama Agricultural and Mechanical University reflects the uniqueness of the traditional land-grant institution combining teaching, research, service, liberal arts, and vocational fields. The University offers baccalaureate, masters, and doctoral level degrees that are compatible with the times to all qualified and capable individuals who are interested in further developing their technical, scientific, professional, and scholastic skills and competencies. The University operates with the three-fold function of teaching, research, and extension and other public service. Alabama A&M University, a center of excellence, provides an educational environment for the emergence of scholars, scientists, leaders, critical thinkers, and other contributors to a global society. In cooperation with business, industry, governmental agencies, and other private and community-based institutions, Alabama A&M University provides a laboratory where theory is put into practice globally and is committed to:

1. Excellence in education and the creation of a scholarly environment in which inquiring and discriminating minds may be nourished;
2. Education of students for effective participation in local, state, regional, national, and international societies;
3. Search for new knowledge through research and its applications;
4. Provision of a comprehensive outreach program designed to meet the changing needs of the larger community;
5. Programs necessary to address adequately the major needs and problems of capable students who have experienced limited access to education; and
6. Integration of state-of-the-art technology into all aspects of University functions.

### Role

The role of Alabama A&M University in higher education has been consistent with its mission. This mission is encompassed in the land-grant tradition, legislated by the Morrill Acts of 1862 and 1890. These acts created land-grant universities that differed from traditional American universities which followed the European system's concept of a liberal arts education. The departure from this system gave rise to a new concept in American higher education, which is known as the land-grant tradition. This concept combined liberal arts with agricultural



and vocational education to enhance the development of students prepared to build a strong America. As a land-grant institution, the University has the following functions:

**A. TEACHING:** The University's foremost responsibility is to provide students with an education that is built upon the liberal arts and emphasizes scientific, technical, vocational and professional areas expected of a comprehensive land-grant university.

**B. RESEARCH:** The University seeks to provide new knowledge through basic and applied research and supports both the teaching and extension functions through sponsored research, institutional research, and other research grants and contracts.

**C. EXTENSION:** Extension provides services and educational opportunities which help people improve their lives. The University fulfills its role of providing formal and informal outreach education and development through public service, cooperative extension, and a comprehensive, extended education effort compatible with its mission. Alabama is the first state to combine the Extension programs at its 1862 and 1890 land-grant universities. In 1995, the Alabama Cooperative Extension System was formally created, including Alabama A&M University and Auburn University, with Tuskegee University cooperating. This land-grant component of the public service mission at Alabama A&M University is tailored to meet the needs of specific clientele in both urban and rural settings. Through informal educational strategies, programs are designed to address current issues and needs of clients. A multidisciplinary approach using University personnel and statewide networks provides the basic framework for implementing Extension work. This framework is designed to transfer cutting-edge knowledge and technology to clients in order to improve their quality of life.

General public service programs can also serve as extension/outreach efforts of the University and include such activities as those provided by its Regional In-service Education Center, Teacher Service Center, Center for Aging and Lifelong Learning, Urban and Rural Research Center, Family Center, Drug Abuse Prevention Center, and Center for Entrepreneurial and Economic Development; partner programs with high schools; and other formal and informal continuing education programs. The university faculty and staff and students undertake additional funded projects with specific outreach components.

## Scope

As a comprehensive university (Carnegie classification: Doctoral (Intensive)), Alabama A&M offers programs at the baccalaureate, masters, educational specialist, and doctoral levels. Major emphasis is placed on programs designed to meet the economic, social and related needs of the State. In addition, the University seeks to prepare students to meet the needs of the larger society. Thus, the University's programs are designed to meet the needs of local, state, national and international students.

The graduate program consists of doctoral programs in three (3) areas; four (4) educational specialists programs; and twenty-two (22) masters programs. The undergraduate program consists of forty-one (41) degrees. Additional majors or options are subsumed under several undergraduate and graduate degree programs.

While major emphasis is placed on the undergraduate program, of equal importance and a priority for development are programs at the master's and doctoral levels. Programs designed to meet the changing needs of society and reflecting new technology will continue to be emphasized. Teacher education; recreation-leisure education; medical and allied health fields; social, natural, physical, and agricultural sciences; art, business and the humanities, as well as emerging programs to satisfy future needs, will continue to be enhanced and developed at the University. Particular emphasis will be placed on programs designed to address the special interests of minorities and women in the aforementioned areas.

Through dynamic curriculum structuring, program specializations reflect a strong liberal arts and general education foundation, and current state of the art technology, research and knowledge. Program quality is demonstrated through the accreditation, approval and/or recognition of over fifty percent (50%) of all programs by state, national and international professional societies and organizations. The University averages approximately

seven hundred (700) graduates yearly, of which more than eighty-five percent (85%) join the ranks of productive professionals in their field of study, with a large percentage seeking advanced study.

The University combines the liberal arts tradition with career-oriented and professional programs in order to enhance the intellectual, social, civic and personal development of its students. The initial priority of the University is to provide a core curriculum for the first two (2) years of matriculation consisting of courses in language, literature, the humanities, the natural and physical sciences, the social/behavioral sciences, military science and physical education/health sciences. These core courses are designed to assist students in developing the flexibility to engage in analytical and critical expression. Courses in the major areas of concentration are subsequently considered a high priority. These courses are designed to augment the core curriculum and help prepare students to become creative and productive members of their professions and society.

Alabama A&M University participates in the Statewide Articulation Reporting System (STARS), a computerized articulation and academic credit transfer planning system designed to provide students who attend Alabama community colleges, counselors, and educators with information on which transfer decisions can be made. While maintaining its traditional role of meeting the needs of capable students who have experienced limited access to education, the University also places emphasis on meeting the needs of non-traditional students. Instructional programs with alternative education delivery systems to accommodate the needs of both traditional and non-traditional students include: developmental education, honors, advanced placement, and adult degree programs; distance education needs and outcomes assessment activities; and performance based general education.

Research at Alabama A&M has a two-fold purpose: enhancement of instructional quality, and basic and applied research designed to expand existing knowledge and (or) develop new knowledge. As masters and doctoral level programs are enhanced and expanded, the University will continue to conduct and expand basic and applied research in the physical, social, behavioral, natural, biological, and agricultural sciences. Research programs include but are not limited to remote sensing, plant tissue culture, molecular genetics, sensory evaluation, nutritional biochemistry, applied human nutrition, rural development, robotics, artificial intelligence, cytogenetics, statistical classification, improvement of uniform random number generation, computer assisted instruction, biomass fuels, optics, materials science, microgravity crystal growth, infrared thermometry, and early intervention strategies in special education.

Research is carried out through center-based and interdisciplinary activities. Such centers exist in every School within the University and specific information can be obtained from their web pages. Examples include the Center for Applied Optical Science, Center for Irradiation Materials, Center for Urban Planning, Center for Economic and Government Policies Development, the State Black Archives and Research Museum, the Family Center, and the Center for Hydrology, Soil, and Climatology. Several of the centers place emphasis on the development of minority scholars and researchers and on research related to the needs of minority populations. A unique feature of such centers is the interdisciplinary approach to problem solving. University members publish research papers, review articles and books; poetry, essays, plays, and historical accounts; and are represented in art and archival exhibits.

Through programs such as the Teacher Service Center, Mathematics Tutorial Program, Agricultural Sciences Retention Program, and the Developmental Education Program, various instructional models, teaching techniques/methods, and assessment measures are tested, providing research data for improving instructional quality.

### **Organization**

The University is organized into five major divisions: Executive, Academic Affairs, Business and Finance, Student Affairs, and Research and Development. Further, the academic and academic-support programs are divided into six schools and one college. These are the School of Agricultural and Environmental Sciences, School of Arts and Sciences, School of Business, School of Education, School of Engineering and Technology, School of Graduate Studies and University College, which coordinates freshmen studies general education requirements.

## **Facilities**

The AAMU campus proper, comprising 200 of the institution's approximately 2002 acres, is situated at Normal, Alabama, within the city limits of Huntsville, Alabama. AAMU has 30 major historic and ultra modern buildings, eight female residence halls and, six male residence halls. The newly erected Normal Hills Apartments are also available for student occupancy.

### **Computer Laboratories**

AAMU has six general computer laboratories across campus, which offer the latest in computer technology and access to the Internet. The computer laboratories are open to all registered students of AAMU and are free of charge. The laboratory computers feature the latest in Microsoft Windows and have word processing, spreadsheet, and data base software available. Each laboratory is staffed by Education and Information Technology Services (EITS).

The computer laboratories are located at the following sites:

West Campus	(256) 372-5470
Foster Complex	(256) 372-5820
Councill Hall	(256) 372-5808
School of Business	(256) 372-5993
Carter Hall	(256) 372-5993
The University Center	(256) 372-5860
J.F. Drake Learning Resources Center	(256) 372-4725

### **Adherence to ADA Guidelines**

Alabama A&M University provides equal access to all educational programs. The University is in compliance with applicable laws, including Section 504 of the Rehabilitation Act of 1973, and applicable titles of the Americans with Disabilities Acts (ADA) of 1990.

## **Accreditations and Affiliations**

Alabama A&M University is accredited by the Southern Association of Colleges and Schools. The teacher education programs are accredited by the National Council for the Accreditation of Teacher Education. All teacher education programs are approved by the Alabama State Department of Education.

AAMU also is an institutional member, accredited, and/or approved by the following organizations:

AACSB International-- The Association to Advance Collegiate Schools of Business  
 Academic Deans of the Southern States  
 Accreditation Board for Engineering and Technology, Inc. (ABET)  
 Alabama Association for Institutional Research  
 Alabama Council of Graduate Deans  
 Alabama Education Association  
 Alabama Library Association  
 Alabama Library Exchange  
 Alabama State Department of Education  
 American Association of Colleges for Teacher Education  
 American Association of Collegiate Schools of Business, International (AACSB)  
 American Association of Collegiate Registrars and Admissions Officers  
 American Association of Family and Consumer Sciences (AAFCS)  
 American Association for Higher Education  
 American Association of State Colleges and Universities  
 American Association of University Administrators  
 American Association of University Professors  
 American College Public Relations Association  
 American Council of Education  
 American Dietetic Association (ADA)  
 American Society for Engineering Education  
 American Speech and Hearing Association (ASHA)  
 Association of Collegiate Schools of Planning  
 College Entrance Examination Board  
 College Language Association  
 Conference of Southern Graduate Schools  
 Council of Graduate Schools in the United States  
 Council on Rehabilitation Education  
 Council on Social Work Education (CSWE)  
 Institute of Food Technologists (IFT)  
 National Association for Equal Opportunity in Higher Education (NAFEO)  
 National Association of College Deans, Registrars, and Admissions Officers  
 National Association of Personnel Workers  
 National Association of State University and Land-Grant Colleges  
 National Association of Student Personnel Administrators  
 National Collegiate Athletic Association  
 National Council for Accreditation of Teacher Education (NCATE)  
 National Education Association  
 Network of Alabama Academic Libraries  
 Planning Accreditation Board (PAB)  
 Society of American Foresters (SAF)  
 Southern Association of Colleges and Schools  
 Southwestern Athletic Conference  
 Southern Regional Education Board  
 Technology Accreditation Commission of the Accreditation Board for Engineering and Technology

## ADMISSIONS POLICIES AND PROCEDURES

University admission is designed to accommodate students with diverse educational backgrounds and educational goals. The Admission Medical Record is a part of the Admission Application and must be completed, including required immunizations, before admission is granted and class registration is permitted. The physical examination on the backside of the Admission Medical Record is not part of the admission process; however, it is required in order to occupy residence halls.

### Admission Categories

Individuals seeking admission to AAMU usually fall into one of the following categories.

- **High School Graduates.** For unconditional admission high school graduates must have earned a score of 18 ACT/equivalent SAT and maintained a grade point average of “C” in the following subjects: English, mathematics, science, history, and political science. Upon notification of admission to AAMU, the applicant will receive a letter and card of acceptance. No student should report to AAMU for registration without having received the card of acceptance. Alabama students must have passed all three parts of the high school graduation examination.
- **High School Equivalency (GED).** For unconditional admission the applicant must have earned an average score of 48. Transcripts of last attendance in high school may be required. Students must have a score of at least 18 on the ACT/Equivalent SAT. Students 26 years or older are exempt from college entrance examinations.
- **High School Accelerated Program.** Students must have completed their sophomore or junior year of high school in order to be admitted to the high school accelerated program.
- **Transfer Students.** Students transferring from other postsecondary institutions must have maintained a cumulative GPA of 2.0 (“C”) at the last institution attended. Students who have 12 semester hours or equivalent quarter hours of acceptable academic credit at the college or university level may be admitted to AAMU as transfer students. Students with fewer than 12 semester hours will be admitted as high school graduates; however, appropriate hours will count toward the AAMU degree.
- **Transfer Students from Alabama Two-Year Colleges.** A student transferring from an Alabama two-year college may choose to fulfill the degree requirements of the *AAMU Bulletin* which was in effect at the time of the student’s initial enrollment at the Alabama two-year institution, provided that the time lapse between matriculation at the two-year institution and AAMU is not more than one year. Students intending to transfer to AAMU are encouraged to consult with their advisors and obtain a STARS guide from the AGSC/STARS Website, [www.stars.troyst.edu](http://www.stars.troyst.edu).
- **Transient Students.** Students enrolled at another institution who wish to pursue courses at AAMU to be transferred back to their institution may apply for admission as transient students. A letter of approval/good standing from the home institution is required. Transient students must apply for admission to AAMU at the beginning of each semester or session.

Residence hall spaces will be assigned in the following order: citizens of the State of Alabama; citizens of the United States, and citizens of other countries.

**Advanced Placement (AP) Program.** The University awards three (3) semester credit hours to students who score three (3) on the Advanced Placement Examination in the areas of Biology, Chemistry, English, Foreign Languages, History, Mathematics, Physics, Art and Music. Students scoring 4 or 5 may be awarded additional credit upon the recommendation of the appropriate department chairperson.

**Conditional Admission.** Transfer and special students are admitted to the University on a “Conditional” basis. They will have one semester to remove the “Conditional” status. If the “Conditional” status is not removed, the student will be notified of his/her ineligibility to register for the next semester.

**Visiting Student Programs.** A cooperative arrangement exists with the University of Alabama in Huntsville, Athens State University, John C. Calhoun State Community College, Oakwood College and Alabama A&M University, whereby a student at any of the participating institutions may request permission to attend a class at one of the other schools. Conditions governing the granting of permission include the following:

1. The student must be enrolled full-time.
2. His/her total load must not exceed the maximum number of hours established at the home school.
3. The student must have an overall average of “C” or better.
4. The course must be unavailable at the student’s home institution at the desired time.
5. The student’s request must be approved by his/her advisor and other appropriate personnel.
6. Permission of appropriate personnel at the host institution is required and will be dependent upon availability of space for the visitor after the school’s own students are accommodated.
7. Enrollment must be completed prior to the initial class meeting at the host institution.
8. AAMU policies and regulations regarding course substitutions and transfer credits will be applied.

In order to participate in this program, students must complete the Inter-Campus Visiting Student Form, which may be secured from the Office of the Registrar.

- **International Students.** In order to ensure that required long distance coordination may be completed in time to accommodate admission for the desired term, admission applications must be received by the following deadline dates: Fall, May 15; Spring, October 1; Summer, March 15. Freshman and entering international students must provide an affidavit of financial support. Students must have maintained a grade point average of “C” in core courses, must have earned five passes on a national or a local examination, and must have attained a minimum score of 500 on the TOEFL (Test of English as a Foreign Language). A letter of recommendation from an applicant’s principal or college advisor is also required.
- **Special Students.** Persons who wish to pursue certain courses without reference to a degree may apply for admission as special students. The Director of Admissions will review applications for such persons. A student may take a maximum of twelve (12) hours as a special student, except persons seeking teacher certification as directed by the Alabama State Department of Education. Before permission is granted to enter a degree program, applicants must meet all requirements for being admitted as regular degree students. Special students must apply for admission each semester or session.
- **Underprepared Students with Potential.** AAMU has established a plan to ensure that a limited number of underprepared students with potential who apply for admission are accepted and included in the student body.
- **Second Bachelor’s Degree.** Students desiring a second bachelor’s degree must complete another application for admission to AAMU.
- **Re-Entry.** A student who has not attended AAMU for one or more semesters and who wishes to return should consult with the Office of Admissions to determine enrollment status and to apply for readmission.
- **Others.** Individuals who do not completely fit into one of the categories described above may be eligible for **conditional admission** and should make inquiries to the Office of Admissions.

## Application Procedures and Deadlines

The following steps should be followed when applying for admission to AAMU:

- Complete an AAMU Undergraduate Application Form. Return the completed form to the Office of Admissions, Alabama A&M University, Post Office Box 908, Normal, Alabama 35762 or apply on-line by accessing AAMU's website at [www.aamu.edu](http://www.aamu.edu).
- Enclose with the application the required \$10.00 non-refundable application fee. Only a cashier's check, traveler's check, or money order made payable to Alabama A&M University will be accepted.
- Request that an official copy of the high school transcript or General Education Development (GED) test results be forwarded to the Office of Admissions.
- Request official test results for American College Test (ACT) or Scholastic Aptitude Test (SAT) be sent directly to the Director of Admissions by the testing agency.
- Request that the principal or a guidance counselor at the student's high school send a letter of recommendation to the Office of Admissions.
- For additional information, contact the Office of Admissions, Alabama A&M University, Post Office Box 908, Normal, Alabama 35762, (256) 372-5245 or (800) 553-0816.
- A transcript of the applicant's high school record or General Education Development (GED) test results must be received by the Office of Admissions before an application for admission can be considered complete. All transcripts must be official and must be received directly from the issuing institutions.
- Deadlines for receipt of applications for admissions are listed below:

<u>Semester/Session</u>	<u>Application Deadline</u>
Fall	July 15
Spring	December 1
Summer	May 15

## Special Programs

### Accelerated Program for High School Students

Alabama A&M University offers two programs of study for students who have a "B" grade point average and who have taken the PSAT, SAT or ACT College entrance examination. Applications and further information are available from the Office of Admissions.

- Qualified students who have completed their junior year of high school may take a course or courses during the summer preceding their senior year. Credit earned for such coursework will be awarded toward a degree upon the student's graduation from high school and enrollment at AAMU.
- Qualified students who have completed their sophomore or junior year of high school may take a course or courses during the academic year, while simultaneously enrolled in high school.

## TRANSFER OF CREDITS

### Entering Students

#### From U.S. Colleges and Universities

Students who transfer from another four-year or two-year institution must submit, in advance for acceptance, transcripts of all previous work completed on the college level. Such transcripts must be sent directly from the institution at which the work was completed. Academic work completed at schools not listed on the Admission Application *will not* be accepted for transfer purposes.

Transfer credits are accepted conditionally until the student presenting them has demonstrated, through satisfactory academic achievement over a period of at least one semester, that he/she is able to pursue successfully the curriculum in which he/she is enrolled.

Students transferring from other colleges and universities must have maintained a “C” average and be in good standing with the institution from which they are transferring. Students on academic probation or suspension are not in good standing.

**Transfer Readmit.** Alabama A&M University students who have attended another institution(s) after leaving the university must apply to return. Students must provide official transcripts from all institution(s) attended and list each school on their application for readmission to the university. College(s) or university(s) attended will be reviewed based on last institution attended first. Students must comply with all University guidelines governing re-entry and transfer student status.

**Transfer Credits.** Transfer credit are not accepted by the University in the following areas: Credits earned for developmental (remedial) courses, religious courses and orientation.

**Transfer Credits for Advanced Standing.** In order for transfer credits to be accepted for advanced standing, all prior college work must be declared on the official application, supported by official transcripts. No credit for advanced standing will be accepted after the end of the first semester of the student’s enrollment. All grades must be “C” or above.

**Grades below “C” are not transferable,** except as provided for in the AGSC Stars guidelines for transfer credits from Alabama two-year institutions.

A student who has been suspended from an institution because of poor academic performance is not eligible to enter Alabama A&M University immediately following academic suspension.

The Office of Admissions accepts transfer credits for the University. The deans of Schools or department chairpersons approve transfer credits for degree programs. No credits will be accepted for religious or developmental courses.

#### Transfer of Students on Suspension from Another Institution

1. *Suspension, Indefinite or Permanent Academic Suspension:* A student who has been suspended from another college is eligible to apply for admission to the University after 12 months have elapsed.
2. *Disciplinary Suspension:* Students on disciplinary suspension from another institution must be eligible to return to that institution before being considered for admission to Alabama A&M University.

International students who receive certificates of eligibility from the University are eligible to transfer to other institutions after two semesters of attendance.



For additional information, write the Office of Admission, Alabama A&M University, Box 284, Normal, Alabama 35762.

## **Credit by Examination**

*Advanced Placement (AP) Program.* Several A&M University departments award credit to students who have earned designated scores on Advanced Placement (AP) Program examinations of the College Entrance Examination Board. AP examinations are usually taken at the end of an AP designed course of study in high school. Students may contact their major departments to determine specific areas where AP credits will be accepted.

*College Level Examination Program (CLEP).* CLEP, a nationwide system of credit-by-examination, is administered at many colleges and universities to award college credit to those who earn the designated minimum acceptable score. There are five general examinations and 30 specific subject examinations. The general examinations measure college-level achievement in five basic areas of the liberal arts: English composition, humanities, mathematics, natural sciences, and social sciences-history. The subject examinations measure achievement in specific college courses and are used to grant exemption from and credit for these classes. Students must check with their major departments to determine the availability of and their eligibility for subject examination.

The Testing Services Center at AAMU is an open center for CLEP administrations. Examinations are scheduled on an individual basis and are available year-round, with the exception of the English Composition with Essay Examination. This test is only offered in January, April, June, and October.

Enrolled students who want to take CLEP examinations to substitute for specific courses or who want to obtain additional information about the CLEP should contact the Testing Services Center. Credit awarded through the CLEP must be recorded on a student's transcript no later than the end of the first semester of the junior year.

## **Military Education/Training Evaluation**

The Office of Admissions evaluates military transfer credits for AAMU. For evaluation, appropriate official copies of certificates, diplomas, or transcripts should be forwarded to the Office of Admissions. The *Guide for the Evaluation of Educational Experiences in the Armed Services* as sanctioned by the American Council on Education (ACE) is the standard reference work used by AAMU for awarding credit for learning acquired through the military.

## **Work Experience**

Non-traditional credit, not to exceed 54 non-transferable semester hours, may be awarded at the point of entry to persons who have earned a certificate, diploma or degree in the intended field of study from a regionally accredited technical/career college and/or through work-related learning. A maximum of 30 semester hours may be awarded for a diploma or certificate and 36 semester hours may be awarded for an associate degree from an acceptable institution. Persons with a minimum of three years and a maximum of six years of relevant work-related learning, documented by employer/examination and/or approved by the major area in accordance with established departmental criteria for non-traditional credit, may be awarded nine to eighteen academic credit hours, respectively.

## **Other Non-Collegiate Sponsored Instruction**

AAMU considers for college credit non-collegiate sponsored instruction approved and sanctioned by the American Council of Education and listed in the National Guide to Educational Credit for Training Programs. Appropriate official copies of certificates, diplomas or transcripts should be forwarded to the Office of Admissions for evaluation.

## **Continuing Students**

Students registered at AAMU who desire credits taken at other collegiate institutions to be applied toward their degrees at AAMU must receive approval before enrolling at the other institution. The completed Transient Student Form must be signed by the student's advisor and submitted to the Office of the Registrar. Students who receive such approval must submit official transcripts documenting the work as soon as it is completed, whether they still desire credit for the work or not. The total number of hours taken at another institution or the sum of credits taken at AAMU and another institution during the same term cannot exceed the maximum allowed during the same enrollment term at AAMU: 18 credit hours for fall and spring semesters; 10 credit hours for an eight or nine week summer session. All transfer grades must be "C" or above to be accepted.

Advisors will evaluate whether or not the courses for which the student intends to enroll will transfer back to AAMU based on a comparison of course descriptions in the *AAMU Bulletin* and the bulletin of the institution the student wants to attend. Approval of transient credit is contingent upon whether the intended course is equivalent to a course at AAMU and whether or not the credit(s) will be accepted by the major department for fulfillment of degree program course requirements.

Students are reminded that they should carefully review the number of credit hours that will be awarded for courses taken at another institution. Since AAMU awards credit for coursework based on semester hours, credit hours awarded for coursework completed at institutions which use a quarter system must be converted to semester hours upon transfer. In some instances, such conversion may result in the student receiving an insufficient number of credit hours to fulfill the required number of semester hours for a course.

## **International Institutions**

Post-secondary credits earned from international institutions which are patterned after the British or other Non-American system of grading must be evaluated by the World Education Services, Inc., to be accepted by AAMU for admission or transfer. Applications for the evaluation may be secured from the Office of Admissions. Courses recommended by the World Education Services, Inc., will be accepted by Alabama A&M University. It is the responsibility of the student to execute, request, and pay the cost of such evaluations.

## **Correspondence Courses**

Correspondence courses taken for credit towards a degree at this University must be authorized in the same manner as any other transfer work. In addition, the following policies apply:

1. No more than one correspondence course will be permitted during any semester or term. A student will be considered enrolled in a correspondence course from the time he/she receives permission to enroll until the Office of the Registrar receives a grade or evidence of discontinuation.
2. Correspondence course hours will be included in the computation of the student's load for the duration of the enrollment in such course, and hence will become subject to total load restrictions.
3. Correspondence courses may not be used to satisfy upper level course requirements in the student's major.

# **REGISTRATION POLICIES AND PROCEDURES**

## **General Registration Guidelines**

All students of AAMU are required to present themselves for registration in accordance with the plans of registration established for the current semester or term listed in AAMU's calendar.

No student will be permitted to attend class unless the instructor has received from the Office of the Registrar evidence of proper registration. Students are considered registered only when they have conformed to all University and school regulations applying to registration. Undergraduate students are required to register prior to the first day of classes in each semester. There may be a period of late registration for which there is an additional fee. Students who register after classes begin are responsible for all information, assignments, etc. presented prior to their registration. Registration is most conveniently accomplished for continuing students during the advance registration periods held in April for the fall semester, in November for spring semester, and in February or March for the summer session.

Each student registering for courses in any term must submit to the Office of the Registrar, with the approval of the student's academic advisor, a list of courses and sections, identified by call numbers, for which registration is sought. AAMU will attempt to meet the curricular needs indicated by the student and confirmed by the advisor, as long as the course selection conforms to University regulations and as resources permit.

Registration after the final date provided in AAMU's calendar must be by special permission of the Provost/Vice-President for Academic Affairs. A student may add courses for credit, make section changes, or drop courses with the approval of the appropriate dean within the period provided in AAMU calendar. A fee will be charged for this service.

Students generally enroll in courses in accordance with the following outline: 100-199 recommended primarily for freshmen; 200-299 recommended primarily for sophomores; 300-499 recommended primarily for juniors and seniors; 500 and above open primarily to graduate students.

Students who fail to register during a semester, or whose efforts to register fail to conform to University and school regulations may not at the end of such semester receive credit for courses or parts of courses completed. Permission, however, may be granted by the Provost and Vice President for Academic Affairs for appropriate retroactive registration, but only upon the recommendation of the advisor, the instructor from whom credit is sought, and the dean of the school in which the student is enrolled. It is to be noted that such permission is highly unusual, since it is illegal for an instructor to allow a student to remain in his/her class after the initial roster has been issued, if the student is not properly enrolled.

## **Cancellation of Registration**

Students who have registered for an academic term at Alabama A&M University and decide not to attend or return that term must contact the Office of the Registrar to file a Cancellation of Registration request.

Students who attend one or more class sessions are not eligible for a cancellation of registration. Students who fail to cancel registration will be held accountable for fee payment for that semester. In the event a cancellation of registration is requested, students must complete the following steps.

1. Student will initiate the process by requesting cancellation in the Registrar's Office. If the term has already been completed, the Registrar's staff will require that students verify non-attendance at all classes.
2. Student will proceed to Office of Financial Aid for verification of financial status. Cancellation of requests for financial aid must be verified or processed.

3. If approved by the Financial Aid Office, the student will return the form to the Office of the Registrar. Courses will be removed from the student's record.
4. Student will present approved document to Bursar for removal of charges for the term.

### **Auditing Courses**

Students who do not wish to register in courses for credit may be permitted to register as auditors under the conditions that they pay the regular audit fees of \$100.00 per hour (no additional fee for students registered for a full-time credit load), obtain the consent of the instructor, and audit only courses for which there are adequate classroom facilities. Full-time students must obtain the consent of their advisors. Skill and laboratory courses are not open for auditors.

Permission to and registration for auditing courses shall be filed in the Office of the Registrar. Regular registration procedures are to be followed after permission has been granted. The privileges of an auditor in a course are limited to attending and listening. The auditor assumes no obligation to do any work in the course. Auditors do not submit any work and are not required to take any tests or examinations nor receive grades on any part of the course.

A student can change a course from credit to audit or from audit to credit during the first three weeks of classes. In the summer session, this must be done within the first week of classes. The fee for this change is the same as that for other schedule changes.

### **Distance Learning Courses**

For the purpose of this section, Distance Learning Courses are defined as those courses taken through correspondence, audio/video, teleconference, or other electronic means from another institution.

Distance Learning courses taken for credit toward a degree at this University must be authorized in the same manner as any other transfer work as stated in the policy on transfer credits. In addition, the following policies apply:

1. No more than one distance learning course will be permitted during any semester or summer session. The student will be considered in a distance learning course from the time he/she received permission until the Registrar receives a grade or evidence of discontinuation.
2. Distance Learning course hours will be included in the computation of the student's load for the duration of the enrollment in such course, and hence become subject to total load restrictions.
3. Distance Learning courses may not be used to satisfy upper level course requirements in the student's major.
4. Distance Learning courses taken at another university cannot be used in the calculation of the quality point average or GPA.

### **Class Schedule Changes**

Once a student has completed registration, all changes in his/her schedule must be recorded in the Office of the Registrar and validated by the Business Office.

There is a mandatory fee for schedule changes. Students complete a Drop/Add Form, which is available in the office of each school dean. The signatures of the student's advisor and the instructor of the class to be added or dropped are required to authorize each change.

Classes dropped two or more weeks before final examinations will receive a grade of "W." The grade and hours of courses with a "W" will not be computed into the grade point average.

Students who choose to discontinue all courses enrolled in during a given term must withdraw from AAMU. This cannot be done through the Drop/Add procedure. See "Withdrawal from the University."

All additions to a class roll must be made through the Office of the Registrar. Credit for a course will not be allowed if the Office of the Registrar has not officially enrolled a student in the class.

The following changes require the use of the Drop/Add form:

- Change from one course to another.
- Change from one section of a course to another section of the same course.
- Addition of course(s) to class schedule.
- Deletion of course(s) from class schedule.
- Change in section or course due to inserting the wrong call number.
- Change from audit to credit.

The fees for class schedule changes may be waived for the following reasons:

- A course has been canceled by AAMU.
- A course has been rescheduled for a different time by AAMU.
- Other justifiable causes for changes made by AAMU.

### **Procedures for Changing from Audit to Credit**

- Step 1:** Secure Drop/Add form from the dean's office.
- Step 2:** Complete the form by including the call number to drop from audit and to add for credit.
- Step 3:** Obtain signatures of instructor and advisor.
- Step 4:** Present the processed form to the cashier's department for payment.
- Step 5:** Continue attending class.

### **Procedures for Dropping and Adding Courses**

- Step 1:** Secure Drop/Add form from the dean's office.
- Step 2:** Complete the form including the call number(s) of the class(es) which are to be dropped/added.
- Step 3:** Secure the signature of the instructors for the classes to be dropped or added.
- Step 4:** Secure the signature of the student's advisor.
- Step 5:** Take form to the Office of the Registrar for processing.
- Step 6:** Take the form to the cashier for payment of fee.

## **WITHDRAWAL FROM THE UNIVERSITY**

When a student finds it necessary to discontinue his/her enrollment at any time other than at the end of a semester or summer term, he/she must complete a withdrawal form obtained from the Registrar's Office. The student must clear all AAMU accounts as listed on the form.

### **Procedures for Withdrawing From the University**

- Step 1:** Secure and complete Withdrawal Clearance Form. Forms are available in the Registrar's Office. Obtain all appropriate signatures.
- Step 2:** Complete exit interview with the Office of Special Student Services.
- Step 3:** File completed Withdrawal Clearance Form with the Office of the Registrar.

### **Impact of Withdrawal on Grading**

When a student withdraws before the last two weeks of any semester or summer session, the student will receive a grade of "W" in all courses. When enrolled for a regular semester, however, a student may not withdraw during the last two calendar weeks prior to the first day of final examinations. In a summer session, a student may not withdraw during the last calendar week prior to the first day of final examinations.

When a student leaves AAMU at any time during the semester or a summer session without filing a Withdrawal Form and without clearing all University accounts, the student may receive a grade of "F" in all courses. Further, he/she will forfeit all rights to a statement of honorable dismissal, thereby jeopardizing re-entry into AAMU or transfer to another accredited institution.

### **Emergency Separation for Military Purposes**

Students who exit the University because of military call-up or spouses of those called may withdraw without academic penalty. After the normal University withdrawal period, the student may choose to make arrangements with the instructor and/or department chairman to complete the course work.

Students who withdraw due to being called to active duty or spouses of persons called to active duty may be eligible for a full refund of required tuition and fees. Room and board will be refunded in accordance with the current University refund policy. All students who receive Title IV funds will be processed according to federal policies. Federal policy statements are available in the Office of Student Financial Aid.

#### **Procedures**

1. Secure a copy of the Academic Affairs Form (Emergency Separation for Military Purposes).
2. Complete the form and secure appropriate documentation.
3. Submit the form to the Office of the Registrar, retaining the copy marked "student".

## **ACADEMIC POLICIES AND REGULATIONS**

### **Units of Credit**

The unit of credit is the semester hour. It is generally defined as one hour of regular class work or two or more hours of laboratory work per week for each credit hour. Semester hours translated into **contact hours** are calculated by multiplying the credit hours by the number of weeks in the semester. A three-hour course taken during a 15-week semester will have 45 contact hours.

## Structure of Academic Year

### Fall/Spring Semesters

Alabama A&M University is organized on the semester system. The year is divided into two semesters, and one summer term, which may be scheduled as one or two sessions. Each semester must include a minimum of 15 weeks of instruction.

### Summer Sessions

The summer term usually covers a period of eight weeks, typically beginning the first week in June. Regardless of the length of the session, summer classes, which may be offered in shorter sessions, e.g., four weeks, are so scheduled that the amount of time allotted for class instruction is equivalent to that provided in the regular semester. Classes held during the summer term usually meet daily.

## Classification of Students

Persons other than special students are grouped in four classes according to total credits earned in semester hours as indicated below:

<u>Classification</u>	<u>Cumulative Hours Earned</u>
Freshman	0 - 30
Sophomores	31 - 63
Juniors	64 - 94
Seniors	95 or more

## Course Loads

### Full-Time v. Part-Time

A full-time student is one who enrolls in at least 12 semester hours of scheduled course work during a semester or who enrolls in at least six semester hours during a summer term. Any student enrolled in fewer than 12 hours in a regular semester or fewer than six semester hours in a summer term is a part-time student.

### Maximum Course Loads

The maximum student load is 19 semester hours per regular semester and 10 hours per summer session. A student may not register for more than 19 semester hours for any semester, except by written request of the advisor, approved by the dean of the school, and by the Provost and Vice President for Academic Affairs. All requests must be processed using the Request for Course Overload Form that can be obtained from departmental offices. Permission for an overload is usually restricted to students with a GPA of 3.0 or above. Students thus may not pre-register for more than 19 hours, since the G.P.A. for the current semester's work will be unavailable at the time of pre-registration.

The maximum load for the summer session shall be 10 semester hours. With permission, through channels leading to the Provost and Vice President for Academic Affairs, up to two additional semester hours may be allowed providing the student will be eligible for graduation the same semester by virtue of the additional hour(s). Under no circumstances will a student be allowed to earn more than 12 credit hours during a summer session.

## Class Attendance Policy

A student is permitted one (1) unexcused absence for each credit hour generated by the class. For example, two (2) absences are allowed in a two-hour class.

### Instructors

1. Instructors are required to keep accurate attendance records.
2. Instructors must include on their syllabi applicable penalties for unexcused absences beyond those permitted based on credit hours.
2. Each student who exceeds the number of unexcused absences will be counseled by the teacher regarding any applicable penalties as stated on the course outline.

### Students

1. Class attendance is expected as well as a privilege and students are required to be punctual and prepared.
2. Learning experiences proceed at such a rapid pace that attendance is necessary if students are to acquire the knowledge and develop the competencies, skills and strategies they need to be successful in their endeavors.
3. Students are required to carry out all assigned work and to take examinations and quizzes at the class period designated.
4. Failure to take examinations and quizzes, and/or carry out assignments at the designated times may result in an appropriate reduction in the final grade, **except as provided in items 6 and 7 below.**
5. Arrangements for make-up work due to excused absences must be initiated by the student.
6. Excused absences can be obtained upon presenting documentation to Special Student Services for the following reasons:
  - A. **Personal Illness or Illness of a Family Member**  
Documentation bearing the signature of doctors, dormitory counselors, infirmary and/or hospital officials, athletic trainers, etc. shall constitute proof.
  - B. **Death in the Family**  
Funeral programs, newspaper obituaries, and/or statements from funeral directors shall constitute proof.
  - C. **Subpoena for Court Appearances**  
The student's copy of the document shall constitute proof.
  - D. **Emergencies or Circumstances over which the Student has no Immediate Control**  
Appropriate corroboration, documentation and/or explanation shall constitute proof.
7. Students may be excused for trips taken as members of student organizations sponsored by Academic units, trips for University classes, and trips for participation at/in intercollegiate athletic events.. Authorized excuses, dispatched from the appropriate offices, teachers, coaches or sponsors over the signatures of the Department Chairperson and Dean or Directors, shall constitute proof.



Unresolved problems regarding attendance and/or procedures shall be appealed through appropriate University grievance channels.

## Grades/Academic Records

### Grading System

AAMU uses a letter system of grading which follows: A-exceptional scholarship; B-distinctively above average; C-average quality; D-barely passing; F-failure; I-incomplete; IP-in progress; W-withdrew. The grade of "P" is used to indicate satisfactory completion of graduate writing and history departmental seminars.

The grade "X" will be assigned for auditing a course; however, no credit will be allowed. Credit for any course in which a student has received a grade of "F" can be obtained only by repeating the course and earning a passing grade.

### Grade Point Average

AAMU's grading system is based on a 4.00 point scale; quality points are assigned as follows: A = 4; B = 3; C = 2; D = 1; F = 0.

Grades of I, P, IP, W and X do not carry quality points, and like grades earned at another institution, do not impact a student's grade point average.

### Example of Calculation of Grade Point Averages

Grade	Quality Points	x	Hours Attempted	=	Average (GPA)	Grade Point Average
A	4	x	3	=	12	
B	3	x	4	=	12	
C	2	x	3	=	6	
D	1	x	2	=	2	
F	0	x	3	=	0	
W	0	x	<u>0</u>	=	<u>0</u>	
<b>TOTAL</b>			<b>15</b>	=	<b>32</b>	<b>2.13</b>

Grade points ÷ hours attempted =  $32/15 = 2.13$

### Missing Grades

A missing grade must be received in the Registrar's Office within forty-five (45) days immediately following the grading period (semester or summer session) in which the grade was given. All missing grades must be reported on a Missing Grade Form.

### Grade Changes

All course grades except "I" grades are intended to be final and permanent. It is expected that faculty will arrive at and report final grades as accurately and precisely as the nature of the evaluation of student achievement and the grading system will permit. It is considered the faculty's direct and personal responsibility to ensure that grades are fair and reported correctly the first time. Final grades cannot be improved by "make-up" work after the end of the term.

If an error occurs in the calculation or recording of a grade, it can be corrected using the following procedures:

1. The faculty of record will complete the Change of Grade Form, which must include:
  - a. The student's name, student number, course designation by title and number, semester, and change desired.
  - b. A statement unequivocally identifying the person who made the error, and explaining the nature of the error.
  - c. An explanation of how the new grade was computed.
2. The form must bear the endorsement of the department chairperson and dean, and must be addressed to the Provost and Vice President for Academic Affairs.
3. Requests for "I" grade changes may be made by faculty members directly to the Office of the Registrar on forms provided for that purpose.
4. Requests for grade corrections must be submitted to the Office of the Registrar by the end of the semester after the incorrect grade was submitted.

### **Incomplete Grades**

An "I" grade is intended to be only an interim course mark. **It is to be used only if a student has satisfactorily (hereby defined as a C average or better) completed at least 75% of the course requirements, and there is an excusable reason for his/her not having completed all requirements prior to grade reporting time.** With the awarding of the "I" the instructor must include information on the Grade Reporting Form as to the specific requirements for changing the "I" to a permanent grade.

Students may obtain credit for courses in which their grades are "incomplete" only by completing the work of the course in a satisfactory manner **within one year of the date the "I" is awarded or the end of the next term that course is offered. If this is not done, the grade in the course automatically becomes a failure ("F").** The grade of "I" Incomplete shall be neutral in the calculation of the grade point average. A grade of Incomplete must be changed to a permanent grade by the instructor within the time limit specified by submitting the proper Incomplete Grade Report Form to the Office of the Registrar. Delinquent Incomplete Grade Report Forms will not be requested or processed without the approval of the Provost and Vice President for Academic Affairs. Incomplete grades for graduating seniors must be removed by October 1 for December graduates, April 1 for May graduates, and June 15 for summer graduates.

A grade of "IP" is used to indicate satisfactory progress towards the completion of a research, thesis, dissertation or internship course. This grade designation may be used for courses that often require more than one semester for completion.

### **Impact of Grades from Repeated Courses on GPA**

Any student who registers for credit for any course and who satisfies the requirements shall receive credit for that course; however, no student shall receive credit for the same course twice, unless the course description specifically states that the course may be repeated for credit.

Students may repeat courses to improve their grade point averages. Only the highest grade will be included in the grade point average. Credit will be allowed only once. All grades will be included on the student's records. This policy applies only to courses repeated at AAMU.

A student who fails a required course should repeat the course at the next opportunity. A student may be encouraged to repeat an elective course in which he/she receives a grade of “F” by his/her advisor, major department chairperson or school dean.

## **Academic Bankruptcy**

A student may petition the Academic Appeals Committee for academic bankruptcy after completing two or more semesters at AAMU. All work completed, however, remains on the student’s transcript and records with a grade of “WB”, although it would be designated as work not included in the computation of the grade point average or applied towards degree requirements. Teacher education majors should check with the Director of the Teacher Service Center, as state requirements may dictate that all coursework be used in calculating the student’s GPA.

Petitions may be granted for one or more full semesters only; thus, a student may not be granted a grade-by-grade academic bankruptcy or elimination. There must be a minimum of one calendar year between the date of the petition and the ending date for the period specified by the student’s bankruptcy petition for application of relief. A student will be granted academic bankruptcy only once during the student’s academic career at Alabama A&M University. For purposes of applying this policy, the student’s academic career shall include all undergraduate work attempted. An academic bankruptcy approval is irrevocable.

### **Procedures:**

1. Obtain Application for Academic Bankruptcy Form from the Office of the Provost and Vice President for Academic Affairs.
2. Consult with your academic advisor and obtain advisor’s signature.
3. Submit completed form to the Office of the Provost and Vice President for Academic Affairs by appropriate deadline as indicated on the form.

## **Academic Transcripts**

In compliance with the Family Educational Rights and Privacy Act, AAMU does not release transcripts of a student’s work at AAMU except upon the student’s written request. A student or former student who desires a transcript of his/her record from AAMU must make this request in writing to the Office of the Registrar. Students or former students requesting transcripts should state all possible names under which their records may be located. Telephone requests cannot be honored. A student may secure an unofficial transcript for his/her use, but official transcripts must be sent directly to other institutions, organizations, companies, and other interested parties. Official transcripts cannot normally be hand-carried without prior permission of the receiving institution. If this permission is granted, however, the transcript must be sealed in an envelope and marked “Issued to Student.”

Each student is entitled to one transcript without charge. A fee of \$3.00 is charged for each additional transcript, whether it is an official or unofficial copy. **Transcripts are not issued to or for students who have outstanding financial obligations to AAMU.**

## **Family Education Rights and Privacy Act**

Alabama A&M University is required to bring to the attention of all students, partners, and alumni provisions of Public Law 93-380, the Family Educational Rights and Privacy Act of 1974, also known as “The Buckley Amendment.” Under the provisions of this law, all students and former students of AAMU have the right to inspect their official educational records in the Office of the Registrar. The right of inspection does not apply to any information submitted to this office as confidential prior to January 1, 1975, nor to access by students to financial records of their parents or guardians. Parents or guardians of a student may not see records nor receive grades unless the student specifically designates that such records and/or such grades may be made available to the parents or guardians named on his/her registration forms. Grades are mailed to the persons so listed.

No-option “directory information” may be released by AAMU without the student’s written permission. No-option “directory information” includes the student’s name and enrollment status. The student must at the time of registration indicate if he/she will allow additional directory information to be given without specific approval.

The Office of the Registrar, as custodian of the educational records of students, will make access of such records available to assistants, school officials, and other designated persons for indicated specific and legitimate interests as outlined in the amendment. All requests from campus organizations to release a student’s grade point average to other students to determine a student’s eligibility for membership in that organization will not be honored unless the student involved has specifically requested the release of this information.

Students who have questions concerning their records should address them to the Office of the Registrar.

### **Change of Major**

Students who wish to change their respective majors must complete an Application for Change of Major. The form must be signed by the department chairperson and the dean of the school in which the student is currently enrolled. After action has been taken by this dean and department chairperson, the application is sent to the dean of the school in which the student desires to enroll. Once the gaining dean has responded, the application will be forwarded to the Office of the Registrar for appropriate action. All course work taken will remain on the transcript and will be computed in the grade point average.

### **Academic Progress**

#### **Requirements for Satisfactory Academic Progress**

A student at AAMU is expected to make positive academic progress towards a degree. An undergraduate student is said to be making satisfactory academic progress and thus is in academic good standing when his/her cumulative grade point average is 2.00 or above.

<u>Classification</u>	<u>Cumulative Grade Point Average</u>
Freshman	2.00
Sophomore	2.00
Junior	2.00
Senior	2.00

Students whose cumulative GPA falls below the required minimum must increase their cumulative GPA to the required minimum within two semesters. During the two-semester grace period, the student is required earn the minimum GPA for his/her level. Further, during the two-semester grace period, the student’s record will be stamped “Academic Probation.”

#### **Academic Probation**

A student will be placed on academic probation when his/her cumulative grade point average fails to meet the standard for satisfactory academic progress described above. Students who are placed on academic probation will have to raise their cumulative GPA to that required for satisfactory academic progress to end probation. To avoid academic suspension, a student on probation must earn a GPA within the required period equal to or above the level required for satisfactory academic progress. During the period of academic probation, students will be allowed to enroll in a maximum of 12 semester hours. Students on probation who register for more than 12 credit hours will not retain credit for hours above 12. No student on academic probation may hold office in any campus organization, participate in any organized non-class off-campus trip, or officially represent AAMU. This regulation does not

apply to participation in activities conducted completely on campus. Participation in such activities, however, may be required to be very limited in scope. A student on academic probation may be ineligible to receive financial aid, and could be required to repay aid that was previously awarded. Questions related to financial aid should be directed to the Office of Financial Aid.

## **Academic Suspension**

A student who has been placed on academic probation and fails to acquire the minimum GPA for satisfactory academic progress within the required period will automatically be suspended. Academic suspension will result in the loss of one semester of matriculation. A student under suspension may not obtain credit toward a degree in courses pursued at another institution. Academic suspension may be followed by readmission on academic probation.

## **Indefinite Suspension**

A student is declared on indefinite suspension and will not be granted permission for readmission to the University if the student has:

1. Completed two semesters on academic probation and failed to raise his/her grade point average to the required minimum of 2.00.
2. Remained out of the University for one semester and is readmitted on probation or has been readmitted on appeal without staying out one semester, and is subsequently suspended.
3. As an example:
  - Semester 1      Academic Probation
  - Semester 2      Continued Academic Probation
  - Semester 3      Continued Academic Probation
  - Semester 4      Suspension
  - Semester 5      Return on Probation
  - Semester 6      Indefinite Suspension

## **Appeal for Reinstatement Following Suspension**

A student on academic suspension is required to remain out of the University for one regular semester and may apply for consideration of readmission after the lapse of one semester.

Appeals for reinstatement from academic suspension are available only for students who can provide documentation that has affected their academic status. A student may appeal for academic reinstatement after suspension only once during the student's academic career at Alabama A&M University.

## **Reinstatement**

A student on academic suspension is required to remain out of AAMU for one regular semester and may apply for consideration of readmission after the lapse of one semester.

A student who can document important extenuating circumstances that have affected his/her academic performance can appeal for consideration of continued enrollment. The appeal must be completed within the time frame listed in the letter of suspension.

## Academic Appeals

### The Academic Appeals Committee

The Academic Appeals Committee serves as a review and recommending body on matters of academic appeals filed by students and sets forth recommendations regarding issues against students that have been filed by faculty members. The actions reviewed by the committee include appeals regarding probation, suspension, and academic violations by students or grievances filed against faculty members by students. The Academic Appeals Committee consists of one faculty member from each undergraduate school, and one representative each from the University College, the Student Government Association, and the Faculty Senate, all of whom are appointed by the Provost and Vice President for Academic Affairs. The committee meets twice a semester, once during the week of registration and once during the second week following mid-term. Other meetings are scheduled on an as-needed basis.

### Appeals for Reinstatement

#### Procedures:

1. Appeals must be submitted in writing to the Academic Appeals Committee no later than the dates listed below for each term:

<b>July 1</b>	<b>Fall Semester</b>
<b>January 1</b>	<b>Spring Semester</b>
<b>June 1</b>	<b>Summer Session(s)</b>

2. Appeal letters **must** be typed (no hand-written requests) and should include the following:

- Term for readmittance (Fall, Spring, Summer)
- Student I.D. Number
- Return address to receive response to your request
- Brief and clearly stated explanation of extenuating factors leading to the current status
- Plan of action
- Signature of Advisor and Retention Counselor

3. Letters should be submitted to the following address:

Academic Appeals Committee  
Office of Academic Affairs  
P.O. Box 287  
108 Patton Building  
Normal, Alabama 35762  
Fax: (256) 372-5278

### Academic Appeals Procedure

The academic appeal is a formal procedure designed to provide students with an option to address academic issues and concerns such as unfair grading, poor instruction, unfair treatment, etc. Students and faculty members are encouraged to handle issues of academic concern through informal discussion with the appropriate individual (student, faculty, advisor, department chairperson, and/or dean). If informal procedures fail to resolve the issue(s), students may pursue a formal appeal. The following steps describe the appeal process:

- A. Appeals must originate from the student in written form and must be processed through the department chair, dean of the school, and to the Office of Academic Affairs, in that order.

- B. The appeal may be concluded at any level, with the consent of the applicant student, with a copy of the decision forwarded to the Office of Academic Affairs.
- C. If the appeal reaches the Office of Academic Affairs without resolution, the request will be sent to the Academic Appeals Committee.
- D. The Academic Appeals Committee shall complete an assessment of the issue(s) through (1) a hearing, (2) individual interviews, and (3) acquisition and review of pertinent data, or other means as deemed appropriate by the Committee.
- E. The Academic Appeals Committee shall formulate recommendations based on the results of the assessment. The recommendations will be forwarded to the Provost and Vice President for Academic Affairs for final disposition.

## **Academic Honors**

### **Semester Honors**

The **PRESIDENT’S CUP**. Undergraduate students maintaining a 4.00 grade point average for two consecutive semesters with at least 12 semester hours in the regular academic program each semester will qualify for President’s Cup honors. Each recipient will receive an engraved miniature cup and a certificate.

The **PRESIDENT’S AWARD**. Freshmen who obtain a 4.00 grade point average for one semester with at least 12 credit hours in the regular academic program will qualify for the President’s Award.

The **HONOR ROLL**. Students who achieve an overall (cumulative) quality point average of 3.3 or above, provided they have been enrolled in a minimum of 12 credit hours per semester in the regular academic program for at least two consecutive semesters, will qualify for the Honor Roll.

The **DEAN’S LIST**. Any student who has attained a quality grade point average of 3.00 or better, has earned no grade below “C”, has carried a minimum of 12 semester hours in the regular academic program, and has had no disciplinary restrictions for the semester, is eligible for the Dean’s List. It is compiled at the end of each semester.

The **FRESHMAN HONOR ROLL**. Freshmen who achieve a grade point average of 3.3 and above with a minimum of 12 credit hours in the regular academic program after one semester are eligible for the Freshman Honor Roll.

Eligibility for Freshmen Honors is determined each spring semester based upon a student’s academic performance for the preceding fall semester. All other honors are based upon a student’s performance for the spring and fall semesters, which fall in the same calendar year (i.e., spring 2001 and fall 2001). Awards are presented during AAMU’s annual Honors Day Convocation in April. Parents, faculty, staff, alumni, and community guests are invited.

A student who shows evidence of superior intellectual ability and who has achieved a quality grade point average of 3.3 or above is eligible to become a member of Alpha Kappa Mu Honor Society.

### **Graduation with Honors**

AAMU awards graduation honors for high academic achievers based on their cumulative grade point averages. The schedule below outlines the guidelines for those awards.

<b>Award</b>	<b>Cumulative GPA</b>	<b>Minimum Credit Hours at AMU</b>
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Cum Laude	3.0 – 3.49	30
Magna cum laude	3.5 – 3.79	30
Summa cum laude	3.8 or above	95

### General Education Requirements

The general education program, as described, is the foundation of all undergraduate degree programs and is required of all students. Schools and departments may require additional or more specific course work for their programs. The program below should be completed during the first two years of all baccalaureate degree programs.

#### AREA I:

**Written Composition.** A grade of *C* or better is required in each of the following courses:

ENG 101/101H/103	Composition I
ENG 102/102H/104	Composition II

#### AREA II:

**Humanities and Fine Arts.** Requirements include at least **12** semester hours in humanities with a minimum of **3** semester hours in the fine arts (performance courses excluded), **3** hours of literature, and the remaining semester hours from the humanities and/or fine arts. In addition to literature, disciplines in the humanities include, but are not limited to, philosophy, religious studies (courses which explore religions only; courses in religion are not acceptable), speech, foreign languages, art, music, theater, and dance.

All students, except teacher education majors, must complete a six-semester-hour sequence either in literature *or* in history. Teacher education majors must complete six semester hours in history (not necessarily a sequence) *and* a six-semester-hour sequence in literature.

Below is the list of AAMU courses that will satisfy this requirement.

#### Fine Arts

ART 101	Art Appreciation
MUS 101	Music Appreciation
ART 220	History of Art I
ART 221	History of Art II

#### Literature

ENG 201	Survey of English Literature I
ENG 202	Survey of English Literature II
ENG 203	World Literature I
ENG 204	World Literature II

#### Other Humanities

FRE 101	Elementary French I	GER 101	Elementary German I
FRE 102	Elementary French II	GER 102	Elementary German II
FRE 201	Intermediate French I	GER 201	Intermediate German I
FRE 202	Intermediate French II	GER 202	Intermediate German II
SPA 101	Elementary Spanish I	PHL 201	Introduction to Philosophy
SPA 102	Elementary Spanish II	PHL 203	Logic & Philosophy of Science
SPA 201	Intermediate Spanish I	ENG 205	General Speech
SPA 202	Intermediate Spanish II		

#### AREA III:

**Natural/Physical Sciences and Mathematics.** Requirements include at least **11** semester hours with at least **3** semester hours in mathematics at the **pre-calculus algebra level or higher** and at least **8** semester hours in the



natural sciences, which must include laboratory experiences in conjunction with the courses. Below is the list of AAMU courses that satisfy this requirement.

**Mathematics**

MTH 110	Finite Mathematics	MTH 125	Calculus I
MTH 112	Pre-Calculus Algebra	MTH 126	Calculus II
MTH 113	Pre-Calculus Trigonometry	MTH 145	Honors Calculus I
MTH 120	Calculus and Its Applications	MTH 146	Honors Calculus II
		MTH 227	Calculus III

**Natural/Physical Sciences**

BIO 101/101L	General Biology I, Lab I	PHY 101/101L	Physical Science I, Lab I
BIO 102/102L	General Biology II, Lab II	PHY 102/102L	Physical Science II, Lab II
CHE 101/101L	General Chemistry I, Lab I	PHY 103	General Physics I
CHE 102/102L	General Chemistry II, Lab II	PHY 104	General Physics II
CHE 111/111L	Applied Chemistry I, Lab I	PHY 105	Physics I
CHE 112/112L	Applied Chemistry II, Lab II	PHY 106	Physics II

MTH 101 and MTH 107 **cannot** be used to meet the general education requirement. These courses, as well as any others which are at a level lower than pre-calculus algebra, may be taken by students who desire or need additional skill development in mathematics prior to enrollment in higher level mathematics courses. With the advisor’s approval, lower-level mathematics courses may be applied as “free electives” toward the completion of many degree programs. The following courses will meet the mathematics general education requirements. Students should consult with their advisors regarding other options.

**AREA IV:**

***History, Social, and Behavioral Sciences.*** Requirements include semester hours with at least **3 hours** in history, **3 hours** in economics, and **6 semester hours** from other disciplines in the social and behavioral sciences. Disciplines include, but are not limited to, anthropology, economics, geography, political science, history, psychology, and sociology. Below is a list of courses that can be used to meet this requirement.

**Economics**

ECO 200	Basic Economics
ECO 231	Principles of Macroeconomics
ECO 232	Principles of Microeconomics

**History**

HIS 101	World History I
HIS 102	World History II
HIS 201	American History I
HIS 202	American History II
HIS 204	Introduction to Africana Studies

**Other Social Sciences**

GEO 214	World Regional Geography
PSY 201	General Psychology
SOC 201	Introduction to Sociology
UP 103	Community and You
SWK 205	Gerontology
SOC 210	Social Problems
SOC 213	Marriage and the Family

**All students, except teacher education majors, must complete a six-semester-hour sequence either in literature *or* in history. Teacher education majors must complete six semester hours in history (not necessarily a sequence) *and* a six-semester-hour sequence in literature.**

**AREA V:**

**Other Requirements.** Requirements are **one (1) hour** of Survival Skills, and **two (2) hours** of Health, Physical Education or Military Science.

**Freshman Orientation.** The following course is required for all students who enter AAMU with fewer than 31 semester hours of college credit: ORI 101, Survival Skills for University Life

**Health, Physical Education, and Military Science.** The following options are available for fulfilling AAMU's two-semester credit hour requirement in health, physical education, *or* military science:

**Health Science Option.** Select *one* of the following two-semester credit hour courses: (\*Teacher education majors must take HED 101)

FAS 101	Food and Survival of Man
*HED 101	Personal and Community Health
NHM 103	Nutrition Today

**Physical Education Option.** Select any two of the following one-semester credit hour courses.

PED 103	Fitness for Life	PED 117	Archery and Bowling
PED 105	Camping/Outdoor Education	PED 122	Soccer/Track
PED 110	Flag Football/Weight Training	PED 127	Gymnastics/Tumbling
PED 111	Tennis	PED 132	Beginning Swimming/Aquatic Educ.
PED 113	Badminton/Table Tennis/Shuffleboard	PED 134	Intermediate Swimming
PED 114	Aerobics/Weight Training	PED 135	Advanced Swimming & Lifesaving
PED 115	Floor Hockey/Basketball	PED 137	Golf
PED 116	Contemporary Dance	PED 138	Softball/Volleyball

**Military Science Option.** This two-semester credit hour option is available to all majors.

## AREA VI:

**Computer Literacy.** All students are required to achieve computer literacy through discipline-based instruction within their major field(s) of study or one of the following courses:

CMP 101	Fundamentals of Computer and Information Systems
CMP 102	Introduction to Programming
CMP 201	Personal Computers
MGT 213	Computer Applications in Business
AGB 199	Computers in Agriculture

## General Education Outcomes

**Written Composition, Humanities and Fine Arts.** Upon completion of the general education courses in language, literature, and the humanities, the student should achieve the following competencies:

1. Speak and write effectively at a postsecondary level using Standard English.
2. Read and listen with comprehension at a postsecondary level.
3. Explore cultural patterns through the literature, art, and music of a period.
4. Explore, through sensory perceptions, the emotions, mind, and personality of man.
5. Identify relationships pervading literature, art, and music.
6. Recognize both the aesthetic and utilitarian functions of literature, art, and music.
7. Explore the experiences of writers, artists, and composers in their similarities and dissimilarities.

***Natural/Physical Sciences and Mathematics.*** Upon completion of the general studies courses in the natural and physical sciences, the student should achieve the following competencies:

1. Perceive the natural relationships among all living things in their environment with particular reference to humans and their use of living organisms.
2. Perform basic mathematical computations and operations, including problem solving, metrical measurements, and interpretation of data in graph form.
3. Solve problems using the basic laws of physics, particularly in the areas of mechanics, electrostatics, and geometrical optics.
4. Use adequately the mole concept and understand basic concepts involving three states of matter; be conversant with radio, nuclear, and organic chemistry; and be able to relate all of the above concepts to everyday processes important to individuals' current lifestyles.

***Social Sciences.*** Upon completion of the general studies courses in social sciences, the student should achieve the following competencies:

1. Perceive relationships between selected past events and present societal trends.
2. Trace important societal developments.
3. Analyze organizations/systems through which individual and group wants/needs for goods and services are satisfied.
4. Analyze societal power relationships and inter- and intra-group conflict.
5. Recognize the intricacies of social interaction on an individual-to-individual basis, on an individual-to-group basis, and on a group-to-group basis.
6. Perceive relationships between the social development of the individual, the individual's behavior, and ways through which the individual influences and is influenced by others.

***Health Sciences/Physical Education or Military Science.*** Upon completion of general studies courses in health sciences/physical education or military science, the student should achieve the following competencies:

1. Understand contemporary wellness issues and the relationship between nutrition and health in the United States.
2. Identify and be aware of health frauds within the community.
3. Understand the components of the food pyramid and the role of food and food products in human society.
4. Develop personal skills for leisure time participation physical activities.

***Computer Literacy.*** Upon meeting the requirement, the student should be able to:

1. Utilize technology in the professional areas of study.
2. Utilize technology in life skills functioning.
3. Evaluate the use and impact of technology on the individual and society.

## Requirements for a Minor

AAMU's requirement for a minor is 18 credit hours. For the purpose of academic program planning at AAMU, minors and concentrations will be treated as one and the same. The requirements for each minor are listed in the school/department sections of the *AAMU Bulletin*.

## Course Substitutions

The following procedures and standards apply to requests for course substitutions to meet requirements for graduation:

1. Courses recommended for substitution credit must be comparable to those listed in the *AAMU Bulletin* in terms of level, content and competency requirements as indicated by course descriptions.
2. Requirements of the general education program must be strictly observed.
3. Lower-level (100-200) courses cannot be substituted for upper-level (300-400) courses.
4. Upper-level college courses from two-year colleges will not be accepted for credit towards upper-level degree requirements at AAMU.
5. Technical subject requirements cannot be substituted for general education requirements (i.e., electronics for physical science).
6. Courses designated as fulfilling core curriculum requirements in one category cannot be substituted with courses from another category (i.e., speech for history; math for art, etc.).
7. Course substitutions for graduating seniors should be completed by April 1<sup>st</sup> for May graduates; July 1<sup>st</sup> for July graduates; and November 1<sup>st</sup> for December graduates.
8. The student's past academic program shall be evaluated, his/her new or continuing program shall be planned, and recommendations for substitutions as deemed appropriate shall be made during the student's first semester in the program.
9. Recommendations for substitutions must be dated, signed by authorized departmental personnel and/or the dean, and forwarded to the Office of the Registrar.

## Graduation Requirements

Baccalaureate degrees are awarded by authority of the Board of Trustees based upon recommendation of the deans of each school to the candidates who have met the requirements established for the particular degree. The student must also meet AAMU's scholastic regulations.

Degrees are awarded only to students who are in good standing and who have met their obligations to AAMU. Students are referred to the detailed statements of the various schools and departments for additional specific requirements. Each degree must meet the minimum requirement of 120 credit hours. The upper limit for each degree is 126 credit hours, without special permission. Programs that exceed 120 hours typically require 10 semesters for completion.

To be eligible for a bachelor's degree, a student must have a cumulative GPA of 2.0 or higher and satisfy all requirements of his/her major and minor areas of specialization.

Individual program requirements are listed in the school/department sections of the *AAMU Bulletin*. The General Education Requirements are listed below.

Undergraduate degree programs consist of: (1) General Education Requirements—courses required for all undergraduate programs at AAMU; (2) school requirements—courses required for all undergraduate programs in a particular school, e.g. the school of business; (3) major requirements—courses required for undergraduates pursuing a particular major, e.g., urban planning; and (4) free electives—any non-required course offered at AAMU or approved for transfer credit.

## **Graduation Clearance**

While AAMU will endeavor to provide timely and accurate advisement, each student is held responsible for reading, understanding, and meeting the requirements regarding graduation as set forth in the *AAMU Bulletin*. Such requirements include the general education requirements as well as those specified by each program.

## **Bulletin for Clearance**

A student applying for graduation will be processed using the AAMU Bulletin in effect at the date of the student's initial entry into AAMU. However, if the initial period of enrollment is interrupted for two or more years, the student must follow the AAMU Bulletin in use at the time of re-entry. Students may move forward to a more recent AAMU Bulletin with the permission of their advisors. Students must meet all requirements, both general education and major field of study, in the Bulletin being followed. All other changes require the approval of the Academic Standards and Curriculum Committee.

## **Application for the Diploma and Graduation**

Students who anticipate graduation must make formal application to be placed on the list of prospective candidates for an undergraduate degree. The application must be approved by the student's advisor and dean and filed in the Office of the Registrar by the following dates:

<u>Graduation Date</u>	<u>Filing Date</u>
May	Third Week of September
July	Third Week of January
December	Third Week of April

## **Senior Record Check Submission**

The Senior Record Check must be approved by the student's advisor and filed in the Office of the Registrar by the appropriate dates posted on the Official University Academic Calendar and Semester Course Schedule.

## **Residence Requirements**

No undergraduate degrees shall ordinarily be granted unless work of the last two semesters has been completed in residence. If an exception is made, the student must have earned a minimum of thirty credit hours at the University. Students desiring to transfer credits in the final 30 hours should be aware of residence requirements in the individual schools, and should get permission from the school and the Office of Academic Affairs in advance. This includes distance learning courses offered by other institutions.

## Multiple Majors and Second Degrees

AAMU does not normally award a student a second baccalaureate from the school in which the first degree was earned, even if the student completes more than one program leading to a degree. A student who has received one baccalaureate degree may receive a second one from another school (or from the same school) upon:

- Meeting all requirements for both degrees and,
- Presenting for the second degree at least 30 credit hours in addition to those presented for the first degree.

The second degree will be awarded in a subsequent semester from the first.

With the approval and recommendation of the faculty, students may qualify for a second baccalaureate upon completion of the first degree if they fulfill general education requirements in effect at the time of admission for the second degree.

Students who earned their first baccalaureate from another institution must meet the requirements for a new major as specified by the major department, and must earn a minimum of thirty (30) semester units in residence at Alabama A&M University following the date of the first degree.

Students who completed their baccalaureate program at Alabama A&M may qualify for a bachelor's degree in a semester subsequent to the first if they complete requirements for a major in a different academic field as specified by the department and earn a minimum of thirty (30) semester units in residence beyond the requirements for the first degree. Students may not have two degrees awarded in the same semester.

The thirty (30) semester units in residence must include twenty-four (24) units in upper division courses, six (6) units in general education, and at least fifteen (15) units in the second academic major whether the first baccalaureate was earned at Alabama A&M or elsewhere.

Units included in a second baccalaureate program may not be applied to a graduate degree. Candidates for second baccalaureates are eligible for the Dean's List or other semester academic honors according to the same criteria as candidates for first degrees.

## Summary of General Graduation Requirements

To become eligible for graduation from AAMU, a candidate must satisfy the following:

- Complete satisfactorily a curriculum in the school in which he/she is enrolled, including any special requirements established by the school and approved by the Academic Standards and Curriculum Committee.
- Pass all parts of the Freshman Core Test battery.
- Achieve a minimum cumulative GPA of "C" or 2.00, and the minimum GPA specified for the major school or program as indicated in the programs sections of the *AAMU Bulletin*.
- The student must have earned a minimum of 30 credit hours and the last 30 credit hours must be taken at AAMU. Students desiring to transfer credits in the final 30 hours must get permission from the school offering the program and the Office of Academic Affairs in advance.
- Earn at least one-half the courses in his/her major sequence at AAMU, and present for graduation no more than 25 semester hours of work completed through correspondence courses. All correspondence courses must be from regionally accredited institutions.

- Submit to the Office of the Registrar an application to become a candidate for graduation. The application consists of a Senior Record Check Form which certifies that all requirements except courses in progress have been met.
- Satisfy all due and payable financial obligations to AAMU.
- Participate in the Commencement Exercise of his/her graduating class unless excused in writing by the Provost and Vice President for Academic Affairs.

## UNIVERSITY COLLEGE

Dr. Thomas J. McAlpine, Interim Dean  
(256) 372-5753

### Mission

The mission of University College is to build the foundation for optimal learning essential to first-time freshmen, new and potential students. The College serves as the portal of entry for all freshmen and new students; provides academic and support services to help students succeed in their educational pursuits; and certifies lower-division students' completion of requirements for entrance into their major departments. The general objectives are (a) to assist pre-college and currently enrolled students in acquiring the skills and competencies necessary for success in college; (b) to assist freshmen, and other students who have not officially declared majors, in a systematic progression through the freshman core curriculum by providing a comprehensive and effective advising system; (c) to ensure students complete the university-designated program of study and established exit criteria prior to release from University College; (d) to provide instructional programs to meet the varied intellectual needs of students; and (e) to provide a caring, nurturing and communing environment, where relevant skills and competencies, collegiate adjustments, career goals, and education plans commensurate with abilities and interest are actualized.

Academic support services provided by the University College include the Academic Advising Center, the Academic Assistance Program, the New Student Orientation Program (Operation Jump-Start), TRIO/Special Programs, Testing Services, the Developmental Education Program, the Computer Instruction Assistance Laboratory, and the North Alabama Center for Educational Excellence (NACEE) Satellite Program.

### New Student Orientation Program

#### Operation Jump-Start

Freshmen and new students who transfer fewer than 31 semester credit hours must take ORI 101, Survival Skills for University Life, and participate in Operation Jump-Start (OJS) no later than the end of their freshman year. ORI 101, required for graduation, is offered only during the fall and spring semesters, and is only taught in conjunction with Operation Jump-Start. Only those students who have paid the OJS fee will be able to enroll in ORI 101. For more information about OJS, contact the Director of the Academic Advising Center at (256) 372-5746.

ORI 101     *Survival Skills for University Life* - 1 hour. This course assists new students in making a satisfactory adjustment to the collegiate environment. Topics include, but are not limited to, the history of AAMU, academic policies and procedures, study skills, test-taking strategies, time management, coping with stress, date-rape, career exploration, student life, financial aid, money management, and University College exit requirements. Entering freshmen and new transfer students who enter AAMU with fewer than 31 semester credit hours are required to register for this course. This course is mandatory for graduation. The grade earned for this course is used in calculating a student's overall grade point average, but the credit hours cannot be applied towards fulfillment of degree course requirements.

#### Operation Transition

Transfer students who transfer 31 or more semester hours of college credit should participate in Operation Transition at the beginning of the first semester of their enrollment at AAMU. This academic assistance program is designed to assist transfer students in receiving appropriate credit for previously completed coursework promptly, securing advisor assignments, filing official declaration of major forms, understanding University policies and procedures, acquiring an *AAMU Bulletin* and other student reference documents/publications, and so forth. Transfer students who do not enroll in ORI 101 must compensate for the one-credit hour normally earned in that course.



## Freshman Core Curriculum

Freshmen and new students who transfer fewer than 31 hours must complete a minimum of 22 semester credit hours, which comprise the Freshman Core Curriculum, in order to be released to their major departments. Students who are ready to exit University College must take and pass: 6 semester hours of written Composition (a grade of **C** or better is required in each course); 3 semester hours of math **at the pre-calculus level or higher**; 3 semester hours of literature or fine arts; 3 semester hours of a social science; 2 semester hours of physical education activities, health science, **or** military science, **and** ORI 101, Survival Skills for University Life, including Operation Jump-Start.

## University College Exit Requirements

Freshmen and new students who transfer fewer than 31 hours must satisfy the following requirements in order to exit from University College and enter a major school, department, or program:

1. Complete the 22 semester credit hours specified for the Freshman Core Curriculum.
2. Obtain a passing score on all four parts of the Freshman Core Test Battery.
3. Declare a major by completing an official "Declaration of Major Form".
4. Meet all requirements for admission to the school, department, or program of the intended major.

## Freshman Core Test Battery (FCTB)

The Freshman Core Test Battery (FCTB) consists of four standardized tests: (1) Nelson-Denny Reading Test, (2) Descriptive Tests of Language Skills: Usage, (3) Descriptive Tests of Language Skills: Sentence Structure, and (4) Descriptive Tests of Mathematical Skills: Elementary Algebra Skills. Minimum required passing scores are: Mathematics - 18, Nelson-Denny Reading Test - 13.0, English Usage - 20, and English Sentence Structure - 18. University College students should take and pass all parts of the FCTB no later than the end of the first semester of their sophomore year.

## Developmental Education Program

The Developmental Education Program is designed to assist academically challenged freshmen to increase their proficiencies in three areas: English, mathematics, and reading. Placement in each of the developmental courses is determined by criteria set by the responsible department. Freshmen whose placement scores fall below the requisite levels are required to register for the appropriate developmental course(s). Students remain in the program(s) until they achieve specified competency levels. Grades earned in these courses will be computed into a student's grade point average, but credit earned cannot be applied toward the completion of degree programs.

EDU 100      *Developmental Reading* - 3 hours. This is a corrective course of individualized reading instruction designed to improve students' basic reading, study, and cognitive skills, which are essential for success at the college level. Freshmen who enter AAMU with a score between twelve (12) and 17 on the Reading Subtest of the ACT or a score between 10.9 and 12.9 on the Nelson-Denny Reading Test are required to register for this course.

ENG 100      *Developmental English* - 3 hours. This course presents functional aid in preparing freshmen to enter Communication Skills I. It stresses fundamentals of the English language with practical use in writing. Students who pass Developmental English may proceed to Communication Skills I. Those who do not complete the course must re-enroll in it during the next semester in which they are enrolled at AAMU.

MTH 100 *Developmental Mathematics* 3 hours. Topics covered include a brief review of arithmetic concepts; units of measure; basic geometry concepts; word-problem solving; and introductory algebra, including operations with integers, rational numbers, simplifying and evaluating algebraic expressions, and solving simple linear equations.

For additional information about the Developmental Education Program, contact the director at (256) 372-5780.

### **Academic Advising Center**

238 Buchanan Hall  
(256) 372-5646

The Academic Advising Center in cooperation with academic advisors in the students' major departments assists University College students in planning their schedules. They also assist undecided majors in determining their educational plans.

The specific objectives of the Academic Advising Center are as follows:

1. To assist students in developing educational programs that are consistent with their academic skills, interests, and career goals.
2. To help students become knowledgeable of the educational requirements, policies, procedures, and regulations of AAMU.
3. To assist students in minimizing academic frustrations by providing orientation to college life activities.
4. To aid students in the periodic evaluation of their progress toward achievement of educational goals.
5. To assist students in the completion of requirements for entry into degree-granting programs of their choice.

Students who declare majors and who do not have to take developmental courses are assigned to co-advisors in their major departments. All University College students are assigned an advisor from the Academic Advising Center until they exit University College.

### **The Office of Retention and Academic Support**

105 Buchanan Hall  
(256) 372-5490

The Office of Retention and Academic Support (ORAS) was developed by the Office of the Provost in August 2001 to actualize the University's commitment to provide students with the support needed to achieve their educational goals. ORAS is a multi-faceted, comprehensive unit designed to facilitate and improve student success, retention and graduation rates. The Office facilitates retention initiatives between academic and student affairs divisions; supports and monitors students' academic progress; collaborates with academic advising units; provides referrals to campus resources; and coordinates programs that foster the academic success of students. All ORAS services help students make meaningful connections to the overall university experience.

## **Mission**

The mission of the Office of Retention and Academic Support is to retain students through graduation and assist them in becoming successfully acclimated to the university by providing necessary academic and social support. ORAS will accomplish this by committing to our shared values and by offering the highest level of service to the students we serve. Our strategies for accomplishing our mission include offering academic one-on-one assistance through the Intrusive Academic and Probation Services (IAPS); tutoring via the Tutorial Assistance Network (TAN); continued academic strengthening through the Learning Strategies Workshops; and working collaboratively with all facets of the university community. In this way we will ensure that students will obtain the skills essential for graduation.

## **Intrusive Academic and Probation Services (IAPS)**

Services are available to students who require intrusive academic assistance on a one-to-one basis. Students can walk in or call the office to set up an appointment at any time throughout the semester. Students are also referred by faculty and staff.

Specialized academic assistance is provided to students on academic probation or those who have been readmitted after academic suspension. ORAS will assist these students in identifying viable options and/or solutions to increase their chances of achieving academic success.

## **Tutorial Assistance Network (TAN)**

ORAS coordinates and maintains a campus wide peer tutorial program. Tutors are available in most academic courses and offered at no cost to the student. One-to-one and small group tutoring is provided for those students who are interested in regular, weekly tutoring assistance. Tutors are assigned to students who sign up in the TAN office located in 100-C Buchanan Hall.

## **Learning Strategies Workshops**

The Learning Strategies Workshops are designed, developed and presented by ORAS staff to enhance students' success. Workshop topics include goal setting, mid term and final exam preparation, procrastination busters, time management, thinking critically, self-confidence builders, and study skills techniques, among others. Selected faculty conduct both the mid-term and final exam prep workshops. The workshops are presented weekly, alternating Tuesdays and Thursdays from 12:30 p.m. – 1:30 p.m. in a designated building.

## **Academic Alert Program**

The Academic Alert Program collaborates with faculty to intervene with students who demonstrate a need for such attention if they are to successfully complete their course requirements. ORAS contacts each student referred by faculty to extend intrusive assistance through IAPS and TAN services.

## **Changing Lanes**

Changing Lanes is designed primarily for first-time college freshmen who are conditionally admitted to the university. Students will have access to an array of academic support services to improve their chances for academic success. Services include one-to-one academic counseling, peer tutoring, assignment of a peer advocate, monitoring students' progress through the Academic Alert Program, and continued academic strengthening through the Learning Strategies workshops and computer labs. ORAS serves as a one-stop source of information for these students.

### **Testing Services Center**

200 Buchanan Hall  
(256) 372-5645

The Testing Services Center serves as a central clearinghouse for student placement and assessment at AAMU. Systematic data profiles which indicate student trends are developed and disseminated to appropriate professional personnel to assist in academic advising, curriculum development, career education, and job placement.

Additionally, the Center administers agency tests as a service to AAMU and to the local constituency. Such tests include, but are not limited to, the FCTB, GED, LSAT, ACT, and CLEP. Registration packets are available for the MCAT, NTE, DAT, GMAT, GRE, TOEFL and other examinations. Information concerning tests, dates, and procedures can be obtained from the Testing Services Center, which is located in Room 200 Buchanan Hall.

### **TRIO/Special Programs Upward Bound and Student Support Services**

136 Buchanan Hall  
(256) 372-5660

#### **Upward Bound**

The Upward Bound Program addresses the educational, personal, and social goals of eligible high school students, while encouraging them to attend college upon completion of high school. The program is designed to generate the skills and motivation necessary for success in education beyond high school. The program supports projects designed to increase high school graduation rates; increase competency in challenging subject matter, including English, mathematics, science, foreign language, and literature; encourage students to pursue programs that lead to careers in mathematics and science; and help gain parental participation in the social, emotional, and academic growth of program participants. The program is also designed to help students adequately prepare for post-secondary school by providing a variety of seminars and workshops. Cultural, social, and enrichment activities are also provided.

#### **Student Support Services**

The Student Support Services Program helps a target population of high-risk students make a smooth transition from high school to college. Services include academic advising, counseling, tutoring (peer, video, group, and professional), workshops and seminars, career exploration activities, assistance in securing financial aid assistance for post-secondary school and graduate/professional school, acceptance in a home-away-from-home atmosphere, and a mentoring program. This program targets low income and first generation college students, as well as students with disabilities.

#### **Adopt-a-Family**

The Adopt-a-Family Program is designed to help at-risk students (K-12) stay in school and make satisfactory academic progress. The program provides one-on-one and small-group tutoring by college students, community volunteers, and program proctors. These services are available on the campus, at the Boys and Girls Club Incorporated, the Girls' Club, and sometimes at local elementary and middle schools.

## **Academic Assistance Program**

136 Buchanan Hall  
(256) 372-5660

The Academic Assistance Program (AAP) is a support service which provides individualized instruction and study guidance to undergraduate students experiencing academic difficulty in college courses. The program promotes an environment which is conducive to enabling students to improve basic competencies in reading, writing, and mathematics on a flexible, self-paced basis. Additionally, the AAP provides traditional and non-traditional tutorial services to support classroom instruction in the general studies curriculum. The University College Computer Instruction Assistance Laboratory supports developmental and general education classes.

## **HONORS PROGRAM**

Honors Center  
(256) 372-5859

The Honors Program offers challenges and opportunities for academically talented students who are seeking to develop their full potential as scholars and as citizens. The Program provides creative opportunities, experiential learning, leadership development, and professional interactions with noted scholars.

### **Goals**

1. To attract students who are academically talented and to offer programs of study designed to stimulate them to do the quality of work equal to their potential.
2. To provide a program of study both challenging and rewarding which prepares participants to enter and to successfully complete graduate and professional programs of study.
3. To encourage and stimulate learning outside of the classroom.
4. To enable qualified students to progress at an accelerated rate.
5. To maximize the opportunity for students to grow intellectually through classroom activities, colloquia, research, and writing seminars; and to broaden and enhance their social and cultural experiences.
6. To encourage Honors Program students to participate in various activities at AAMU and to serve as classroom volunteers, peer counselors, teaching assistants, research assistants, laboratory assistants, and program assistants for major University functions.
7. To enhance the educational climate of AAMU, thereby stimulating all students to perform to their intellectual capacity.
8. To participate in cooperative linkages and collaborative agreements with graduate and professional schools at major universities across the nation and with industries seeking individuals who are highly trained.

### **Honor's Program Admission**

To be admitted, entering freshmen must apply to AAMU **and** to the Honors Program. Second semester freshmen are also eligible to apply. Admission requirements are as follows:

1. ACT score of 23 and above or SAT score of 1030 and above.
2. High school grade point average of 3.3 in academic courses for entering freshmen.

3. Second semester college freshmen with ACT scores of 21-22 (SAT 1025) may be considered for admission if they have at least a 3.5 grade point average in a minimum of twelve (12) semester credit hours of regular academic courses completed at AAMU and a cumulative high school grade point average of 3.3.

Supporting data include the following:

1. For entering freshmen, three letters of recommendation are required: one from a counselor and two from high school faculty members under whom the student has completed an academic course. For second semester freshmen, letters may come from an advisor and two faculty members under whom the student has completed courses at AAMU.
2. An autobiographical essay.
3. An interview with members of the Honors Program Advisory Council or the director.

### **Program Requirements**

In addition to meeting the established eligibility requirements for admission to the Honors Program, participants must also meet specified standards to remain in the program. Standards are reviewed on an annual basis and are, therefore, subject to change. As a minimum, all Honors Program participants are currently required to complete the following to remain eligible for participation in the program:

- Enroll in a minimum of twelve (12) hours per semester.
- Maintain the following overall cumulative grade point averages as specified for each classification:
 

Freshman	3.3
Sophomore	3.4
Junior	3.5
Senior	3.5
- Attend 90% of all regularly scheduled Honors Program meetings and 50% of all sponsored events.
- Must complete at least 20 hours of volunteer service to the community **and**, 20 hours of volunteer service to AAMU **each** semester (freshmen and sophomores); or complete 10 hours of volunteer service to the community and 10 hours of volunteer service to AAMU **each** semester (juniors and seniors).
- Apply for at least six internships, research assistantships, and/or scholarships during **each** academic year.
- Participate in at least two campus organizations: one should be related to the participant's major field of study and one should be general in nature.
- Enroll in at least nine (9) semester hours of Honors coursework each semester as a freshman and sophomore, if available.
- Must enroll in IDS 301 Honors Seminar as a junior and must enroll in IDS 401 Senior Honor Project as a senior.
- Apply to a graduate or professional school prior to graduation from AAMU.
- Attend at least four non-athletic, University-sponsored forums, convocations, and other events **each** semester.

- IDS 301      *Honors Seminar* - 1 hour. This course places selected current events, issues and problems in perspective through an analysis of their origins and their development over time. Students will explore these events, issues, and problems in-depth with special emphasis given to those of particular interest to the class. Required of all junior-level Honors Program participants.
- IDS 401      *Senior Honors Project* - 3 hours. This is a comprehensive culminating activity in which students demonstrate essential knowledge, skills, and appreciation of their field(s) of study. The nature of the project will depend on the discipline, i.e., paintings, pottery, musical composition/recitals, original literary works, films/videotapes, and traditional investigative/ research projects. Research projects will be supervised by Honors faculty and departmental faculty.

### **Honors Courses**

As freshmen and sophomores, Honors Program participants enroll in a minimum of nine semester credit hours of honors courses each semester. Seminars, colloquia, and projects are offered at the junior and senior levels. Courses currently approved are as follows:

ART	101H	Honors Art Appreciation
BIO	101H	Honors General Biology I
BIO	102H	Honors General Biology II
BIO	101L(H)	Honors General Biology Lab I
BIO	102L(H)	Honors General Biology Lab II
ECO	200H	Honors Basic Economics
ENG	101H	Honors Composition I
ENG	102H	Honors Composition II
HIS	101H	Honors World History I
HIS	102H	Honors World History II
ENG	203H	Honors World Literature I
ENG	204H	Honors World Literature II
IDS	301	Honors Seminar
IDS	401	Senior Honors Project
MTH	145H	Honors Calculus I
MTH	146H	Honors Calculus II
MUS	101H	Honors Music Appreciation
PHY	101H	Honors Physical Science I
PHY	102H	Honors Physical Science II
OC	201H	Honors Introduction to Sociology

### **Withdrawal**

Students may withdraw from the Honors Program at any time by notifying the director in writing. Freshmen students who do not maintain the required 3.3 cumulative grade point average will be placed on inactive status for the succeeding semester. Students falling below the required grade point average for two consecutive semesters will be dropped from the program.

### **Reinstatement**

Students dropped or who withdraw from the Program may be reinstated upon attaining the required minimum grade point average based on their class standing and receiving a positive recommendation from the Honors Program Advisory Council.

## **RESIDENCY STATUS FOR IN-STATE TUITION**

### **Definition of Residency**

For the purpose of assessing tuition and fees, AAMU classifies students as Alabama “residents” or “non-residents.” Residency, for this purpose, means domicile; domicile means living in the state of Alabama with the intent to make Alabama a fixed and permanent home. By way of example, students may have more than one home address but only one domicile. All out-of-state students must pay non-resident fees. In general, a student who comes to Alabama for the purpose of attending an institution of higher education is considered a non-resident student. Registration for voting, obtaining an Alabama driver’s license, purchasing of property, and employment in Alabama are not necessarily in and of themselves sufficient grounds on which to establish residency for the purpose of attending an institution. Students from outside of Alabama will be assumed to be non-resident students, unless they affirmatively fall within the criteria specified below.

### **Requirements for Residency**

Information to assist AAMU in its administrative responsibility for determining students’ residency status must be provided by the students. Residents of Alabama, as well as categories of non-residents hereinafter identified, may be enrolled upon payment of resident tuition and fees as follows:

1. (a) A student may register as an Alabama resident for tuition purposes only upon showing that he/she has been a resident of Alabama for a period of at least twelve (12) months prior to initial registration.  
 (b) No emancipated minor or person 19 years of age or older shall be deemed to have gained or acquired Alabama residency status for tuition purposes while attending any educational institution in this state, in the absence of a clear demonstration that he/she in fact established residency in this state.
2. If a person is under 19 years of age and living with a parent or guardian, he/she may register as an Alabama resident for tuition purposes only upon showing that his/her parent(s) or guardian has been a bona fide resident of Alabama for a period of at least twelve (12) months prior to initial registration.
3. A full-time faculty member of AAMU, his/her spouse, and his/her dependent children under age 25 may register for the payment of resident fees, even though they have not been bona fide residents of Alabama for the preceding twelve (12) months.
4. The spouse of any person who is classified as or who is eligible for classification as an Alabama resident student for tuition purposes, except spouses of those granted residency as a result of graduate assistantships, are entitled to Alabama residency classification for tuition purposes.
5. Military personnel and their dependents stationed in Alabama and on active military duty are entitled to Alabama residency classification for tuition purposes.
6. A/an student/applicant, spouse, parent, or guardian, who is not a resident of Alabama but who has been employed full-time in Alabama for at least twelve (12) months and has filed his/her Federal Personal Income Tax form jointly with a qualifying spouse for the tax year prior to the year in which the student is either admitted or registered for classes, is entitled to Alabama residency classification for tuition purposes.
7. International students shall be classified as non-resident students provided, however, that an international student who is living in this country under a visa permitting the establishment of a permanent residence shall have the same privilege of qualifying for Alabama residency status for tuition purposes as a citizen of the United States.
8. Any Alabama resident student who remains in the state after his/her parent(s) or guardian (previously legal residents of Alabama or stationed in Alabama on military orders) move(s) from the state shall be entitled to remain classified as an Alabama resident student for tuition purposes as long as attendance is uninterrupted. Such students need not attend the summer session in order to render attendance uninterrupted.



9. In the event that a bona fide resident of Alabama is appointed as guardian of a non-resident minor, such minor will not be permitted to register as an Alabama resident for tuition purposes until the expiration of one year from the date of court appointment, and then only upon proper evidence that such appointment was not made to avoid payment of non-resident fees.
10. Students determined to be eligible for resident tuition purposes by an Alabama state-supported college or university retain their resident eligibility for one academic year upon transfer to AAMU.
11. Any student granted status as an Alabama resident student for tuition purposes whose status is based on a sworn statement which is false is subject to disciplinary sanctions as might be imposed by AAMU.

### **Changes in Residence Status**

Applicants who are classified by AAMU as non-residents but who later claim to qualify as bona fide residents of Alabama for tuition purposes must file a Petition for Alabama Residency Classification for Tuition Purposes with the Office of Admissions. With few exceptions, a student can change his/her status from a non-resident to an Alabama resident student for tuition purposes only by actually residing in the state for the period required, with the intention of assuming residence within the state indefinitely and by establishing a physical presence and place in the state which he/she considers to be his/her true, fixed, and permanent home and place of habitation. **In determining whether the student is in fact an Alabama resident for tuition purposes, the burden of proof rests with the student.**

To receive consideration, petitions for change of status and all supporting documentation must be filed with the Office of Admissions (undergraduate students) or the Office of Graduate Studies (graduate students) on or before the following dates:

Fall Semester	July 15
Spring Semester	November 15
Summer Sessions	April 15

When a petition is approved, classification as a resident for tuition purposes will not be retroactive to the prior semester; however, any non-resident fees paid in advance for succeeding semesters will be adjusted. The Offices of Admissions and Graduate Studies will have the responsibility for classifying a student as an Alabama resident or non-resident for tuition purposes.

### **Appeals of Residency Status**

A student who wishes to appeal the decision resulting for his/her petition for Alabama residency may request a review of that decision before the AAMU Residency Review Committee. Appeals must be made in writing to the chairperson of that committee within 10 working days of the decision.

## FINANCIAL INFORMATION

### Tuition, Fees, and Deposits

#### Undergraduate

Students registering for ten (10) or more credit hours are assessed mandatory fees of \$260.00 per semester. Students are entitled to entry to athletic events and student activities. Students registering for nine (9) hours or less are assessed mandatory fees of \$175.00 per semester.

#### Graduate

Students registering for seven (7) or more credit hours are assessed mandatory fees of \$260.00 per semester. Students are entitled entry to Athletic Events and Student Activities. Students registering for six (6) hours or less are assessed mandatory fees of \$175.00 per semester. All students are assessed a \$5.00 **graduate registration fee**.

#### Other Fees and Deposits

(Required of students only when applicable)<sup>1</sup>

Add/Drop Fee Per Form .....	\$ 25.00
*Application Fee (Undergraduate State/Non-State Residents).....	10.00
*Application Fee (Undergraduate International Students) .....	25.00
*Application Fee (Graduate Students State).....	25.00
*Application Fee (Graduate Non-States).....	25.00
Audit Fee (per hour) .....	118.00
Campus Parking Permit (Students per year).....	10.00
Campus Parking Permit (Students Summer) .....	5.00
Campus Parking Permit (Faculty/Staff per year).....	35.00
Campus Parking Permit (Faculty/Staff Summer) .....	17.50
Cooperative Education (Undergraduate State Residents).....	354.00
Cooperative Education (Undergraduate Non-Residents).....	708.00
English Competency Examination .....	15.00
*Extended Payment Exam (Per Transaction) .....	25.00
Graduation Fee (Undergraduate) .....	30.00
Graduation Fee (Graduate) .....	45.00
Graduation Fee (Ph.D.).....	55.00
*Graduate Registration Fee .....	5.00
*I.D. Card Replacement (Non-Boarding Students) .....	25.00
Key Deposit (Boarding Students) .....	6.00
Late Registration Fee.....	50.00
*Matriculation Fee (Undergraduate) .....	100.00
*Matriculation Fee (Graduate) .....	150.00
*Meal/I.D. Card Replacement Fee (Boarding Students) .....	50.00
*Re-Admission Fee (Undergraduate International Students) .....	25.00
*Re-Admission Fee (Undergraduate State/Non-State Residents).....	10.00
*Room Reservation Fee.....	100.00
Thesis Binding.....	42.00
*Transcript (each).....	3.00

#### \*non-refundable

<sup>1</sup>An academic discipline may designate fees for specific program activities not covered by the basic tuition and fees.

## International Students

All first-time international students are required to deposit one-year's tuition and fees with the Cashier's/Comptroller's Office (two semesters).

International students must conform to Bureau Citizenship and Immigration Services (BCIS) regulations concerning the INS Form I-20, Section 8, for financial assistance. Additionally, all international students must purchase and maintain mandatory health insurance in accordance with the INS guidelines. For further information, contact the Office of Admissions (256) 372-5245.

## Housing and Meals

### Residence Hall Rates, Per Semester

West Campus Living/Learning Complex .....	\$1,300.00
Foster Living/Learning Complex .....	1,300.00
All Other Dormitories .....	700.00

Residential Life and Housing offers a variety of on-campus accommodations. The cost per semester ranges from \$700.00 to \$1,300.00 for double occupancy. Single occupancy rooms are available at double the rate. All rooms are equipped with telephone and cable. Telephone charge is \$66.00 and cable charge is \$60.00 per semester. For further detailed information, contact the Housing Office (256) 372-5797.

### Meal Services, Per Semester

Alabama A&M University offers full-line dining services at several on-campus locations. There are two meal-plan options available:

Option 1: 18 meals a week per semester .....	\$875.00
Option 2: 21 meals a week per semester .....	\$950.00

The University requires all boarding students to purchase a meal card. Upon payment, a meal/ID card will be issued. The meal/ID card is not exchangeable or transferable and must be used during the period for which it is issued. **A student will not be permitted to change a meal plan after the fifteenth calendar day.** This card is valid throughout a student's enrollment at the University. It must, however, be validated each semester. A \$50.00 replacement fee will be charged for a lost or damaged meal/ID card.

Non-boarding students may purchase a meal/ID card at the same rate and must adhere to the same requirements as boarding students. For further information, contact the ID Card Center at (256) 372-5185.

## Books and Supplies

Textbooks may be purchased from the Bookstore located in the Ralph H. Lee Student Center. The estimated cost is \$400.00 **per semester**. The Bookstore accepts the following methods of payment: Cash, Money Order, Cashier's Check, Traveler's Check, MasterCard, VISA, American Express and Discover Credit Cards. For further information, contact the Bookstore (256) 372-5626.

**Remittances**

All remittances, if not made in person at the Bursar’s Office, should be made payable to Alabama A&M University and mailed to:

Cashier’s Department  
 Alabama A&M University  
 Post Office Box 1388  
 Normal, Alabama 35762

Bills may be paid in the Cashier’s Department located in room 105-A Patton Hall Building between 8:30 a.m. and 4:00 p.m., Monday through Friday.

The Bursar’s Office is closed on Saturdays, Sundays, and holidays. A valid student identification card **must** be presented when transacting official business with the Cashier’s Department. **All payments to AAMU must be made with cash, postal money order, bank money order, traveler’s check, cashier’s check, certified check, and MasterCard or VISA credit cards.**

**No portion of a payment to AAMU will be given as change to the student.** Monies for books and other personal items should be provided to the student via cash or credit card. AAMU does not cash personal checks.

Students are expected to meet all financial obligations by the specified due date. AAMU reserves the right to deny admission and withhold transcripts of any student who fails to meet promptly his/her financial obligations to AAMU. It is each student’s responsibility to be informed of all registration and fee payment dates, deadlines, and other requirements

**Restrictions Due to Indebtedness to the University**

No student will be permitted to register for a semester until all bills from the previous semester have been paid. Failure to meet financial obligations, as scheduled, will cause a forfeiture of privileges of the dining facilities, residence halls, classroom facilities and other activities.

No transcript or record will be issued for any student who is indebted to the University. This includes, but is not restricted to, a delinquent Carl D. Perkins Loan.

**Refund Policies**

Tuition and fees are refundable in accordance with the following schedule when a student withdraws from the University after completing the registration process.

**Fall and Spring Semesters**

From first official day of class through the seventh calendar day .....	90%
From the eighth calendar day of class through the fourteenth calendar day.....	80%
From the fifteenth calendar day of class through the twenty-first calendar day.....	70%
From the twenty-second calendar day through the thirtieth calendar day .....	60%
<b>NO REFUND AFTER THE THIRTIETH CALENDAR DAY</b>	

**NOTE:** The tuition refund percentage is based on the total tuition charged and not the amount paid. A full refund will be issued if a course is cancelled by AAMU.

**FEES PAID BY MASTERCARD OR VISA CREDIT CARDS WILL BE CREDITED TO THE CARDHOLDER’S CARD UPON WITHDRAWAL FROM A CLASS OR WITHDRAWAL FROM THE UNIVERSITY (NO EXCEPTIONS).**

Students scheduled to receive Financial Aid, who are not planning to attend a session for which they have pre-registered, must notify the Financial Aid Office in writing prior to the first day of class to cancel their pre-registration and Financial Aid. Students who fail to notify the Financial Aid Office prior to the first day of class will be enrolled and subject to academic and financial penalties.

### **Emergency Separation for Military and Military Spouses Policy**

Students who withdraw due to being called to active duty or spouses of persons called to active duty may be eligible for a full refund of required tuition, and fees. All students who receive Title IV funds will be processed according to federal policies. Federal policy statements are available in the Office of Student Financial Aid.

### **Cancellation of Registration**

Students will initiate the process by requesting cancellation in the Registrar's Office. If the term has already been completed, a Registrar's Office staff member will review the student's status to determine if passing grades were received. If no passing grades are recorded, the staff member will verify that no passing grades have been received before issuing the form to the student. If the term is still in session, the staff member will indicate current term. The student will proceed to the Office of Financial Aid for verification of financial status. Cancellation of requests for Financial Aid must be verified or processed. If approved by the Financial Aid Officer, the student returns the form to Office of Registrar. Courses will be removed from the student's record. The student will present the approved document to the Bursar's Department for removal of charges for the term. A full refund of tuition and fees will be given if the student is eligible.

### **Refund of Room Rent and Board**

The application for campus housing and subsequent room assignment is a contract between AAMU and the student for a one-year period. Room rent will not be refunded to a student unless he/she officially withdraws from the University.

**Withdrawing from the Resident Hall, Only.** Students withdrawing from the Residence Hall prior to officially registering will not be charged board. Students withdrawing from the Residence Hall after registration will receive only a board adjustment.

### **Withdrawal from the University**

If a student officially withdraws from the University with no mitigating circumstances, a refund of room rent will be made on the following basis:

Before the fourth week of classes 75% of the unexpended portion of the rent for Residence Hall space.

After the fourth week of classes to the end of the semester, 50% of the unexpended portion of the rent for Residence Hall space.

### **Intent to Vacate Residence Hall**

Students forfeit housing fees for the current academic year as stated in the contract agreement for student housing. The unused portion of the meal ticket payment will be refunded upon official withdrawal from the University, the completion of Intent to Vacate form, available at Residential Life or Special Student Services, or other authorized reasons.

### **Disciplinary Suspension Refund**

Suspension is a temporary dismissal from the University for a specific period of time. The student loses all the rights and privileges as a student, and forfeits all fees paid.

## FINANCIAL AID POLICIES AND PROCEDURES

The Office of Student Financial Aid is a service-oriented organization with the primary responsibility of helping students secure the funds necessary to pursue their educational goals. Financial assistance can be acquired through the following programs:

### Types of Aid

#### Federal Aid

- **Federal Perkins Loan Program.** The Federal Perkins Loan is a low-interest (5 percent) loan designed for both undergraduate and graduate students with exceptional financial need. The total amount a student can borrow as an undergraduate is \$15,000. Including any Federal Perkins Loans borrowed as an undergraduate, students may borrow up to \$30,000 as a graduate or professional student. Students must repay this loan to Alabama A&M University.
- **Federal Work-Study Program.** The Federal Work-Study Program provides on-campus and off-campus jobs for undergraduate and graduate students with financial need, allowing them to earn money to help pay educational expenses. The program encourages community service work and work related to students' course of study. Students total Federal Work-Study award depends on when they apply, their level of need, and the funding level of their institution.
- **Federal Supplemental Educational Opportunity Grant (FSEOG).** The Federal Supplemental Educational Opportunity Grant is for undergraduates with exceptional financial need (lowest Expected Family Contributions) and gives priority to students who receive Federal Pell Grants. Students can receive between \$100 and \$4,000 a year, depending on when they apply and their level of need. The FSEOG does not have to be repaid. Students who are pursuing a second bachelor's degree are not eligible for the grant.
- **Federal Pell Grant.** A Federal Pell Grant, unlike a loan, does not have to be repaid. Pell Grants are awarded only to undergraduate students who have not earned a bachelor's or professional degree. To determine eligibility, the U.S. Department of Education uses a standard formula, established by Congress, to evaluate the information students report when they apply. The maximum award for the 2003-04 award year was \$4,050. Awards for each year depend on program funding.
- **Family Federal Education Loans.** *FFEL Stafford Loans* are either subsidized or unsubsidized. A **subsidized** loan is awarded on the basis of financial need. Borrowers will not be charged interest before beginning repayment or during authorized periods of deferment. Loan money must first be used to pay tuition and fees, room and board, and other school charges. Maximum loans are \$23,000 for all undergraduate work or \$65,500 for both undergraduate and graduate work. Borrowers must repay this money beginning six months after the borrower ceases attendance at AAMU and extending over a period of up to ten years.

An **unsubsidized** loan is awarded without regard to need. The borrower is charged interest from the time the loan is disbursed until it is paid in full. If the interest accumulates, it will be **capitalized** – that is, the interest will be added to the principal amount of the loan and additional interest will be based upon the higher amount. This will increase the amount of repayment. Independent undergraduate students may borrow a maximum of \$23,000. Graduate or professional students may borrow up to \$73,000 including any funds borrowed as an undergraduate student. The student must repay this money beginning six months after ceasing attendance at AAMU.

**PLUS Loans** enable parents with good credit histories to borrow to pay the education expenses of each child who is a dependent undergraduate student enrolled at least half time. The yearly limit on a PLUS Loan is equal to the cost of attendance minus any other financial aid received. For example, if the cost of attendance is \$6,000 and the student receives \$4,000 in other financial aid, his or her parents could borrow up to but no more than \$2,000. The interest rate is variable, but will never exceed nine percent. Generally, repayment must begin within 60

days after the final loan disbursement of the academic year. There is no grace period for these loans. **Parents must begin repaying both principal and interest while students are still in school.**

### **State Aid**

- **Alabama Student Assistance Program (Leveraging Education Assistance Partnership (LEAP) Program).** This state/federal aid program is designed to provide assistance to undergraduate residents of Alabama. Awards range from \$300 to \$2,500 per year. Residents of states other than Alabama should contact the higher education assistance agency in their states for information about the availability of funds from the LEAP program.
- **Alabama National Guard Education Assistance Program.** A state program designed to provide financial assistance to Alabama National Guard members who are also residents of the state of Alabama, its purpose is to aid undergraduate and graduate students at accredited Alabama postsecondary institutions of higher learning. The student may receive an award equal to tuition, fees, books, and supplies, not to exceed \$500 per semester and \$1,000 annually.
- **Alabama GI Dependents' Education Benefit Program.** This state program provides tuition, fees, and book assistance to children and spouses of eligible Alabama veterans who attend public postsecondary educational institutions in Alabama. Recipients must enroll as undergraduate students. Application forms may be obtained from the Alabama State Department of Veterans' Affairs, Post Office Box 509, Montgomery, AL 36102.
- **American Legion Auxiliary Scholarship Program.** This grant is awarded for tuition, fees, and board expenses to attend an Alabama public postsecondary educational institution. Awards are restricted to students who attend an Alabama institution. To be eligible, students must be the sons, daughters, grandsons, or granddaughters of veterans of World War I, World War II, the Korean War, or the Vietnam War and be residents of Alabama. Applications are available from the American Legion Department Headquarters, American Legion Auxiliary, 120 North Jackson Street, Montgomery, AL 36104.

### **Institutional Aid**

- **Academic Scholarships.** Scholarship awards are based on scores from the American College Testing (ACT) program or the Scholastic Aptitude Test (SAT) administered by the College Entrance Examination Board and a high school grade point average of "B" or above. Scholarships range in size over a four-year period from \$3,160 to full tuition, fees, room, and board. Additional details can be obtained from the Office of Admissions, Alabama A&M University, Normal, AL 35762.
- **Performance Music Scholarships.** Music scholarships are offered in both band and choir. The size of these awards varies. Additional details can be obtained by writing to Scholarship Coordinator Music Programs, Post Office Box 295, Alabama A&M University, Normal, AL 35762.
- **Athletic Scholarships.** These awards are made for football, basketball, baseball, soccer, tennis, track and field, and volleyball. The size of these awards varies. Additional details are available by writing to the head coach for the sport in which the applicant is interested.
- **University Student Employment Program (Bi-Weekly).** Jobs permit students to earn money to apply toward their school expenses. Students who are employed in the program perform jobs in various offices at AAMU. Earnings depend upon financial need and the current U.S. minimum wage. Additional details can be obtained by writing to the dean of the school, chairperson of the department, or office director where the applicant wishes to be employed.
- **Army Reserve Officers' Training Corps Scholarship (ROTC).** Scholarships are awarded on a competitive basis and are available for four years. All Army ROTC scholarships are for tuition and fees, books and supplies for the duration of the scholarship. Recipients also receive a tax-free monthly subsistence allowance for up to

ten months of each academic year. Additional details may be secured by writing to the Professor of Military Science, Post Office Box 1028, Alabama A&M University, Normal, AL 35762.

- **School and Departmental Awards.** Scholarships, grants, and assistantships are also available through the various schools and departments of AAMU. Unlike the other aid sources, a recipient must have a major in an area of study within the department or school that administers the aid source. Currently, there are more than 25 categories of aid offered to students through the various schools and departments. Additional details may be secured by writing to the dean of the school or the chairperson of the department in which the applicant's major will be located.
- **Diversity Scholarship Program.** These scholarships are directed toward identifying and attracting a significant number of students of diverse backgrounds and characteristics to AAMU. Diversity goals include the attraction of a significant number of undergraduate Caucasian students to AAMU. Additional information can be obtained by contacting the Director of Admissions, Post Office Box 908, Alabama A&M University, Normal, AL 35762.

### **Procedures for Applying for Federal Financial Aid**

- Be admitted to AAMU, if the applicant is a freshman, transfer, or returning student.
- Complete and submit the Free Application for Federal Student Aid (FAFSA) to the U.S. Department of Education, preferably before February 1. Submit as early as possible in order to be eligible for limited forms of aid such as FSEOG, Federal Work-Study and Federal Perkins Loans.
- If needed, submit supporting documents required to verify the accuracy of the data to AAMU's Office of Financial Aid.

### **Maintaining Eligibility**

Alabama A&M University is required by federal law (34 CFR 668.16) to define and enforce standards of Satisfactory Academic Progress (see page 24). The Office of Student Financial Aid strictly adheres to the academic standards presently established by AAMU and printed in the current *AAMU Bulletin*. The guidelines are established to encourage students to successfully complete courses for which aid is received. Title IV Federal Assistance includes the following programs:

- Federal Pell Grants
- Federal Supplemental Educational Opportunity Grants
- Leveraging Education Assistance Partnership Program (LEAP-formerly the State Student Incentive Grant Program)
- Federal Parent PLUS Loans
- Federal Stafford Student Loans (Subsidized and Unsubsidized)
- Federal Work-Study
- Federal Perkins Loans



## J. F. DRAKE MEMORIAL LEARNING RESOURCES CENTER

Through the generosity of the Carnegie Foundation, the first library building was constructed in 1906. This facility contained approximately 4,092 square feet of floor space and housed the offices of the College President, the U.S. Post Office at Normal, the Business Manager and Treasurer, Home and Farm Demonstration Agents, and living quarters for male faculty on the second floor.

In 1931, 25 years after the first library building was constructed, Miss Lucille A. Love, a graduate of the Library School at Hampton Institute, became the first professional librarian at Alabama A&M University.

As the years passed and collections grew, the library program occupied all of the building and in 1947 the original building was enlarged. The College outgrew the 9,000 total square feet so rapidly with the increasing student population and appropriations for library materials that the Reference Annex was added in 1962. This served students and faculty until January 1968 when a new building was constructed and occupied. The building was named in honor of Dr. Joseph Fanning Drake, the fourth President of the University. It was a three-story structure containing 60,000 square feet of floor space designed to accommodate 300,000 volumes and seat 1,000 readers.

The Educational Media Center and the Library were combined in 1973 to form the Learning Resources Center (LRC). No longer is the library just a library in the traditional sense of the word. It is now a multi-media information center which focuses not only on the printed word but incorporates various forms of media as a means of teaching and learning. Therefore, in the LRC, you will find a collection of media software (audio and video tapes, CDs, DVDs, etc.) as well as the accompanying media equipment, in addition to a comprehensive collection of books, periodicals, newspapers, and electronic databases.

The LRC facility was completely renovated in 2002. It remains a 3-story structure. However, it now includes an additional 15,455 square feet of useable space. A new front entrance, a Faculty Reading Room, a student and a staff lounge, an International Room, a fully interactive Multipurpose/Distance Learning Auditorium, patron lockers, three classrooms, two conference rooms, and a Streaming Lab have also been added. Organizationally, the LRC is structured to provide library/media resources and services to a diverse clientele on campus, in the community, and at distant sites.

The LRC is a comprehensive Learning Resources Center/Library, embracing both print and media resources under one roof. The mission statement, goals, and objectives of the LRC are consistent with those of the University. It is the repository of knowledge and gateway to information. Therefore, it is the *hub* and *heart* of all educational activities at Alabama A&M University. It is charged with the responsibility for supporting all academically oriented facets and entities of the University by providing a wide range of information in all disciplines and in a variety of formats. It provides numerous and diverse resources, programs, services, and collections in support of the University's mission of providing quality professional preparation, research, and public service in pursuit of academic excellence.

### Hours of Operation

The Learning Resources Center is open 7 days a week, for a total of 78 hours. The hours of operation for the LRC during the regular semester are as follows:

Monday-Thursday	8:00 A.M. - 10:00 P.M.
Friday	8:00 A.M. - 5:00 P.M.
Saturday	10:00 A.M. - 2:00 P.M.
Sunday	2:00 P.M. - 10:00 P.M.

The hours of operation during the summer semester are as follows:

Monday-Thursday	7:30 A.M. - 9:00 P.M.
Friday	7:30 A.M. - 5:00 P.M.
Saturday	10:00 A.M. - 2:00 P.M.
Sunday	1:00 P.M. - 9:00 P.M.

**NOTE: The Computer Lab, Multipurpose/Distance Learning Auditorium, and Streaming Lab close 30 minutes prior to the hour of closing. The Circulation Desks (on both floors) close for check out of resources 15 minutes prior to closing.**

Professional librarians and other knowledgeable and courteous personnel are available to assist patrons during all hours of operation. In order to facilitate accessibility to services and collections, LRC personnel place resources that are in high demand on reserve. Additionally, orientation programs for individuals and groups which teach the use of services and collections are provided by qualified LRC personnel. Orientation tutorials are being prepared which can be assessed via the LRC's Web Page.

### **Collections**

The LRC offers an in-depth selection of holdings related to educational research and public service programs of Alabama A&M University. The careful selection and acquisition of books and other materials reflect the educational and cultural activities of the University which are basic to the development and maintenance of an effective library program. Systematic and schematic methods are followed to ensure the proper development of both qualitative and quantitative collections.

The LRC supports all facets and entities of the University and makes concerted efforts to effectively provide those resources, both print and media, which supports all academic disciplines offered by the University and is attentive to its long-range curriculum development plans as well as its cultural diversity. The LRC participates in the educational programs of the University by evaluating needs, acquiring and assisting in the proper utilization of library and media resources needed by students, faculty, staff, administration, the Huntsville/Madison County community, and patrons at distant locations. The collection is organized with an open stacks arrangement for print materials and online accessibility to all other materials.

The collection currently includes over 400,000 volumes (print, microform materials, and media) supporting the University programs of instruction, research, extension, and other public functions. Also provided are subscriptions to more than 1,800 journals, 60+ database subscriptions, and over 90 newspaper subscriptions in all formats.

### **Special Collections**

Special Collections materials provide additional access to research information. Currently, five special collections are maintained by the LRC: the Black Collection, the Children's Collection, the International Collection, the Archival and Historical Collection, and the Curriculum/Textbook Collection.

The LRC maintains a carefully selected, quality collection of books, journals, archival materials, and media resources to support the research needs of faculty, staff, and students in all disciplines. A compilation of information relative to resources and services available at the LRC is obtainable through the *LRC Fast Facts*, the official, periodic publication of the LRC. This publication is designed to provide basic information about the LRC for faculty, staff, students, and other patrons of Alabama A&M University. In addition, electronic resources complement the traditional print materials collection, providing research capabilities from other college campuses through the Online Public Access Catalog (OPAC).

## Circulation of Resources/Fine System

Materials held by the LRC are circulated to the University community according to rules which ensure the widest access to information. A fine system is enforced to ensure all patrons maximum access to learning resources. Repeated, flagrant violations will be considered cause for the suspension of borrowing privileges.

All books taken from the LRC must be properly checked out at the Circulation Desk. Students must present a current, validated ID Card, inclusive of the LRC barcode, when checking out resources. Undergraduate students may check out a maximum of ten (10) books at a time for a one-month (30 days) loan period. Graduate students may also check out a maximum of ten (10) books at a time for a three-month (90 days) loan period. All books must be returned at the end of the semester. If not returned, the books will automatically be declared lost and a bill for the cost of the book(s), the processing fee, and the fine will be submitted to Financial Services (Business Office) for collection from the borrower.

Fines will be assessed at fifty cents (\$0.50) per day per book up to a maximum of \$15.00. After the accumulation of a \$15.00 fine (30 days), the book will be declared lost. At that time, patrons will be charged the cost of the book, a \$20.00 processing fee, plus the maximum \$15.00 fine for each lost book. The cost of the book(s) will be repaid to the patron if the book(s) is found and returned to the LRC. However, the processing fee and fine are non-refundable and must be paid. If a book checked out is returned directly to the shelf without being properly desensitized at the Circulation Desk, the patron is responsible for the amount of fine accumulated from the date due until found or the maximum fine of \$15.00.

A book depository, located near the front door of the facility, is available for the return of books when the LRC is closed.

Reference books are located on open shelves on the Main (2<sup>nd</sup>) Floor. Reference books do not circulate as a general policy; however, they can be checked out for use with classroom presentations. These books may be checked out 15 minutes prior to the beginning of the class and returned immediately after the end of the class period. A fine of seventy-five cents (\$0.75) per day per item is charged for overdue reference materials. **Reserve materials accrue fines when removed from the LRC. The first hour is seventy-five cents (\$0.75) and fifty cents (\$0.50) each additional hour.**

Periodicals and newspapers are not loaned for use outside the LRC. Bound volumes of periodicals are located on open shelves on the Main (2<sup>nd</sup>) Floor in Serials. Current issues of periodicals may also be obtained in Serials for use within the facility.

Media materials (records, audio and video tapes, CDs, etc.), along with the accompanying equipment, are located on the First Floor in Information Technology Services and are available for use in the LRC during normal hours of operation. These items may also be checked out with a current validated ID Card for a loan period of one (1) week (7 days). Overdue fines will be assessed at the rate of \$2.00 per day per item for a maximum accumulated fine of \$28.00, in addition to a \$20.00 processing fee. Items will be declared lost after a two-week period if they have not been returned. At that time, a fine of \$28.00, in addition to the cost of the item, plus the \$20.00 processing fee will be reported to Financial Services for collection.

## Renewals/Recalls

All books in the circulating collections may be borrowed for a one-month period. Books may be renewed for an additional month providing there is no "hold" request for them. Alabama A&M students with a current validated ID Card with barcode may check out a maximum of 10 books at a time. Students should be sure that they understand the rules and regulations regarding the return and use of LRC resources prior to checking them out.

**Book loans must be renewed in person. Telephone renewals will not be accepted. All circulating books can continue to be renewed up to a maximum of three (3) consecutive renewals unless a “recall” or “hold” has been placed on them. However, overdue books cannot be renewed until all fines have been paid.**

Recalls can only be requested by graduate students, faculty, and staff members. Recalled books are due ten (10) days after the recall notice is sent. A seventy-five cents (\$0.75) per item per day fine will be assessed for books not returned after the ten (10) day grace period. No recalls will be requested until the patron has had the book checked out for a minimum of thirty (30) days. Patrons will be notified when recalled books have been returned. These books will be held at the Circulation Desk for ten (10) days, after which they will be returned to the stacks if not claimed.

### **Reserve Materials**

Reserve materials are those books, articles, etc., which have been placed on reserve in the LRC by faculty members for student use in the LRC. A current validated ID Card is required to receive reserve materials. Reserve materials are located at the Circulation Desk.

### **Theft and Mutilation**

The theft and/or mutilation of LRC resources are offenses that will be reported to the Vice President for Student Affairs for appropriate action. The fine assessed for the mutilation of resources is \$25.00 per item in addition to the cost of the item. Thirty (30) hours of service performed in the LRC is also required (calculated at the minimum wage of \$5.15 per hour x 30 = \$154.50). However, students may opt to pay the \$25.00, cost of item(s), plus the \$154.50 in lieu of performing the 30 hours of service.

### **LRC Instruction**

The LRC offers a wide range of instructional programs designed to introduce users to general and specific aspects of library use. Formal orientation to the LRC's facilities, services, and collections is offered several times at the beginning of each semester, both for classes and for individuals. Instructional services include presentations tailored to specific classes on how to use library materials, how to develop information research strategies, and how to conduct Internet database searches. Methods of instruction include one-on-one instruction, generic group presentations, and customized class instruction via lectures, hands-on demonstrations, and online tutorials assessed via the LRC's Web page (accessible in the near future). General handouts, flyers on specific subjects or tools, brief topical bibliographies, maps, instruction on call numbers and subject classifications, and descriptions of services are also available. The public services librarians routinely work with teaching faculty to assist in effective use of resource materials and to plan instructional sessions most appropriate for their classes. The LRC also offers, under the auspices of the School of Education, a formal one-hour elective course, EDU 104 Bibliographic Instruction, which focuses on accessing and utilizing LRC resources and services. Any patron, upon entering the library, can be assisted by a staff member and/or a librarian with information retrieval. The patron can be quickly instructed in the use of the online catalog for searching by subject, author, or title.

### **Reference Assistance**

The Reference Department is conveniently located on the second floor. Library staff provides point-of-use instruction, personal assistance in conducting library research, and traditional reference assistance, including a telephone reference service and twenty-four hour reference assistance via electronic mail. Reference assistance has now expanded into nontraditional areas to support computer-based services. An icon on the LRC's Web page allows remote patrons to submit reference questions electronically, during any hour of the day/week, and receive answers online. The LRC maintains a file of such queries and their responses.

Personnel also offer staff-assisted searches of online databases for users who wish to have their searches conducted by a professional. Although users can perform their own searches of electronic databases at no charge, reference assistance is also available for those who need it. Currently, students are provided the opportunity to interact with professional librarians via e-mail communication. A compelling next step in reference services is client-centered outreach, in which Reference Librarians go out to departments to work one-on-one with users in their academic environments.

## **Acquisitions & Cataloging**

Acquisitions serves as a clearinghouse for the selection, processing, and ordering of retrospective as well as current materials (print and media resources) which are deemed necessary to support the undergraduate and graduate curriculum offerings of the University and to secure needed items/materials for LRC operations as quickly and inexpensively as possible within budgetary constraints.

The LRC's collection is cataloged using the Dewey Decimal Classification System and the subject heading system developed by the Library of Congress Classification Scheme. The LRC also publishes catalogs in special subject areas, such as audiovisual materials held in Information Technology Services. Catalog records of the music, compact discs, and VHS tapes are currently being added to OPAC by Cataloging Services. Lists of recent acquisitions are automatically generated using the newest version of the online catalog system. Records of information sources not held by the LRC are available through standard indexes and bibliographies in the Reference Area. These tools, whether in print or CD-ROM format, give information on sources and their locations. Network access to CD-ROM indexes will soon distribute access to these sources.

## **Information Technology Services**

The J. F. Drake Memorial Learning Resources Center embraces emerging technologies that enhance the provision of resources and services. Online Public Access Catalog (OPAC) terminals are strategically located throughout the LRC to provide the Alabama A&M University populace with needed research access.

The LRC offers use of a state-of-the-art Computer Laboratory with 50 workstations, a fully interactive Multipurpose/Distance Learning Auditorium with state-of-the-art resources, three classrooms, a Streaming Lab with 30 workstations, audiovisual editing equipment, a professional banner maker, laminator, printers, and photocopiers on each floor, along with equipment for both individual and group use inclusive of multimedia presentations of course related material, interactive videoconferences, and teleconferences.

## **Serials**

The Serials Area, located on the Main (2<sup>nd</sup>) Floor, houses current serial titles, newspapers, and microforms. The LRC currently has subscriptions to more than 1,800 titles. Periodicals are non-circulating and must remain in the confines of Serials. However, for convenience purposes, photocopy machines and microform reader/printers are available for duplicating materials.

## **Interlibrary Loans**

The LRC provides customary interlibrary loan services to students, faculty, and staff for needed resources not owned by the LRC. The LRC has cooperative direct loan agreements with the University of Alabama in Huntsville, Redstone Scientific Information Center, Athens State University, John C. Calhoun Community College, J. F. Drake State Technical College, and Oakwood College. The LRC is also a participating member of NAAL (Network of Alabama Academic Libraries), which is comprised of libraries from all senior colleges and universities in Alabama.

### **Notification/Responsibility**

Communications to students regarding fines, overdues and recalls are sent to the address provided by the Office of the Registrar. Overdue and fine notices are sent as a **courtesy reminder**. Failure to receive a notice does not absolve the borrower from responsibility to return materials or to pay overdue fines.

Patrons are responsible for all transactions charged with their ID Cards. Lost ID Cards must be reported to Circulation as soon as possible.

### **Replacement of ID Cards**

The replacement fee for lost ID Cards is \$25.00 for off campus students and \$50.00 for on campus students. ID Cards can be obtained from the Debit Card Office, Room 122, Patton Hall.

### **Gifts**

Gifts of library resources, money, artifacts or memorabilia are accepted provided there are no restrictions attached. The LRC must be free to dispose of any materials not needed by sale, exchange, discard, or donation; however, when considered desirable, the LRC may, at its discretion, maintain a gift collection of library resources as a separate entity.

### **Book Detection System**

The LRC maintains two 3M Book Detection Systems: one on the Main (2<sup>nd</sup>) Floor and one on the First Floor to aid in the prevention of unauthorized removal of LRC resources. Persons are electronically surveyed as they exit the LRC and an alarm will sound if they are in possession of materials which have not been properly checked out. Persons attempting to deliberately remove LRC resources without proper authorization will be reported to the Vice President for Student Affairs.

### **Other**

As discussed earlier, the LRC's main goal is to integrate access to information systems and provide users with a common and easy-to-use gateway to a wealth of Web-based, vendor-based, and locally based resources. Much work will be done in the next few years to realize this goal completely and enable the LRC to truly become a "smart" library in all facets of operation.

### **Patron Access**

Twenty-four-hour access to the J. F. Drake Learning Resources Center's (LRC) holdings, library catalogs, and online resources is available online from on-campus locations such as the dormitories, offices, and computer centers at <http://www.aamu.edu/lrc/welcome.html>. Off-campus electronic access is possible only from the Normal Hills Apartments. The LRC is open upwards to 78 hours per week, and reference and circulation services are provided during all open hours.

All Alabama A&M University students, faculty, and staff have full web access to licensed databases, electronic journals and books, research guides, and other online resources. In addition to consortial agreements with SOLINET, the University of Alabama in Huntsville, Athens State University, John C. Calhoun Community College, Oakwood College, Redstone Scientific Information Center, and J. F. Drake State Technical College to provide access to and delivery of resources not currently owned by the Learning Resources Center, immediate online access to research databases, electronic books and journals is provided via the Horizon library network system. While the number of such resources is expected to constantly increase, electronic access to resources currently available to the Alabama A&M University LRC users is as follows:

Electronic databases:	169	
Electronic journals (listed by subject)		Over 75,000
Online catalogs:		6
Alabama State University		<a href="http://www.http.alasu.edu/hornet.htm">www.http.alasu.edu/hornet.htm</a>
Auburn University		<a href="http://aubjecat.auburedu">http://aubjecat.auburedu</a>
Huntington College		<a href="http://library.huntington.edu">http://library.huntington.edu</a>
Huntsville-Madison Co. Public Library		<a href="http://www.hpl.lib.al.us">www.hpl.lib.al.us</a>
Jacksonville State University		<a href="http://library.jsu.edu">http://library.jsu.edu</a>
Alabama Virtual Library		<a href="http://www.avl.lib.al.us">http://www.avl.lib.al.us</a>

Additionally, electronic resources provided by the Network of Alabama Academic Libraries (NAAL) complement the traditional print collections, providing research capability from other college campuses via the Online Public Access Catalog (OPAC). User privileges and access to electronic resources at Alabama A&M University may be judged adequate because the majority of library collections are indexed in the library online catalog (“Horizon”). Terminals, strategically located throughout the LRC, provide users instant access. Respondents to recent LRC self-study surveys (81.1% of faculty; 61.1% of undergraduate students, and 56.4% of graduate students) were “satisfied” or “very satisfied” with accessibility to electronic resources collections.

### Student Participation

Students are encouraged to be actively involved in the LRC’s various programs through participation in a wide range of activities. For example, an annual letter invites student leaders and members of the Student Government Association, International Students Association, and other student organizations to meet with the LRC Director to discuss any problems or concerns they might have regarding LRC services and resources. The Director maintains an open door policy so that students, as well as faculty and any other interested patrons, can meet to discuss issues relating to any aspect of LRC services, resources, or programs.

Each fall, the LRC Director invites officers of all campus student organizations to an informal reception as a means of providing an open platform where problems and concerns can be addressed and public relations efforts can be enhanced. Furthermore, students are routinely invited to serve on the University Library Services Committee as well as become members of the newly reactivated Friends of the Library/LRC organization. Suggestion boxes are provided in various locations throughout the LRC to solicit user input for improving services, programs, and resources.

### Location of Services

- ***First Floor:*** Located on the first floor is Information Technology Services where you will find a new Multipurpose/Distance Learning Auditorium, three media classrooms, a Computer Lab, equipment room, a Streaming Lab, a conference room, and offices. Also located on this floor are a student lounge, a faculty/staff lounge, patron lockers, Technical Services offices including cataloging, acquisitions, collections development, a books on approval room, stacks area, storage, and shipping and receiving.
- ***Second Floor:*** Improvements and additions include an International Room, large and small study rooms for individuals and/or groups, stacks areas, Government Documents, Reference Desk/Offices, Circulation Desk/Offices, periodicals, a conference room, books on reserve, patron lockers, Administrative Services Offices, Serials Office, and an ESL (English as a Second Language) Lab.
- ***Third Floor:*** Archival and Historical Collections (Archives), in addition to the main collection, study rooms, a Faculty Reading Room, and several large storage areas are located on this floor.

## Where To Go

1. AV resources/equipment loans.....Circulation Desk, Information Technology, First Floor
2. Bibliographic Instruction (formal course)..... Director's Office, Main (2<sup>nd</sup>) Floor
3. Reference assistance.....Circulation Desk, Reference, Main (2<sup>nd</sup>) Floor
4. Computer Lab.....Information Technology, First Floor
5. Classrooms.....First Floor
6. Government Documents.....Main (2<sup>nd</sup>) Floor
7. Banners/posters/lamination/binding.....Circulation Desk, Information Technology, First Floor
8. Library automation workshops.....Circulation Desk, Information Technology, First Floor
9. Microform readers/printers.....Serials, Main (2<sup>nd</sup>) Floor
10. Online Public Access Catalogs (OPACs) .....All Floors
11. Payment of fines/clearance from the University.....Circulation Desk, Main (2<sup>nd</sup>) Floor
12. Periodicals/journals/newspapers.....Serials, Main (2<sup>nd</sup>) Floor
13. Photocopiers.....All Floors
14. Reserve materials.....Circulation Desk, Main (2<sup>nd</sup>) Floor
15. Status of book order requests.....Acquisitions Office, First Floor
16. University Yearbooks/historical information.....University Archives, Third Floor
17. Multipurpose/Distance Learning Auditorium.....Information Technology, First Floor
18. Streaming Lab.....Information Technology, First Floor
19. Student Lounge.....First Floor
20. Lockers.....Administrative Services, Main (2<sup>nd</sup>) Floor
21. Library orientation/tours.....Reference Desk, Main (2<sup>nd</sup>) Floor
22. Public restrooms.....All Floors
23. Public telephones.....First Floor Lobby
24. International Room.....Main (2<sup>nd</sup>) Floor
25. Other inquiries/services.....Director's Office, Main (2<sup>nd</sup>) Floor
26. ESL Lab.....Main (2<sup>nd</sup>) Floor



## INTERNATIONAL PROGRAMS

104 Carver Complex, Bonner Wing  
(256) 372-5418

AAMU has had a long history of international involvement, especially in the training of international students, many of whom come from the less developed countries of the world. In incorporating an international dimension to its traditional programs of teaching, research, and public service and in keeping with its mission and goals, part of which is to provide and/or extend education services to the wider community, AAMU is guided by a recognition of the interdependence among people and countries throughout the world. It also recognizes its historical background and experience in working with and assisting people of limited resources as being uniquely suited for responding to the development needs of Third World countries.

AAMU formalized its involvement in international education and development activities by establishing an Office of International Programs (OIP) in 1978. In doing so, it committed itself to mobilize its resources towards the internationalization of AAMU's programs and activities. It further committed itself to the strengthening of its capacity and capabilities to respond to the needs of the state of Alabama, the U.S. government, and other international development agencies for technical and training expertise as may be needed by less-developed countries. AAMU believes that by its involvement in international programs and activities, it will acquire new knowledge, broaden the outlook of its community and above all, establish a better understanding and friendship between the U.S. and the people of other countries.

AAMU fully endorses the nine "Basic Principles of College and University Involvement in International Development Activities" as approved by the National Association of State Universities and Land-Grant Colleges (NASULAGC). Pursuant to these principles, AAMU has developed and adopted policies and procedures governing its effective participation in international development and programs. They serve as guidepost of flexibility for faculty and staff involvement in international programs.

There are three major thrusts of AAMU's International Programs.

- **Developmental Assistance.** Under this thrust, AAMU plays a major role in delivering technical assistance to developing or under-developed countries of the world through work with the U.S. Agency for International Development (USAID) and other international donor agencies in agriculture and rural development, human nutrition and environmental issues, and institution building in many countries of sub-Saharan Africa, the Caribbean, Central America, and Southeast Asia.
- **Human Resources Development.** In keeping with AAMU's mission of providing educational opportunities to the wider community, AAMU strives to attract international students and to assist the USAID and other international agencies in fulfilling their training program needs by providing a suitable learning environment for the many sponsored students who are sent to AAMU by these agencies. Through the Office of International Programs, which serves as the participant contact and management office for AAMU's international programs, appropriate and necessary special services are provided to facilitate and to ensure a rapid and effective completion of participants' training objectives. Each such exchange J-1 student or participant is charged an administrative/management fee of \$250 per semester and \$150 per summer session.
- **Internationalization of University's Programs.** This thrust embodies the internationalization of curriculum program development, and offerings of international minors and majors in various academic program areas; student and faculty exchange programs on domestic and international levels; establishment of collaborative linkage relationships with universities, other institutions and research centers for academic and scientific exchanges; and study abroad programs for language and intercultural training for students and faculty. AAMU participates in visitor exchange programs, including the Fulbright-Hays Programs of the U.S. Information Agency (USIA).

In pursuance of these programs and activities, AAMU has established formal linkages with many universities and research centers in many countries in Africa, including the University of Ouagadougou, Burkina Faso; Ministry of Higher Education, Computer Services and Scientific Research, and the Institute of Agronomic

Research, Cameroon; University of Cocody, Cote d'Ivoire; Alemaya University of Agriculture, Ethiopia; Ministry of Agriculture and the Food Research Institute, Ghana; the University of Liberia, Liberia; National Institute of Agronomic Research, Niger; Obafemi Awolowo University and Federal University of Technology, Owerri, Nigeria; Ministry of Agriculture and Natural Resources, Sierra Leone; and the Food Research Institute, Sudan. In the Caribbean, linkages exist between AAMU and the University of the Virgin Islands, Virgin Islands, the Caribbean Agricultural Research and Development Institute, the University of the West Indies, Trinidad, and the Food Research Institute, Jamaica. In Eastern Europe, collaborative linkages exist between AAMU and St. Petersburg State Agrarian University, Main Botanical Gardens, Russian Academy of Sciences, Russia, the Simferopol State University, and the Cherkassy Institute of Business Management, Ukraine. These linkages provide opportunities for study abroad, exchanges, collaborative research, and programs for students and faculty at AAMU.

AAMU participates in the National Security Education Program (NSEP) which provides scholarships for undergraduate students to pursue academic studies overseas for one semester or a year and fellowships for graduate students for a period ranging from one semester up to two years.

Alabama A&M University is a member of the National Student Exchange (NSE). Under this system, an AAMU student can attend another NSE-member institution while registered at an AAMU, to take courses for one semester or a year for the same amount of tuition and fees paid at AAMU. Courses taken at a host campus are fully transferable, with grades applicable towards the student's graduation requirements at AAMU. Costs for housing arrangements should be checked with the host school prior to enrollment, as these may need to be paid separately by the student.

For additional information on any aspect of the programs and activities described in this section, the Office of International Programs should be contacted.

### **STUDENT HEALTH SERVICES**

1003 Buchanan Way  
(256) 372-5600

Alabama A&M University's Student Health Services (SHS), located in the little white building across from Morris Hall Dormitory, serves to protect and maintain the health of all currently enrolled students. Limited medical services are provided at no cost. Should tests, x-rays, and other services beyond the scope of the Center be recommended, the Student Health staff will assist students with a referral and insurance billing. Any ongoing medical condition such as, but not limited to, diabetes, hypertension, epilepsy or migraine is the responsibility of the student's primary care physician (PCP). SHS will monitor the student's health in collaboration with the PCP.

SHS is staffed by a physician, medical secretary, nurses and a nurse practitioner. The Center's hours of operation are 8:00 a.m. to 5:00 p.m. Monday - Friday. Any student needing medical attention should report to SHS during its hours of operation. In the event of an emergency, the student should go directly to a local emergency room. Family members of students, faculty, and staff are not eligible for treatment in SHS.

### **DEPARTMENT OF PUBLIC SAFETY**

Public Safety Building  
(256) 372-5555

The Department of Public Safety coordinates a campus-wide program to insure the safety and welfare of the faculty, staff and students at AAMU, to protect the physical property of AAMU, and to regulate the orderly movement of vehicles on the streets and the parking of these vehicles in parking lots on campus. In addition, the unit works cooperatively with other law enforcement agencies in the community to investigate violations of campus regulations and policies and state laws. The department provides security and law enforcement on campus.

## **WJAB FM RADIO STATION**

Room 202 Morrison Building  
(256) 372-5795

WJAB - FM is a professional, non-commercial radio station serving the interests of the citizens of Huntsville and surrounding areas. A mixture of various forms of jazz and blues dominate WJAB-FM's twenty-four hour, seven days a week format. Major support for the operation of the station comes from the licensee, AAMU. Additional funds are provided by our listeners, and the business community, as well as the Corporation for Public Broadcasting.

## **TELECOMMUNICATIONS AND DISTANCE LEARNING CENTER**

132 Morrison Building  
(256) 372-5793

The Telecommunications and Distance Learning Center will guide your project through the planning and production stages from idea to end product. The center produces video work of all types, including commercials, training videos and documentaries. We have extensive video production equipment on hand and can do high quality taping, editing and graphic effects. Our staff will work with you to create a comprehensive package and can provide you with everything from creative planning and scriptwriting to original music score and talent. With over 30 years of experience in the graphics industry trust us to get it done right and on time. The center works with large scale, local and national corporations, as well as non-profit groups and small businesses. We can design a package that fits within your budget.

### **Videography**

We are dedicated to maintaining state-of-the-art equipment. This helps us provide you with the highest quality video services needed. Our video cameras include VHS, S-VHS, and ¾ SP, as well as a full array of lighting and grip equipment that allows us to adapt to any shooting condition.

### **Studio Facilities**

The center has one studio, telemeeting room and closed circuit room. The production studio is 40X60. It includes three CCD cameras, a controlled lighting system, and audience monitoring.

### **Closed Circuit Classroom Instruction**

The campus cable system delivers instructional programming to campus classrooms, dormitories and meeting rooms.

### **Editing Facilities**

We have three edit suites and provide digital as well as a full analog "Interformat" edit suite. It includes digital cameras, ¾ tape in SVHS Formats, Panasonic WJ-MX50 switcher, club 200 studio master audio mixer, Sony FXE-100 video editing system, Sony 440 editing controller and laird telemedia 1500 character generator.

### **Teleconferencing Room**

Whether originating or receiving classes from on campus or around the state, AAMU Telecommunications Center premiere Distance Learning classroom stand ready. As the Center operators take care of the technical details, educators can make use of an in front camera, computer interface and video tape roll-ins. This room is also available for other uses such as telemeetings.

## Master Control Room

The master control room is fully equipped to enable creation of high quality television production for live transmission or videotape studio cameras, videotape machines and live satellite video feeds can be switched into a program. We have the capability of making 6VHS copies at once, make masters or dubs originating from ¾ inch and S-VHS machines. We also have satellite dishes that can record programming from all over the world.

## CAREER DEVELOPMENT SERVICES

101 Patton Hall  
(256) 372-5690

Career Development Services is a centralized office with a mission to assist students and alumni in crystallizing career objectives and preparing for employment opportunities by providing career planning services which will enable students to move confidently from the academic environment to the world of work.

In support of this mission, the office strives to meet the following six objectives:

- To assist and prepare students to implement effective job search strategies.
- To provide employment counseling to students and alumni.
- To provide opportunities for experiential learning which allow students to practice classroom theory in a working environment.
- To assist students in choosing and preparing for careers.
- To provide opportunities for participation in on-campus recruitment and interviews with local, state and national employers.
- To provide current data relative to employment trends which support academic preparation.

Some of the services provided by Career Development Services are as follows:

- On-campus interviews for sophomores, juniors, seniors, graduate students, and alumni with local, state, and national employers.
- Annual mini workshops and individual counseling sessions for seniors, alumni, and co-op/internship applicants on resume and cover letter writing, interviewing skills, and job search strategies.
- Job listing services which provide current information about specific employment opportunities.
- Listings of part-time and summer employment for off-campus jobs.
- Classroom presentations on employment trends, resume writing, job search techniques, and career planning.
- Cooperative Education (undergraduate/graduate) and summer internships.
- CDS Career Resource Library. Resources include company binders, videotapes, books, CD's, and journals.
- Credential services for teacher education candidates.
- Annual career programs: Career Fair/Interview Day (October), Graduate and Professional Schools Day (October), North Alabama Connection Professional Employment Day (February), Co-op Day (March), Youth Motivation Task Force (April), and Teacher Education Day (May).
- Job Referral Service
- CDS 301: Career Development Seminar, a one hour credit course.
- Business Etiquette dinners sponsored by Aramark Food Services.

Students are strongly encouraged to register with the office as early as the second semester of their freshman year.

## Cooperative Education Program

Cooperative Education is a unique plan of educational enrichment. It is designed to make a student's educational program more relevant and meaningful by integrating formal academic study with special periods of practical work experience directly related to the individual's major field. The programs are generally diversified in

order to provide a broad range of involvement within each chosen area of interest. The work experiences usually increase in difficulty and responsibility as the student progresses through the academic curriculum.

The program is called *cooperative education* because it involves a cooperative effort between the employer and the University in combining their resources to form an educational system for career preparation and training. The University teaches basic facts, theories, and principles; the employer provides the opportunity for a student to apply these facts, theories, and principles to practical work situations and problems – a win/win combination.

Visit the CDS website at [www.aamu.edu/cds](http://www.aamu.edu/cds).

### **OFFICE OF VETERAN AFFAIRS**

202 Ralph Lee Student Center  
(256) 372-5805

The Office for Veteran Affairs serves as a resource center and an advocate for veterans. General information, counseling and professional referrals are available for veterans. The Office for Veteran Affairs works closely with the U.S. Veteran's Administration Office in the disbursement and coordination of appropriate documents and benefits.

### **STUDENT GOVERNMENT ASSOCIATION**

204 Ralph Lee Student Center  
(256) 372-5619

The Student Government Association (SGA), to which all undergraduate students belong, is the major undergraduate governmental body. It is funded, in part, by the student activity fee. The SGA hears appeals for financial assistance for organizations to attend workshops/conferences, acts as a liaison between AAMU and the students, and promotes educational and social programs for students.

## **SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES**

Dr. James W. Shuford, Dean  
[jshuford@aamu.edu](mailto:jshuford@aamu.edu)  
300, James I. Dawson Building  
(256) 372-5783

### **MISSION STATEMENT**

The School of Agricultural and Environmental Sciences operates in the traditional land-grant concept with instructional, research, and outreach programs. The school aims to provide a dynamic education for capable individuals who have the determination to prepare for a career in agriculture, environmental science, forestry, family and consumer sciences, urban planning, and related scientific areas.

The mission is accomplished by applying scientific knowledge and basic skills of specific instructional programs. Students prepare for rewarding careers through the following modes: 1) Pursuit of courses in the general education curriculum of the University that provide desirable broad educational experiences for all students; 2) Development of a fundamental understanding of the basic principles of the physical, biological, and social sciences, as well as the humanities as applied to agriculture, environmental science, family and consumer sciences, forestry, urban planning, and related areas; and, 3) Mastery of technical knowledge, basic skills, and their application as required for proficiency in their chosen areas of specialization.

### **ORGANIZATION**

The School of Agricultural and Environmental Sciences is organized into five academic departments, each headed by a department chairperson. The departments are Agribusiness; Community Planning and Urban Studies; Family and Consumer Sciences; Food and Animal Sciences; and Plant and Soil Science. The school also operates a very active food and agricultural research program, and experiment station facilities which are available for use by faculty and students in the various academic departments.

### **PROGRAM OFFERINGS**

Students may pursue a Bachelor of Science degree in the following areas: Agricultural Science, Animal Science, Environmental Science, Family and Consumer Sciences, Food Science and Technology, Forestry, Plant Science, and Urban Planning. Within the various degree programs, majors are offered in Agricultural Economics, Agribusiness Management, Agriscience Education, Apparel, Merchandising and Design, (Fashion Design, Fashion Merchandising), Crop Science, Nutrition and Hospitality Management (General Dietetics, Hospitality Management), Family and Consumer Sciences Education, Forest Science, Forest Management, Horticulture, Human Development and Family Studies, and Soil Science.

The School of Agricultural and Environmental Sciences also offers Master of Science degree programs in Agribusiness, Family and Consumer Sciences, Food Science, Plant and Soil Science, and Urban and Regional Planning; and Agriscience Education and Family and Consumer Sciences Education (cooperatively with the School of Education). Doctoral programs are offered in Food Science, and Plant and Soil Science. For information about graduate programs in the School of Agricultural and Environmental Sciences, please consult the University's graduate bulletin.

### **FINANCIAL AID**

Students pursuing degrees in agriculture, environmental science, forestry, family and consumer sciences, urban planning and related areas are provided opportunities to participate in work-study programs in the academic departments and in the research and extension/outreach programs in the school. Scholarships and cooperative educational opportunities with industries, organizations, and governmental agencies are also available for qualified

students in agriculture, family and consumer sciences, forestry, environmental science, urban planning, and related program areas.

## **REQUIREMENTS FOR GRADUATION**

Candidates for Bachelor of Science degrees must successfully complete the academic programs as outlined in the various curricula of the School of Agricultural and Environmental Sciences, with a minimum cumulative grade point average of 2.0. Candidates must also complete all core courses in the major with a grade of “C” or better, and other special requirements established by the various academic programs in the school.

Fundamental principles in the basic sciences and humanities are particularly emphasized during the freshman and sophomore years to acquaint students with some of the basic knowledge that should be mastered before they attempt to concentrate upon major fields of interest.

**DEPARTMENT OF AGRIBUSINESS**

316 Dawson Building  
(256) 372-5410

**INTRODUCTION**

The Department of Agribusiness offers a B.S. degree program in Agricultural Science with majors in Agricultural Economics, Agribusiness Management, Agriscience and Agriscience Education. The department also offers the M.S. degree in Agribusiness and a cooperative master's degree program in Agriscience Education with the School of Education.

**MAJOR PROGRAM OFFERINGS**

The Agriscience Education major is designed to meet the requirements for the Class "B" Secondary Professional Certificate that qualifies graduates to teach Agriscience in public schools. Specific requirements for admission into the Agriscience teacher education major are listed under the secondary education section of the bulletin. Agriscience Education students are required to complete twelve weeks of directed teaching at an off campus approved teaching site.

The Agriscience major prepares students for careers in private and public agricultural service agencies or self-employment, as well as graduate studies. The program is designed to provide a broad-based multidisciplinary education in agricultural related sciences and is also flexible enough to meet the individual needs of each student.

The Agricultural Economics major provides opportunities for students to acquire knowledge and develop skills that will enable them to determine the optimum allocation of resources within agriculture and between agriculture and the rest of the economy. This program prepares students for employment in the public sector as well as in the private sector with firms engaged in agricultural marketing, research, commodity marketing, and financial services as well as agricultural cooperatives. Students majoring in this area have the option of completing an internship with an approved establishment. Many of the graduates continue their education by pursuing advanced degrees in the field.

The Agribusiness Management major is designed for students who wish to pursue agricultural business and related careers with business and government. It broad-based course offerings meet the needs of those seeking employment as well as those going on to graduate studies in this field. Emphasis is on the application of business and management principles in the agriculture sector. Students electing this major are required to complete an internship assignment at an off campus agribusiness firm or government agency under the supervision of a faculty advisor.

**FINANCIAL ASSISTANCE/OFFERINGS**

In addition to that provided by the federal and state governments, and AAMU institutional aid programs, the School of Agricultural and Environmental Sciences and Department of Agribusiness offers financial assistance and scholarship awards. Students may also qualify for the Nimrod Cobb, Cargill and Alfa-Alabama Farm Federation scholarships.



## STUDENT/PROFESSIONAL ORGANIZATIONS

Agribusiness Club  
Alpha Zeta Honorary Society  
Collegiate FFA  
Minorities in Agriculture, Natural Resources, and Related Sciences (MANNRS)

## GRADUATION/PROGRAM REQUIREMENTS

In order to graduate with a B.S. degree in Agricultural Science or Agricultural Economics, a student must: officially declare one of the above referenced programs as a major and complete all courses as outlined in the curriculum with a minimum cumulative grade point average of 2.0. Candidates must also complete all core courses in the major with a grade of “C” or better in each course. Students enrolled in the Agriscience Education curriculum must complete all of the School of Education Teacher Certification requirements.

### AGRICULTURAL SCIENCES AGRISCIENCE EDUCATION

128 Credit Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 *Composition II	3
ENG 101 *Composition I	3	PHY 101 Physical Science I	3
MTH 112 Pre-Calculus Algebra	3	PHY 101L Physical Science I Lab	1
BIO 101 General Biology I	3	HIS 101 World History	3
BIO 101L General Biology Lab I	1	AGB 102 Careers in Agriculture	1
AGB 199 Computers in Agriculture	3	ART 101 Art Appreciation <b>or</b>	3
HED/MSC/PED	<u>1</u>	MUS 101 Music Appreciation	(3)
	14-15	HED/MSC/PED	<u>1</u>
			15

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 Humanities I OR	3	ENG 204 Humanities II OR	3
ENG 201 Survey of English Lit. <b>or</b>	(3)	ENG 202 Survey of English Lit. <b>or</b>	(3)
ENG 301 Survey of American Lit.	(3)	ENG 302 Survey of American Lit.	(3)
ENG 205 General Speech	3	PSY 201 General Psychology	3
HIS 203 Found. of Amer. Hist. & Govt.	3	ECO 232 Principles of Microeconomics	3
AGB 211 Metal Fabrication	3	AGB 212 Wood Technology	3
FAS 112 Intro. to Animal Science	3	SPS 101 Introduction to Plant Science	4
AGB 221 Introduction to Agric. Econ.	<u>3</u>	FED 200 Intro. to Teacher Education	<u>3</u>
	18		19

#### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FED 212 Human Growth & Develop.	3	SPE 201 Intro to Study of Except. Child	3
AGB 314 Small Structure Construction	3	SPS 323 Plant Mat. & Landscape Des.	3
SPS 251 Intro to Soil Science	4	AGB 301 Electrical Systems & Machines	3
SPS 281 Intro. to Forestry	3	AGB 311 Small Power Unit & Equip.	3
AGB 302 Organ. & Admin. of C/TE	<u>3</u>	PSY 403 Educational Psychology	3
	16	FED 300 Foundations of Education	<u>3</u>
			18

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

**Senior Year**

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
AGB 401 Methods of Teach. Agriscience	3		
FED 404 Tests & Measurements	3	EDU 402/495 Directed Teaching	12
SED 409 Reading in the Content Area	3		
AGB 405 Extension Methods	3		
AGB 421 Agribusiness Management	<u>3</u>		
	15		

\*ENG 103 and 104 may be taken by International Students.

**AGRICULTURAL SCIENCES**

**AGRISCIENCE**

129 Credit Hours

**Freshman year**

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
ORI 101 Survival Skills	1	AGB 102 Intro. to Careers in Agriculture	1
ENG 101 *Composition I	3	ENG 102 *Composition II	3
HIS 101 World History I	3	MTH 112 Pre-Calculus Algebra	3
HED 101 Personal & Comm. Health OR	2	PSY 201 General Psychology OR	3
FAS 101 Food & the Survival of Man OR	(2)	SOC 203 Intro. to Sociology	(3)
NHM 103 Nutrition Today	(2)	SPS 101 Intro. to Plant Science	3
AGB 199 Computers in Agriculture	3	SPS 101L Intro. to Plant Science Lab	<u>1</u>
MUS 101 Music Appreciation OR	3		14
ART 101 Art Appreciation	<u>(3)</u>		
	15		

**Sophomore Year**

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
AGB 299 Quantitative App. in Agribus.	3	AGB 221 Intro. to Agricultural Econ.	3
ENG 204 Humanities II	3	ENG 205 General Speech	3
ECO 231 Principles of Macroeconomics	3	ENG 203 Humanities I	3
CHE 121 Chemical Principles	3	SPS 251 Intro to Soil Science	4
CHE 121L Chemical Principles Lab	1	FAS 112 Introduction to Animal Science	3
ECO 232 Principles of Microeconomics	<u>3</u>	SPS 281 Intro. to Forestry	<u>3</u>
	16		19

**Junior Year**

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
SPS 323 Plant Mat. for Landscape Des.	3	SPS 310 Field Crop Production	3
SPS 351 Soil and Water Conservation	3	AGB 314 Small Structure Construction	3
FAS 325 Fund. of Poultry Science	3	AGB 322 Farm Management	3
AGB 300 Agribusiness Statistics	3	AGB 301 Electrical Systems	3
AGB 323 Agricultural Marketing	3	FAS 354 Beef Cattle Production	3
Electives (Advisor Approved)	<u>3</u>	ENG 304 Advanced Composition	<u>3</u>
	18		18

### Senior Year

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
AGB 422 Agricultural Financing	3	AGB 405 Extension Methods	3
ANS 356 Swine Production	3	AGB 421 Agribusiness Management	3
AGB 499 Research in Agribusiness	3	AGB 418 Agricultural Leadership	3
AGB 425 Agricultural Policy	3	Electives (advisor approved)	<u>5</u>
Electives (Advisor Approved)	<u>3</u>		14
	15		

\*ENG 103 and 104 may be taken by International Students.

## AGRICULTURAL ECONOMICS

128 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
ORI 101 Survival Skills	1	AGB 102 Intro. to Careers in Agriculture	1
ENG 101 *Composition I <b>or</b>	(3)	ENG 102 *Composition II <b>or</b>	3
ENG 103 Communication Skills 1	(3)	ENG 104 Communications Skills II	(3)
HIS 101 World History I	3	MTH 112 Pre-Calculus Algebra	(3)
HED 101 Personal & Comm. Health <b>or</b>	(2)	PSY 201 General Psychology <b>or</b>	(3)
FAS 101 Food & the Survival of Man <b>or</b>	(2)	SOC 203 Intro. to Sociology	(3)
NHM 103 Nutrition Today	(2)	SPS 101 Intro. to Plant Science	3
AGB 199 Computers in Agriculture	3	SPS 101L Intro. to Plant Science Lab	<u>1</u>
MUS 101 Music Appreciation <b>or</b>	(3)		14
ART 101 Art Appreciation	<u>(3)</u>		
	15		

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
AGB 221 Intro. to Agricultural Econ.	3	AGB 299 Quant. App. in Agribusiness	3
AGB 300 Agribusiness Statistics	3	MTH 120 Calculus and its Applications	3
ENG 203 Humanities I	3	ENG 204 Humanities II	3
ECO 232 Principles of Microeconomics	3	ECO 231 Principles of Macroeconomics	3
FAS 112 Intro. to Animal Science	3	SPS 251 Intro. to Soil Science	3
ENG 205 General Speech	<u>3</u>	SPS 251L Intro. to Soil Science	<u>1</u>
	18		16

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
AGB 323 Agricultural Marketing	3	AGB 322 Farm Management	3
BUS 207 Legal Environment and Ethics	3	AGB 421 Agribusiness Management	3
ECO 335 Intermediate Microeconomics	3	ENG 304 Advanced Composition	3
ECO 413 Money and Banking	3	ECO 335 Intermediate Macroeconomics	3
MGT 408 Management Info. Systems	3	ECO 414 Managerial Economics	3
Electives (Advisor Approved)	<u>3</u>	AGB 424 International Agric. Develop. <b>or</b>	(3)
	18	AGB 453 International Agric. Market	<u>(3)</u>
			18

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**Senior Year**

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
AGB 499 Research in Agribusiness	3	AGB 433 Agricultural Sales	3
AGB 422 Agricultural Finance	3	AGB 445 Natural Resources Economics	3
AGB 425 Agricultural Policy	3	AGB 453 International Ag. Marketing <b>or</b>	3
AGB 443 Economics of Food Distribution	3	AGB 424 International Agric. Develop	(3)
Electives (advisor approved)	<u>3</u>	AGB 418 Agricultural Leadership	3
	15	Electives (advisor approved)	<u>2</u>
			14

\*ENG 103 and 104 may be taken by International Students.

**AGRIBUSINESS MANAGEMENT**

128 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
ORI 101 Survival Skills	1	AGB 102 Intro. to Careers in Agriculture	1
ENG 101 *Composition I <b>or</b>	3	ENG 102 *Composition II <b>or</b>	3
ENG 103 Communication Skills 1	(3)	ENG 104 Communications Skills II	(3)
HIS 101 World History I	3	MTH 112 Pre-Calculus Algebra	3
HED 101 Personal & Comm. Health <b>or</b>	2	PSY 201 General Psychology <b>or</b>	3
FAS 101 Food & the Survival of Man <b>or</b>	(2)	SOC 203 Intro. to Sociology	(3)
NHM 103 Nutrition Today	(2)	SPS 101 Intro. to Plant Science	3
AGB 199 Computers in Agriculture	3	SPS 101L Intro. to Plant Science Lab	<u>1</u>
MUS 101 Music Appreciation <b>or</b>	3		14
ART 101 Art Appreciation	<u>(3)</u>		
	15		

**Sophomore Year**

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
AGB 221 Intro. to Agricultural Econ.	3	AGB 299 Quant. App. in Agribusiness	3
AGB 300 Agribusiness Statistics	3	MTH 120 Calculus and its Applications	3
ENG 203 Humanities I	3	ENG 204 Humanities II	3
ECO 232 Principles of Microeconomics	3	ECO 231 Principles of Macroeconomics	3
FAS 112 Intro. to Animal Science	3	SPS 251 Intro. to Soil Science	3
ENG 205 General Speech	<u>3</u>	SPS 251L Intro. to Soil Science Lab	<u>1</u>
	18		16

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
AGB 323 Agricultural Marketing	3	AGB 322 Farm Management	3
BUS 207 Legal Environment and Ethics	3	AGB 421 Agribusiness Management	3
MGT 315 Principles of Management	3	MGT 352 Entrepreneurship	3
ENG 304 Advanced Composition	3	MGT 408 Management Info. System	3
Electives (advisor approved)	<u>6</u>	AGB 424 Intern'l Agric. Develop. <b>or</b>	3
	18	AGB 453 International Agric. Marketing	(3)
		Electives (advisor approved)	<u>3</u>
			18

## Senior Year

<i>First Semester</i>	<i>Sem Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
AGB 499 Research in Agribusiness	3	AGB 433 Agricultural Sales	3
AGB 422 Agricultural Finance	3	AGB 453 Int'l. Agric. Marketing <b>or</b>	3
AGB 425 Agricultural Policy	3	AGB 424 International Agric. Develop.	(3)
Electives (advisor approved)	<u>6</u>	MGT 433 Human Res. Management	3
	15	AGB 418 Agricultural Leadership	3
		Electives (advisor approved)	<u>5</u>
			14

## LIST OF ELECTIVES

### DEPARTMENT OF AGRIBUSINESS

#### Agricultural Economics Option

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
AGB 333	Commodity Marketing	3
AGB 330	Internship	3 – 6
AGB 430	Agricultural Prices	3
AGB 443	Economics of Food Distribution	3
AGB 445	Natural Resource Economics	3
AGB 453	International Agricultural Marketing	3
AGB 490	Special Problems	1 - 3
ECO 413	Money & Banking	3
ECO 416	Consumer Economics	3
FAS 405	Special Problems	1 – 3
SPS 490	Special Problems	1 – 3

#### Agricultural Science Option

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
AGB 405	Extension Methods	3
AGB 420	Agricultural Cooperatives	3
AGB 424	International Agricultural Development	3
AGB 433	Agricultural Sales	3
AGB 443	Economics of Food Distribution	3
AGB 445	Natural Resources Economics	3
AGB 490	Special Problems	1 – 3
FDS 405	Special Problems	1 – 3
SPS 490	Special Problems	3

#### Agribusiness Management Option

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
AGB 330	Internship	3 - 6
AGB 405	Extension Methods	3
AGB 420	Agricultural Cooperatives	3
AGB 424	International Agricultural Development	3
AGB 490	Special Problems	1 - 3
BUS 433	Human Resources Management	3
MGT 352	Entrepreneurship	3

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AGB 405	Extension Methods	3
AGB 420	Agricultural Cooperatives	3
AGB 424	International Agricultural Development	3
AGB 433	Agricultural Sales	3
AGB 443	Economics of Food Distribution	3
AGB 490	Special Problems	1 - 3
FDS 405	Special Problems	1 - 3
SPS 490	Special Problems	3

**DESCRIPTION OF COURSES**

- AGB 102 *Introduction to Careers in Agriculture* – 1 hr. This course provides the agribusiness student an introduction to careers in the private sector and government agencies. Guest speakers are invited to the class to discuss job requirements, fringe benefits and employment opportunities. The student is required to prepare a resume and cover letter for each speaker. **Prerequisite: None** (Offered Spring)
- AGB 199 *Computers in Agriculture* – 3 hrs. This course provides an introduction to DOS compatible computers, word processors and spreadsheets that are commonly found in agriculture and family and consumer sciences and related careers. Emphasis is placed on the word processors and spreadsheets. No prior computer experience is required. **Prerequisite: None** (Offered Fall, Spring, and Summer)
- AGB 211 *Metal Fabrication* – 3 hrs. This course will encompass a combination of three content areas: classification and properties of metals, welding, and machine tool technology. **Prerequisite: None** (Offered Fall)
- AGB 212 *Wood Technology* – 3 hrs. A study of the safe operations and maintenance of woodworking machines. Methods of design, construction and finishing of wood products and an overview of the wood industry. **Prerequisite: None** (Offered Spring)
- AGB 221 *Introduction to Agricultural Economics* – 3 hrs. An introduction to the field of agricultural economics through the application of principles of economics to problems in agriculture and related industries, analysis of supply and demand, resource allocation and utilization; the role of natural resources, population and capital in economics development, policy issues including resource, price and income policies and international trade. **Prerequisite: None** (Offered Fall)
- AGB 299 *Quantitative Applications in Agribusiness* – 3 hrs. This course is an introduction to quantitative agricultural methods, tools and problems solving techniques. The course is designed to expand theoretical math concepts and make applications in the agribusiness and agricultural sector. Emphasis will be on data manipulation especially as it applies to graphical analysis of physical and financial functions. United States Department of Agriculture (USDA) data and the graphical set “World Agricultural Trends and Indicator (WATI)” and US Census of Agriculture databases will be utilized. **Prerequisite: None** (Offered Fall)
- AGB 300 *Agribusiness Statistics* – 3 hrs. An introduction to sources and methods of collection and analysis of prices and other agricultural statistics. Focus on the basic tools of statistical analysis, such as ratios, frequency distribution, averages and dispersion measures, as well as on time series, correlation, and simple and multiple regression analyses. **Prerequisite: MTH 112.** (Offered Fall)
- AGB 301 *Electric Systems and Machines* – 3 hrs. Units of study include: basic circuits elements, electric wiring systems, motor operation and maintenance, electrical and electronic controls. **Prerequisite: None** (Offered Spring)

- AGB 302 *Organization and Administration of Career Technology Education* – 3 hrs. This course will deal with the identification, exploration and research of current issues in the Agricultural and Environmental Sciences, including inquiry, reading and review; problem identification and selection; data collection and analysis; proposing, selecting and testing of possible solutions; and organization, participation and evaluation. **Prerequisite: None** (Offered Spring)
- AGB 311 *Small Power Unit and Equipment* – 3 hrs. This course deals with unit selection, principles of operations, and maintenance of small air-cooled engines. Emphasis will be placed on operation, adjustment, and maintenance of farm tractors. **Prerequisite: None** (Offered Spring)
- AGB 314 *Small Structure Construction* – 3 hrs. This course includes: planning and construction methods for small buildings made of lumber, poles, metals, concrete, blocks and plastics; bill of materials; carpentry of layouts, foundations, framing, floors, covering and finishes. **Prerequisite: None** (Offered Fall)
- AGB 322 *Farm Management* – 3 hrs. Organization and operation of the farm business are analyzed to obtain an income consistent with family resources applied to the individual farm. Emphasis on budgeting crop and livestock systems, farm record analysis, financial management, farm leases, and risk management. **Prerequisite: ECO 232** (Offered Spring)
- AGB 323 *Agricultural Marketing* – 3 hrs. Provides a critical analysis of methods employed by agencies engaged in marketing farm products including services performed, factors affecting prices and marketing channels, marketing agricultural products through cooperatives, and establishment and operation of cooperatives. **Prerequisite: None** (Offered Fall)
- AGB 330 *Internship in Agribusiness* – 4-6 hrs. Provides upper level students with supervised, on-the-job experiences with extension service, agribusiness firms, governmental agencies and farm cooperatives. These experiences will be accompanied by regularly scheduled organized discussion periods designed to provide positive evaluation and analysis of the intern experience. **Prerequisite: None** (Offered Fall, Spring, and Summer)
- AGB 333 *Commodity Marketing* – 3 hrs. Focuses on using futures markets in managing agricultural price risk. Topics include: hedging, forward contracting and options as risk management tools. **Prerequisite: None** (Offered Fall Odd)
- AGB 343 *Economics of Grain Marketing* – 3 hrs. This course exposes students to the activities, economic concepts and principles of grain marketing. The focus is on the movement of major grains grown in the US--corn, wheat, and soybeans—from farm production to final consumption. **Prerequisite: None** (Offered Fall Even)
- AGB 401 *Methods of Teaching in Agriscience* – 3 hrs. Consideration will be given to approved methods and techniques of teaching Agribusiness at the secondary level. Emphasis will be placed on foundations for methods in Agribusiness Education, method for teaching and learning, application of learning, teaching special populations and evaluation of learning. **Prerequisites: EDU 307, EDU 402, EDU 403, EDU 411.** (Offered Fall)
- AGB 402/495 *Directed Teaching* – 9 hrs. Students will do practice teaching in vocational agriculture for twelve (12) weeks in a selected high school in Alabama, offering vocational agriculture, under the supervision of the local teacher of vocational agriculture and the agricultural education teacher trainers of the University. **Prerequisite: None** (Offered Fall and Spring)
- AGB 405 *Extension Methods* – 3 hrs. Principles and procedures in developing extension programs in agriculture, with emphasis on program determination, teaching methods and their relationship to teaching adults in the life-learning process. **Prerequisite: None** (Offered Fall)

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

- AGB 418 *Agricultural Leadership* – 3 hrs. Development of skills, qualities, and behaviors which enable effective leadership, study of group and organization function, interpersonal relationships, teaming and leadership in various organizational settings. **Prerequisite: None** (Offered Spring)
- AGB 420 *Agricultural Cooperatives* – 3 hrs. This course explores the functioning, management, and role of cooperatives in agriculture. It is designed to provide students with greater appreciation of the economic and legal underpinning of institutional arrangements in agriculture and of the potential role such arrangements may play in solving many of the pressing problems in production and marketing of agricultural products. **Prerequisite: None** (Offered Spring)
- AGB 421 *Agribusiness Management* – 3 hrs. The principles of management applicable to the agribusiness industry. The application of economic principles to the decision-making process of firms supplying input to agriculture, or processing and distribution of agricultural products, demand analysis, budgeting, financing, pricing, inventory control, and merchandising. **Prerequisite: ECO 223.** (Offered Spring)
- AGB 422 *Agricultural Financing* – 3 hrs. Study of capital and credit needs of farms and agribusiness firms. Sources and cost of capital and the allocation of capital over time and among alternatives. Risk management strategies and financial performance analysis are covered. **Prerequisite: None.** (Offered Fall)
- AGB 423 *Food Merchandising* – 3 hrs. This course will expose students to various merchandising activities that affect the sale of food and nonfood products through the U.S. food marketing system. Special emphasis will be placed on those merchandising activities that occur in the retail store. **Prerequisite: None.** (Offered Spring Even)
- AGB 424 *International Agricultural Development* – 3 hrs. Conceptual analysis of economic development with international focus on the lesser developed areas and countries. Emphasis is placed on financial aid, technical aid and appropriate factor proportions in the transformation of agrarian economics. **Prerequisite: None.** (Offered Spring Even)
- AGB 425 *Agricultural Policy* – 3 hrs. The application of economic analysis to Federal and State government programs and policies affecting resource adjustment in agriculture to determine their effects on products' incomes and consumers' prices. Past programs are critically appraised in light of existing economics and the political climate at the time of their implementation; existing programs and alternate proposals are evaluated using such criteria as resource use and income distribution within agriculture and between agriculture and the rest of the economy; and other economic and social implications of alternative policies and programs are reviewed. **Prerequisite: None.** (Offered Fall)
- AGB 430 *Agricultural Prices* – 3 hrs. An analysis of the factors affecting the prices of agricultural products and a study of the behavior of these prices; seasonal and cyclical price movement; government activities relating to agricultural prices, marketing margins and prices paid; and price predication. **Prerequisite: None.** (Offered Fall Odd)
- AGB 433 *Agricultural Sales* – 3 hrs. Introduction of sales as a career choice within the agricultural science disciplines. Study of the structure of sales organizations as well as activities involved in day-to-day operations. Hands-on training in performing functions of an agribusiness salesperson are covered. **Prerequisite: None.** (Offered Fall Even)
- AGB 443 *Economics of Food Distribution* – 3 hrs. This course is designed to introduce students to the fundamentals of food distribution and logistics. Students are exposed to logistic systems and management in food distribution. These include inventory, warehousing, traffic, materials and handling, packaging, order processing and customer service. Special emphasis will be placed on the sale of food and nonfood products through the US food marketing system, and the merchandising activities that occur in the retail store. **Prerequisite: None.** (Offered Spring)



- AGB 445 *Natural Resource Economics* – 3 hrs. The course is designed to expose students to fundamentals of agricultural and natural resource economics, with emphasis on the problems and policies of both developed and less developed worlds. Special focus will be placed on pollution control issues, hazardous wastes, and the vulnerability of minority populations and government responses to increasing visibility of these issues. **Prerequisite: None.** (Offered Fall Even)
- AGB 453 *International Agricultural Marketing* – 3 hrs. This course is designed to expose students to the fundamentals of global agricultural marketing, the challenges involved, and the political and economic ramifications of marketing abroad. **Prerequisite: None.** (Offered Spring Odd)
- AGB 490 *Special Problems* – 3 hrs. Guided independent investigation of problems in Agricultural Sciences, Agribusiness Management and Agricultural Economics. **Prerequisite: None.** (Offered Fall, Spring and Summer)
- AGB 499 *Research in Agribusiness* – 3 hr. Critical review of relevant research and group discussion of current developments, and problems related to the agricultural sector. **Prerequisites: Junior or senior standing and consent of academic advisor.** (Offered Spring)

**DEPARTMENT OF COMMUNITY PLANNING AND URBAN STUDIES**

308 James Dawson Building  
(256) 372-5425

**INTRODUCTION**

The Department of Community Planning and Urban Studies (DCPUS) offers a program leading to the degree of Bachelor of Science in Urban Planning. As a professional discipline, urban planning is concerned with sustaining and enhancing the quality of life in cities and regions to create livable communities.

**MISSION**

The mission of the Department of Community Planning and Urban Studies (DCPUS) is to provide nationally accredited planning programs for training students from diverse backgrounds to become planning professionals capable of creating imaginative yet rational solutions to problems and issues of physical, environmental, social and economic change in cities, towns and rural communities, and ultimately positively impact their sustainable development.

**THE B.S. DEGREE PROGRAM IN URBAN PLANNING**

The Bachelor of Science Program in Urban Planning prepares students for diverse professional careers in governmental agencies, land development, consulting businesses, community service organizations, community development corporations (CDCs), and private industry, or graduate study in urban and regional planning. The curriculum is designed to train students to acquire a broad liberal education that leads to an understanding of natural and social environments and their problems; to combine an understanding of urban and rural development issues and problems to formulate programs for achieving public development objectives, and to provide the knowledge, skills and values required for professional planning practice. The knowledge base consists of courses addressing the structure and function of cities, the history and theory of urban planning, the process of plan-making and implementation, and the application of planning principles in a specialization area. The skills component consists of training in problem conceptualization, data collection and analysis, problem solving techniques, project design and management, and oral and graphic communication. The value component consists of activities which build professional behavior and provides an understanding of equity, social justice and cultural resources.

**FINANCIAL ASSISTANCE/SCHOLARSHIPS**

In addition to financial assistance provided by federal and state governments, and AAMU institutional aid programs, the School of Agricultural and Environmental Sciences and the Department of Community Planning and Urban Studies offers financial assistance and scholarship awards. These include the LL Crump Scholarship and work study grants for students who major in urban planning.

**COOPERATIVE EDUCATION/INTERNSHIPS**

Consistent with the Department's mission of education directed at placement of its graduates into the planning profession, the urban planning program augments classroom teaching with internships, department field trips and seminars, and appropriate full-time employment assistance.

## **STUDENT PROFESSIONAL ORGANIZATION**

The Urban Planning Association (UPA) is a student organization which promotes the professional growth and development of students majoring in urban planning. The UPA is affiliated with the Alabama Chapter of the American Planning Association and supports student participation in activities of the American Planning Association and the Association of Collegiate Schools of Planning (ACSP).

## **SPECIAL ACCREDITATION/AFFILIATION**

The Bachelor of Science degree program is one of ten undergraduate planning programs in the country accredited by the Planning Accreditation Board (PAB). The Urban program is also directly affiliated with the Association of Collegiate Schools of Planning (ACSP).

## **ADMISSION CRITERIA**

All applicants must meet the minimum university admission requirements. Generally, applicants must be high school graduates and must successfully complete the Scholastic Aptitude Test (SAT) or the American Collegiate Test (ACT). The availability of scholarships and other financial assistance may be based on scores obtained on these national examinations.

## **GRADUATION REQUIREMENTS**

In order to graduate with a B.S. degree in Urban and Regional Planning, a student must officially declare Urban and Regional Planning as a major select an area of concentration/specialization, complete 122 semester credit hours with a grade of “C” or better in all core courses in the major, and have a cumulative grade-point average of 2.0. The courses and credit hours to be satisfied for graduation are shown below:

- Complete the University General Education Requirements.
- Complete the minimum number of semester credit hours required for graduation.
- Complete a core of 54 credit hours of departmental required courses comprising:
  - 42 credit hours of planning core courses (UPL 101, UPL 201, UPL 203, UPL 303, UPL 310, UPL 316, UPL 317, UPL 327, UPL 330, UPL 404, UPL 407, UPL 408, UPL 429, UPL 420), and
  - 12 credit hours of non-planning or required support courses (ENG 304, PSC 306, SPS 365, GEO 401).

The planning specialization/concentration consists of 21 hours of departmental electives (UPL 103, UPL 405, UPL 406, UPL 442, UPL 435, UPL 438, UPL 443, UPL 444, UPL 445, UPL 453) and 6 credit hours of free electives.

## **Transfer of Credits**

Students wishing to transfer credit from two-year or four-year institutions should review material on “Transfer of Credits” in the General Information section of this Bulletin. Transfer students pursuing a baccalaureate degree in the School of Agricultural & Environmental Sciences must earn at least 50 percent of the credit hours required for the degree at Alabama A&M University.

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

**Program Curricula**

122 credit hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ORI 101	Survival Skills	1	ENG 102	Composition II <sup>2</sup>	3
ENG 101	Composition I <sup>1</sup>	3	MTH 110	Finite Mathematics <b>or</b>	
BIO 101	General Biology I	3	MTH 112	Pre-Calculus Algebra	3
BIO 101L	General Biology I Lab	1	HIS 101	World History <b>or</b>	
CMP 101	Fund. of Comp. & Info Systems <b>or</b>		HIS 204	Intro. to African Studies	3
AGB 199	Computers in Agriculture	3	PHY 101	Physical Science I &	
UPL 103	The Community & You	<u>3</u>	PHY 101L	Physical Science Lab <b>or</b>	
		14	PHY 103	General Physics (4) <b>or</b>	
			BIO 102	General Biology II &	
			BIO 102L	General Biology II Lab <b>or</b>	
			BIO 205	Ecology &	3
			BIO 205L	Ecology Lab	1
			ART 101	Art Appreciation	<u>3</u>
					16

<sup>1</sup> ENG 103 may be taken by international students.

<sup>2</sup> ENG 104 may be taken by international students.

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ENG 203	World Literature I	3	ENG 206	World Literature II	3
ECO 232	Prin.of Macro Economics	3	NHM 103	Nutrition Today <b>or</b>	
PSC 306	State & Local Gov.	3	FAS 101	Food & Survival of Man	2
UPL 203	Hist. & Theory of Plan.	3	ECO 231	Prin. of Micro Economics	3
ENG 205	General Speech	<u>3</u>	GEO 401	Urban Geography	3
		15	UPL 201	Small Town Planning	<u>3</u>
					14

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ENG 304	Advanced Composition	3	UPL 316	Plan. Research Meth. II	3
UPL 310	Urban Economic Anal.	3	UPL 327	Land Use Planning	3
UP 303	Plan. Research Meth. I	3	UPL 330	Population Analysis	3
UPL 317	Plan. Workshop I	3		Specialization Elective	<u>6</u>
SPS 365	GIS & Spatial Analysis	<u>3</u>			15
		15			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
UPL 404	Soc. Plan. Principles	3	UPL 408	Planning Workshop II	3
UPL 407	Legal Basis of Planning	3	UPL 420	Senior Project	3
	Specialization Elective	9	UPL 429	Professional Practice	3
	Free Elective	<u>3</u>		Specialization Elective	3
		18		Free Elective	<u>3</u>
					15

## Electives

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
UPL 405	Practicum I	3
UPL 406	Practicum II	6
UPL 409	Seminar on Planning Problems	3
UPL 410	Seminar on Social Policy Planning	3
UPL 435	Transportation Planning	3
UPL 438	Transportation Modeling	3
UPL 440	Health Planning	3
UPL 442	Environmental Planning	3
UPL 443	Housing Issues	3
UPL 444	Historic Preservation and Neighborhood Conser.	3
UPL 445	Environmental Assessment	3
UPL 453	Community Development Process	3

### Minor in Urban Planning

(18 hours required for minor in Urban Planning)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours.</u>
UPL 101	Introduction to Urban Planning	3
UPL 201	Small Town Planning	3
UPL 310	Urban Economic Analysis	3
UPL 317	Planning Workshop I	3
UPL 404	Social Planning Principles	3
UPL 409	Seminar on Planning Problems	3

## COURSE DESCRIPTIONS

- UPL 101 *Introduction to Urban Planning* – 3 hrs. A course describing the planning profession which includes exposure to history, roles, values, urban design, quantitative methods and various functions performed by planning professionals. (Offered Fall)
- UPL 103 *The Community and You* – 3 hrs. This course is an examination of the role of citizens in the life and viability of communities. It explores the concepts of community, leadership, and public service obligations. Emphasis is placed on an understanding of the dynamics that converge to create healthy and civil societies. (Offered Fall and Spring)
- UPL 201 *Small Town Planning* – 3 hrs. An examination of the features which distinguish the rural environment from the urban and a review of rural development principles. (Offered Spring)
- UPL 203 *History and Theory of Planning* – 3 hrs. A survey of events, dates, and personalities influential in the development of current theory, methods, and practices peculiar to urban planning. (Offered Fall)
- UPL 303 *Planning Research Methods I* – 3 hrs. Methods and procedures in statistical evaluation, including their application to planning and urban analysis. (Offered Fall)
- UPL 310 *Urban Economics Analysis* – 3 hrs. An analysis of economic functions that promote growth and development of urban centers, including the process of urbanization, industrial and urban locations, central functions, functional classification of cities, urban land use, political organization, fiscal policies, urban housing, environment and transportation, employment, and levels of income. (Offered Fall)

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- UPL 316 *Planning Research Methods II* – 3 hrs. Techniques and methods involved in conducting research are covered. Consideration is given to the relationship of research to the planning profession. (Offered Spring)
- UPL 317 *Planning Workshop I* – 3 hrs. An introduction to basic techniques of communicating planning concepts, ideas, and data through graphical representation. The course is designed to train students in survey and analysis of existing urban land uses, and preparation of site and land use plans, and other planning documents. (Offered Fall)
- UPL 327 *Land Use Planning* – 3 hrs. The preparation of the land use plan element of a city’s comprehensive plan, including the allocation of land for various uses based upon a community’s goals and objectives. **Prerequisite: UPL 317.** (Offered Spring)
- UPL 330 *Population Analysis* – 3 hrs. A study of the impact of population movements on social, economic, and political affairs, as well as instruction on the process and use of population forecasting, rates, and ratios. (Offered Spring)
- UPL 404 *Social Planning Principles* – 3 hrs. An introduction to the basic concepts of social planning. The social impact of physical development plans on urban societies are described and analyzed. (Offered Fall)
- UPL 405 *Practicum I* – 3 hrs. Student placement in a public or private planning agency or department to perform a predetermined work assignment under direct agency supervision of ten hours per week. **Restricted to juniors and seniors with a cumulative GPA of 2.5 or above.** (Offered Fall)
- UPL 406 *Practicum II* – 6 hrs. Student placement in a public or private planning agency or department to perform a predetermined work assignment under direct agency supervision for 20 hours per week. Additionally, a special project will be completed by the student for evaluation by the agency and faculty supervisors. **Restricted to juniors and seniors with a GPA of 2.5 or above.** (Offered Fall, Spring, and Summer)
- UPL 407 *Legal Basis of Planning* – 3 hrs. A review and analysis of legal concepts, major legislation, and major judicial interpretations relating to urban planning with emphasis on local and land development, and related laws. (Offered Fall)
- UPL 408 *Planning Workshop II* – 3 hrs. A synthesizing course involving data collection, analysis, plan preparation, and review of implementation techniques. **Prerequisites: UPL 330, UPL 317, and UPL 327.** (Offered Spring)
- UPL 409 *Seminar on Planning Problems* – 3 hrs. An examination of public policies and programs which affect the physical growth and development of a city with emphasis upon local land use, housing, and transportation “problem-solving.” (Offered Spring)
- UPL 410 *Seminar on Social Policy Planning* – 3 hrs. An examination of critical social policy issues and feasible alternative solutions. (Offered Spring, Odd Years)
- UPL 420 *Senior Project* – 3 hrs. An investigation of a selected urban issue or problem. Executed under the direction of an assigned faculty member, a paper or a report will be prepared and presented which reflects the student’s analytical research and problem-solving capabilities. (Offered Fall, Spring, Summer)
- UPL 429 *Professional Practice* – 3 hrs. The objectives of the course are to train students in methods and ethics of professional practice. The course is designed to provide skills in project planning, proposal writing, budget development, and program management for governmental and nonprofit agencies. Additionally, the course introduces concepts of professional practice and requirements for membership in the American Institute of Certified Planners (AICP). (Offered Spring)

- UPL 435 *Transportation Planning* – 3 hrs. An introduction to methods, processes, and techniques for planning a total transportation system. **Prerequisite: Approval of Advisor.** (Offered Fall, Even Years)
- UPL 436 *Health Planning* – 3 hrs. An examination of the problems of community health care and the use of planning principles applied toward the provision of comprehensive health services and facilities. (Offered Summer, Odd Years)
- UPL 438 *Transportation Modeling* – 3 hrs. This course presents an in-depth orientation to contemporary transportation planning computer model analysis techniques. Practical applications are provided to gain experience in data generation, data management, program execution, and interpretation of computer output. (Offered Spring, Even Years).
- UPL 442 *Planning and the Environment* – 3 hrs. This course focuses on the synthesizing of public and private physical, social, economic and cultural planning practices as a means for ensuring environmental stability. (Offered Fall, Even Years)
- UPL 443 *Housing Issues* – 3 hrs. An introduction to the nature of housing needs and supply in the community. It also examines the various methods (policies and programs) used by the public sector to intervene in the housing market. In addition, the methodology and techniques utilized to assess housing conditions and needs are examined. (Offered Spring, Odd Years)
- UPL 444 *Historic Preservation and Neighborhood Conservation* – 3 hrs. A study of the legislation, standards, and practices related to the conservation of neighborhoods and historically significant buildings and districts. (Offered Summer, Odd Years)
- UPL 445 *Environmental Assessment* – 3 hrs. A concentration on federal, state and local environmental regulations with emphasis on translating environmental assessment results into public policy, and a conceptualization of the mitigation of identifiable conflicts with specific attention to the socio-economic impacts on urban societies. (Offered Spring, Odd Years)
- UPL 453 *Community Development Process* – 3 hrs. An investigation of overall community development strategies that include the integration of physical, economic, and cultural and social forces. Special attention is given to the political, business and citizen participation processes that together inform the community development process aimed at equitable, sustainable and healthy geographic communities. (Offered Fall, Odd Years)

**DEPARTMENT OF FAMILY AND CONSUMER SCIENCES**

105 CCB Hobson Wing  
(256) 372-5419

**INTRODUCTION**

The Department of Family and Consumer Sciences includes programs in Apparel, Merchandising and Design, Human Development and Family Studies, Family and Consumer Sciences Education, and Nutrition and Hospitality Management.

**MISSION**

The mission of the Family and Consumer Sciences program is the preparation of professionals equipped to enhance the general well-being of individuals, families and communities, within the context of the environments in which they are a part through teaching, research, demonstration and economic development activities.

The objectives of Family and Consumer Sciences are to guide the student in:

1. developing a sound and satisfying philosophy of life inherent with democratic principles.
2. preparing for professional practice in a specialized field.
3. using intelligence in solving personal and family problems in today's society.
4. enhancing his or her own general and cultural education.
5. accepting responsibility as an informed citizen in a changing world.

**PROGRAM OFFERINGS**

The Department of Family and Consumer Sciences is organized into three areas: Apparel, Merchandising, and Design; Human Development and Family Studies; and Nutrition and Hospitality Management. The Department offers a Bachelor of Science degree in Family and Consumer Sciences with majors in Apparel, Merchandising and Design (Fashion Design, Fashion Merchandising); Family and Consumer Sciences Education; Human Development and Family Studies; and Nutrition and Hospitality Management (General Dietetics, Hospitality Management). The Interior Design major is on hold.

**REQUIREMENTS FOR GRADUATION**

Students who choose Family and Consumer Sciences follow the admission and graduation requirements as outlined elsewhere in the Undergraduate Bulletin:

1. Completion of required courses, which ensure acquired competencies in Family and Consumer Sciences.
2. Satisfactory completion of the Family and Consumer Sciences entrance, mid-level and exit assessments.
3. Completion of all courses in the area with a minimum grade of "C."
4. Maintaining membership in the parent-professional organization, the American Association of Family and Consumer Sciences, as well as in specialized organizations in the program areas.
5. Completion of minors as required by majors.
6. Completion of required semester hours as listed by majors.
7. \*Completion of a minimum of 400 hours of clinical experiences/internships.
8. \*\*Application for entrance into teacher education. (See Guidelines for Admission under School of Education for procedures and requirements)



9. \*\*Completion of School of Education Exit Assessment.

\*See specific details by major.

\*\*Family and Consumer Sciences Education.

## **FINANCIAL AID**

### **Family and Consumer Sciences Awards**

#### *The Abigail K. Hobson Memorial Scholarship Award*

The Huntsville Branch of the American Association of University Women provides a cash award of \$500.00 or more to a student in Family and Consumer Sciences who shows a need for financial aid, has an above average scholastic record, and has desirable personal qualities.

#### *Mozelle Davis Award*

Friends of Mozelle Davis, former assistant professor in Family and Consumer Sciences, provide a cash award of \$200.00 or more to a student with an option in Fashion Design within the Area of Apparel, Merchandising, and Design.

#### *The Eliza P. Patton Award*

Friends of the late Mrs. Eliza P. Patton, former associate professor in Family and Consumer Sciences, provide two annual scholarships of \$125.00 or more, each, to two students in Family and Consumer Sciences whose interests are Apparel, Merchandising, and Design, and Nutrition and Hospitality Management, where funds permit.

#### *Human Development Award*

Contributions from friends and alumni of the Area are used to generate cash awards for two deserving students with a major in Human Development and Family Studies.

#### *The Wayne Hendricks Award*

Ms. Nancy Wayne Hendricks, member of the School of Agricultural and Environmental Sciences Advisory Council, gives one annual scholarship of \$1,000.00 to a student majoring in Nutrition and Hospitality Management. Ms. Hendricks has also endowed an additional scholarship for a deserving student in Nutrition and Hospitality Management.

## **PROFESSIONAL ORGANIZATIONS**

The Pre-professional and Graduate Member section of the **American Association of Family and Consumer Sciences** is the umbrella professional organization for students enrolled in Family and Consumer Sciences. This is an educational and scientific organization founded to improve individual and family life through education, research, cooperative programs and public information.

**Kappa Omicron Nu**, a national family and consumer sciences honor society, has as its objective the emphasis of scholastic, professional and intellectual excellence. It is open to students enrolled in Family and Consumer Sciences who have completed eight semester hours in their major with a cumulative GPA of 3.0 or above.

The **Nutrition and Hospitality Management Club** enhances the development of students in Nutrition and Hospitality Management and provides opportunities for pre-professional experiences.

The **Trendsetters Fashion Club** seeks to enhance the personal and professional development of students in Apparel, Merchandising, and Design. Membership is open to majors, minors, and non-majors interested in the objectives of the organization.

**APPAREL, MERCHANDISING AND DESIGN PROGRAM AREA**

205 Carver Complex-Hobson Wing  
(256) 372-4172

**PURPOSE**

The undergraduate major in Apparel, Merchandising, and Design is designed to promote and enhance the development of knowledge and skills requisite for continuing personal and professional development throughout the life cycle. The program enables students to develop competencies in the ecological, socio-psychological, and economic aspects of apparel and interior design, production, distribution, and consumption.

The program is organized to provide a general understanding of textiles, clothing, fashion and related areas, while offering diversification through concentrations in Fashion Merchandising, Fashion Design, and Interior Design (on hold). As designed, the programs provide unique opportunities and experiences to assist students in becoming creative, efficient and contributing members of society and of the Family and Consumer Sciences profession. The curriculum offers the training necessary to meet the demands of the apparel and home furnishings industries, as well as retailing establishments associated with these industries. Students are prepared for jobs in apparel design, production, merchandising, and associated public relations jobs.

**OBJECTIVES**

The objectives of the undergraduate program in Apparel, Merchandising, and Design are to:

1. develop professional competencies in students which enable them to enter graduate and professional schools and professional careers related to the broad spectrum of apparel design, textiles, merchandising, and interiors.
2. provide support instruction for minors in other disciplines who desire to pursue careers related to clothing, merchandising, or interior design.
3. provide resource services to individuals in the urban and rural community, including parents, teachers, department store personnel and textile employees.

**APPAREL, MERCHANDISING AND DESIGN MAJOR**

**Fashion Design Concentration**

128 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	<sup>2</sup> ENG 102 Composition II	3
<sup>1</sup> ENG 101 Composition I	3	HIS History Course	3
MTH 112 Pre Calculus Algebra	3	ART 101 Art Appreciation	3
BIO 101 General Biology	3	NHM 102L Principles of Nutrition	3
BIO 101L General Biology Lab	1	AMD 104L Art and Design	3
HIS 101 World History I	3	HED 101 Personal & Comm. Health <b>or</b>	2
FCS 101 Intro to the Profession	<u>1</u>	NHM 103 Nutrition Today	<u>2</u>
	15		17

<sup>1</sup>ENG 103 may be taken by international students.

<sup>2</sup>ENG 104 may be taken by international students.

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 203	World Literature I <b>or</b>	3	ENG 204	World Literature II <b>or</b>	3
ENG 201	Survey of English Lit. I	3	ENG 202	Survey of English Lit. II	3
CHE 111	Applied Chemistry I	3	PSY 201	General Psychology	3
CHE 111L	Applied Chemistry I Lab	1	ECO 200	Basic Economics	3
ART 110	Fundamentals of Drawing	3	ART 209	Composition with Drawing	3
AMD 203	Consumer Asp. of Clothing	3	AMD 204L	Clothing Throughout Life Cycle	3
AMD 205L	Basic Clothing Construction	<u>3</u>	AMD 208	Ready to Wear App. Analysis	<u>2</u>
		16			17

### Junior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ART 309	Figure Drawing	3	MDT 252	AutoCAD for Apparel	3
ENG 205	General Speech	3	AMD 306	Fashion Merchandising II	3
AMD 303	Fashion Merchandising I	3	AMD 302	Historic Costume	3
AMD 307L	Flat Pattern Design	3	AMD 316L	Consumer Textiles II	3
AMD 315	Consumer Textiles I	<u>3</u>	ART 406	Fashion Illustration	<u>3</u>
		15			15

### Summer

AMD 411 Directed Field Experience 6

### Senior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
FCS 420	Senior Seminar	1	AMD 308	Visual Merchandising	3
AMD 405L	Functional Clothing	3	AMD 404L	Adv. Clothing & Design	3
AMD 410L	Apparel CAD	3	AMD 406L	Draping	3
AMD 419	Merchd. & Design Seminar	2	HDF 314	Family and Society	<u>3</u>
	Electives	<u>6</u>			12
		15			

## APPAREL, MERCHANDISING AND DESIGN MAJOR

### Fashion Merchandising Concentration

128 Credit Hours

### Freshman

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ORI 101	Survival Skills	1	<sup>2</sup> ENG 102	Composition II	3
<sup>1</sup> ENG 101	Composition I	3	HIS	History Course	3
BIO 101	General Biology I	3	ART 101	Art Appreciation	3
BIO 101L	General Biology I Lab	1	NHM 102L	Principles of Nutrition	3
HIS 101	World History I	3	AMD 104L	Art and Design	3
FCS 101	Intro. To the Profession	1	NHM 103	Nutrition Today <b>or</b>	2
MTH 112	Pre Calculus Algebra	<u>3</u>	HED 101	Personal and Comm. Health	<u>2</u>
		15			17

<sup>1</sup>ENG 103 may be taken by international students.

<sup>2</sup>ENG 104 may be taken by international students.

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

**Sophomore**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 203	World Literature I <b>or</b>	3	ENG 204	World Literature II <b>or</b>	3
ENG 201	Survey of English Literature I	3	ENG 202	Survey of English Literature II	3
CHE 111	Applied Chemistry I	3	SOC 201	Intro. to Sociology <b>or</b>	3
CHE 111L	Applied Chemistry Lab	1	PSY 201	General Psychology	3
ART 111	Two Dimensional Design	3	ECO 231	Principles of Macro Economics I	3
AMD 203	Consumer Aspects of Clothing	3	HDF 314	Family and Society	3
AMD 205L	Basic Clothing Construction	<u>3</u>	AMD 204L	Clothing Throughout	
		16			the Life Cycle
3			AMD 208	Ready-to-Wear Apparel Anal.	<u>2</u>
					17

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ACC 203	Intro. to Accounting I	3	ECO 232	Principles of Economics II	3
MKT 306	Principles of Marketing	3	AMD 302	Historic Costume	3
MKT 309	Retail Management	3	AMD 306	Fashion Merchandising II	3
AMD 303	Fashion Merchandising	3	AMD 308	Visual Merchandising	3
AMD 307L	Flat Pattern Design	3	AMD 316L	Consumer Textiles II	<u>3</u>
AMD 315	Consumer Textiles I	<u>3</u>			15
		18			

**Summer**

AMD 411	Directed Field Experience	6
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**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 205	General Speech	3	MKT 377	Marketing Management	3
MKT 323	Promotion Management	3	AMD 404L	Advanced Clothing & Design	3
FCS 420	Senior Seminar	1		Electives	<u>6</u>
MKT 332	Merchandising Techniques	3			12
AMD 419	Merch. & Design Seminar	<u>2</u>			
		12			

**APPAREL, MERCHANDISING AND DESIGN MAJOR**

**Interior Design Concentration (On Hold)**

129 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	<sup>2</sup> ENG 102	Composition II	3
<sup>1</sup> ENG 101	Composition I	3	HIS	History Course	3
BIO 101	General Biology	3	ART 101	Art Appreciation	3
BIO 101L	General Biology Lab	1	NHM 102L	Principles of Nutrition	3
HIS 101	World History	3	HED 101	Personal & Comm. Health <b>or</b>	2
FCS 101	Intro. To the Profession	1	NHM 103	Nutrition Today	2
MTH 112	Pre Calculus Algebra	<u>3</u>	AMD 104L	Art and Design	<u>3</u>
		15			17

<sup>1</sup>ENG 103 may be taken by international students.

<sup>2</sup>ENG 104 may be taken by international students.

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I or	3	ENG 204 World Literature II or	3
ENG 201 Survey of English Lit.	3	ENG 202 Survey of Engl. Lit. II	3
CHE 111 Applied Chemistry	3	PSY 201 General Psychology	3
CHE 111L Applied Chemistry Lab	1	ECO 200 Basic Economics	3
ART 111 Two Dimensional Design	3	ACC 203 Intro. to Accounting I	3
ECO 231 Principles of Economics I	3	HDF 314 Family & Society	3
AMD 205L Basic Clothing Construction	<u>3</u>	AMD 206L Interior Design	<u>3</u>
	16		18

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ART 401 History of Art I	3	ENG 205 General Speech	3
MKT 309 Retail Management	3	MDT 252 AutoCAD for Apparel	3
MGT 315 Principles of Management	3	AMD 312L Interior Furnishings	3
AMD 312L Interior Furnishings	3	AMD 314L Decorative Accents	3
AMD 305 Housing & Interiors	<u>3</u>	AMD 316L Consumer Textiles II	<u>3</u>
	16		15

### Summer

AMD 411 Directed Field Experience	6
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### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FCS 420 Senior Seminar	1	AMD 414 Interior Space Planning	3
CET 405 Architectural Drawing	3	AMD 416 Contemporary Design	3
AMD 407 Adv. Interior Design	3	AMD 418 Professional Practices II	3
AMD 413L Lighting and Wiring	2	Electives	<u>3</u>
AMD 417 Professional Practices I	3		12
Electives	<u>2</u>		
	14		

## APPAREL, MERCHANDISING AND DESIGN MINOR

Non-majors who wish to pursue a minor in fashion design, fashion merchandising or interior design must meet the requirements of 18 semester hours. From the listing below, students may select a concentration through consultation with faculty in the area.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
AMD 104L	Art and Design	3
AMD 203	Consumer Aspects of Clothing	3
AMD 204L	Clothing Throughout the Life Cycle	3
AMD 205L	Basic Clothing Construction	3
AMD 206L	Interior Design	3
AMD 208	Ready-To Wear Apparel Analysis	2
AMD 302	Historic Costume	3
AMD 303	Fashion Merchandising I	3
AMD 304	Cultural Aspects of Clothing	3
AMD 305	Housing and Interiors	3
AMD 306	Fashion Merchandising II	3
AMD 307L	Flat Pattern Design	3
AMD 308	Visual Merchandising	3

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AMD 312L	Interior Furnishings	3
AMD 314L	Decorative Accents	3
AMD 315	Consumer Textiles I	3
AMD 316L	Consumer Textiles II	3
AMD 404L	Advanced Clothing and Design	3
AMD 405L	Functional Clothing Design	3
AMD 406L	Draping	3
AMD 407	Advanced Interior Design	3
AMD 410L	Apparel CAD	3
AMD 411	Directed Field Experience	6
AMD 413L	Lighting and Wiring	3
AMD 414	Interior Space Planning	3
AMD 416	Contemporary Design	3
AMD 417	Professional Practices I	3
AMD 418	Professional Practices II	3
AMD 419	Merchandising and Design Seminar	2
AMD 421	Problems and Independent Study	1-3
AMD 422	Fashion Study Tour	1-3

**COURSE DESCRIPTIONS**

- AMD 104L *Art and Design* – 3hrs. A study of the art elements and principles and their application to everyday life. **Prerequisite: None.** (Offered Spring)
- AMD 203 *Consumer Aspects of Clothing* – 3 hrs. An introduction to clothing and textiles, including wardrobe planning, maintenance, and coordination; clothing selection criteria; clothing for the world of work; textile classification; and use and care of textile products. **Prerequisite: None.** (Offered Fall)
- AMD 204L *Clothing Throughout the Life Cycle* – 3 hrs. One, 1-hr. lecture and two, 2-hr. lab periods per week. A study of the economic, social, and psychological aspects of clothing as they relate to the acquisition, use, and care of clothing for family members. Domestic and commercial sewing machines are utilized. **Prerequisites: AMD 104L, AMD 203.** (Offered Spring)
- AMD 205L *Basic Clothing Construction* – 3 hrs. One, 1-hr. lecture and two, 2-hr. lab periods per week. Experience in the development of basic skills in clothing construction. Open to male and female students and other adults with little or no experience in clothing construction. **Prerequisite: None.** (Offered Fall)
- AMD 206L *Interior Design* – 3 hrs. One, 1-hr. lecture and two, 2-hr. lab periods per week. The application of the elements and principles of art to the planning, selection, and arrangement of household furniture and furnishings. A survey of traditional, contemporary, and modern trends in interior and exterior house planning is provided. **Prerequisite: AMD 104L.** (Offered Spring, Odd Years)
- AMD 208 *Ready-to-Wear Apparel Analysis* – 2 hrs. An industry approach to the evaluation of quality in ready-to-wear apparel. Provides an understanding of what constitutes apparel quality, how it is achieved, and the factors that affect cost and quality. **Prerequisite: None.** (Offered Spring)
- AMD 302 *Historic Costume* – 3 hrs. A comprehensive study of dress throughout periods of history, including the cultural and economic factors associated with the development, adoption, and abandonment of styles. **Prerequisite: None.** (Offered Spring)
- AMD 303 *Fashion Merchandising I* – 3 hrs. A study of the American and European fashion industries from production of raw materials to the distribution of finished goods and their impact on the international economy. An understanding of the language of fashion, fashion designers, and retailers is included. **Prerequisite: None.** (Offered Fall)

- AMD 304      *Cultural Aspects of Clothing* – 3 hrs. A study of clothing as a social, psychological, and economic force, including the study of cultural patterns, behavioral reactions, changing needs, and technological developments. **Prerequisite: None.** (Offered Spring, Even Years)
- AMD 305      *Housing and Interiors* – 3 hrs. A study of housing and living environments with emphasis on construction, arrangement, use and care of furniture and equipment. **Prerequisite: None** (Offered Fall)
- AMD 306      *Fashion Merchandising* – 3 hrs. Provides basic concepts and practices of retail management and their relationship to the world of fashion. Activities involved in the merchandising of fashion goods, including analyzing and forecasting consumer demand and planning promotional strategies are emphasized. **Prerequisite: AMD 303.** (Offered Spring)
- AMD 307L     *Flat Pattern Design* – 3 hrs. One, 1-hour lecture and two 2-hour lab periods per week. An in-depth study of the basic principles of flat pattern manipulations and their applications to apparel design. **Prerequisites: AMD 104L, AMD 203, AMD 204L and AMD 205L.** (Offered Fall)
- AMD 308      *Visual Merchandising* – 3 hrs. The study of creative techniques in the display of retail merchandise and their effective application to the enhancement of product salability. **Prerequisite: AMD 104L.** (Offered Spring)
- AMD 312L     *Interior Furnishings* – 3 hrs. One, 1-hr. lecture and two, 2-hr. lab periods per week. A study of the design, materials, construction, and production of interior components and accessories from both a contemporary and an historical perspective. **Prerequisites: AMD 104L and AMD 205L.** (On Hold)
- AMD 314L     *Decorative Accents* – 3 hrs. One, 1-hr. lecture and two, 2-hr. lab periods per week. The basic design principles applied to pattern, texture, and color in relation to accents for interiors. Emphasis is on practical accessories, window treatments, and added touches with upholstery and wallpaper. **Prerequisite: AMD 205L.** (On hold)
- AMD 315      *Consumer Textiles I* – 3 hrs. A study of fibers, yarns, structures, color, and finishing techniques of textiles and textile products with emphasis on the selection of fabrics for specific consumer end uses. **Prerequisite: None.** (Offered Fall)
- AMD 316L     *Consumer Textiles II* – 3 hrs. One, 1-hr. lecture and two, 2-hr. lab periods per week. Advanced study of textile fibers, fabrics and products utilizing laboratory testing techniques and safety procedures employed in the evaluation of textiles for specific end uses. **Prerequisite: AMD 315.** (Offered Spring)
- AMD 404L     *Advanced Clothing and Design* – 3 hrs. One, 1-hour lecture and two, 2-hour lab periods per week. Provides techniques in methods of fitting, designing, and advanced clothing construction. Designing and construction of garments for individual figure types and pattern-making through the flat pattern method are emphasized. **Prerequisites: AMD 204L and AMD 307L.** (Offered Spring)
- AMD 405L     *Functional Clothing Design* – 3 hrs. One, 1-hour lecture and two, 2-hour lab periods per week. Development of apparel from a problem-solving perspective to meet aesthetic and functional needs in regard to exceptional proportions, rehabilitation, activity, performing arts, and new technology. **Prerequisites: AMD 104L and AMD 205L.** (Offered Fall, Odd Years)
- AMD 406L     *Draping* – 3 hrs. One, 1-hour lecture and two, 2-hour lab periods per week. The principles and techniques of draping. Dress designing based on the manipulation of fabric on a form. **Prerequisites: AMD 104L, AMD 205L, AMD 307L and ART 110.** (Offered Spring)

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- AMD 407 *Advanced Interior Design* – 3 hrs. Physical, social, psychological, and economic factors influencing the selection of housing for individual and family living, including location, design, structure, and interior. **Prerequisite: AMD 206L.** (On Hold)
- AMD 410L *Apparel CAD* – 3 hrs.: One, 1-hr. lecture and two, 2-hr. lab periods per week. Hands-on experience in the application of AutoCAD principles to apparel design, pattern making, and grading. **Prerequisites: MDT 252 and AMD 307L.** (Offered Fall)
- AMD 411 *Directed Field Experience* – 6 hrs. Eight weeks of off-campus, supervised experience in a department store, agency, business establishment, or other approved setting. **Prerequisite: Permission of advisor.** (Offered Fall, Spring, and Summer)
- AMD 413L *Lighting and Wiring* – 2 hrs. One 1-hour lecture and 2-hour lab period per week. The qualitative and quantitative aspects of lighting and wiring and their application to interior design and decorating problems. **Prerequisites: AMD 206L and AMD 312L.** (On Hold)
- AMD 414 *Interior Space Planning* – 3 hrs. The examination and analysis of interior spaces with emphasis on layout, composition, and a variety of decorating media. **Prerequisite: AMD 252.** (On Hold)
- AMD 416 *Contemporary Design* – 3 hrs. An in-depth study of forms, methods, and materials utilized in the interior and exterior design of contemporary structures. **Prerequisites: AMD 301, AMD 312L, AMD 315, AMD 407, and AMD 413L.** (On Hold)
- AMD 417 *Professional Practices I* – 3 hrs. A study of professional and product liabilities, regulations and standards, and quality control materials. Methods and techniques for developing project specifications will be covered. **Prerequisite: Permission of Advisor.** (On Hold)
- AMD 418 *Professional Practices I – I3* hrs. An advanced study of working with clientele to develop project specifications. Four design problems will be completed as preparation for taking professional certification examinations. **Prerequisite: AMD 417.** (On Hold)
- AMD 419 *Merchandising and Design Seminar* – 2 hrs. A study and discussion of contemporary social, economic, and political trends and issues of significance to the textiles and apparel industries, including an examination of future directions for the profession. Personal and professional entry-level skills and practical experiences are explored, as well. **Prerequisite: Open to senior-level majors and minors on approval of advisor.** (Offered Fall)
- AMD 421 *Problems and Independent Study* – 1-3 hrs. Special problem selected and solved by the students. Independent study, research, projects, or special field experience under area supervision and evaluation is required. **Prerequisite: Open to majors and minors on approval of advisor.** (Offered Fall, Spring, and Summer)
- AMD 422 *Fashion Study Tour* – 1-3 hrs. A study of the many facets of the fashion industry, including tours of primary and secondary suppliers, apparel manufacturers, designer showrooms, fashion presses, accessory showrooms, buying offices, testing laboratories, pattern companies, merchandising centers, museums, mansions, and so forth. Pre- and post-tour seminars and written assignments are required. **Prerequisite: None.** (Offered Spring)



## HUMAN DEVELOPMENT AND FAMILY STUDIES PROGRAM AREA

105 Carver Complex- Hobson Wing  
(256) 372-5419

### PURPOSE

The Human Development and Family Studies Program focuses on the family and relationships throughout the life cycle in a setting of multicultural forces. Both theoretical and research findings are integrated into a multi-disciplinary approach to addressing the problems facing families in modern society.

There are two majors offered through the area: Human Development and Family Studies, and Family and Consumer Sciences Education. Students in Human Development and Family Studies may choose to concentrate in Child Development, Adolescent Development or related areas. The second major, Family and Consumer Sciences Education, is offered in cooperation with the School of Education. Graduates may pursue careers in family life, child and adolescent development, government, social service agencies, teaching, or private businesses that specialize in goods and services for the family.

### OBJECTIVES

The program offerings in Human Development and Family Studies are designed to:

1. prepare competent individuals for professional careers and graduate study;
2. assist students in developing an understanding of the interrelationship of physical, psychological, and social development throughout the life-span;
3. provide opportunities for students to study and observe children and adolescents of varying stages of development; and
4. provide opportunities for students to obtain strength in the management of individual and family resources.

## HUMAN DEVELOPMENT AND FAMILY STUDIES MAJOR

128 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	<sup>2</sup> ENG 102 Composition II	3
<sup>1</sup> ENG 101 Composition I	3	BIO 102 General Biology II	3
MTH 112 Pre-Calculus Algebra	3	BIO 102L General Biology II Lab	1
BIO 101 General Biology I	3	PED Physical Education Activity	1
BIO 102L General Biology I Lab	1	AMD 104L Art and Design	3
HIS 101 World History I	3	ART 101 Art Appreciation	3
HED 101 Personal & Comm. Health <b>or</b>	(2)	NHM 102 Principles of Nutrition	<u>3</u>
NHM 103 Nutrition Today	(2)		17
FCS 101 Intro. to the Profession	<u>1</u>		
	17		

<sup>1</sup>ENG 103 may be taken by international students.

<sup>2</sup>ENG 104 may be taken by international students.

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**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 203	World Literature I <b>or</b>	(3)	ENG 204	World Literature II <b>or</b>	(3)
ENG 201	Survey of English Lit. I	(3)	ENG 202	Survey of English Lit. II	(3)
MUS 101	Music Appreciation	3	HIS 203	Found. of Amer. His. & Govt.	3
PSY 201	General Psychology	3	PED	Physical Education Activity	1
SOC 201	Intro. to Sociology	3	SWK 200	Intro. to Social Welfare	3
ECO	Economics	3	AGB 199	Computers in Agriculture	3
HDF 201	Family Relations	<u>3</u>	HDF 211	Child Growth & Development	<u>3</u>
		18			16

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
SPE 201	Intro. to Exceptional Children	3	ENG 304	Advanced Composition	3
HDF 303	Family Theory	3	SWK 205	Gerontology	3
HDF 304	Parenting	3	SWK 306	The Art of Interviewing	3
HDF 306	Mid. Childhood & Adolescence	3	HDF 312L	Family Econ. & Home Mgmt.	3
	Concentration Elective	<u>2</u>	HDF 314	Family & Society	<u>3</u>
		14			15

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
FCS 420	Senior Seminar	1	HDF 410	Readings & Research in	
HDF 413	Behavior Management	3		Family Studies	3
HDF 415	Assessment in Human		HDF 444	Internship	6
	Development & Family	3		Concentration Electives	<u>6</u>
HDF 416	Program Development	3			15
	Concentration Electives	<u>6</u>			
		16			

**NOTE:** In consultation with major advisor, a concentration may be selected in Child Development or other areas.

**CHILD DEVELOPMENT ASSOCIATE (CDA) PREPARATION PROGRAM**

Courses are available for students who desire to pursue the Child Development Associate credential. The credential is issued by the Council for Early Childhood Professional Recognition in Washington, D.C. For assistance, consult Human Development and Family Studies faculty.

**HUMAN DEVELOPMENT AND FAMILY STUDIES MINOR**

Students desiring a minor in Human Development and Family Studies are required to complete 18 semester hours beyond their curriculum requirements. The courses must be selected through consultation with an advisor in the area.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
HDF 211	Child Growth and Development	3
HDF 212	Consumer Survival	1-3
HDF 302	Survey of Extension	3
HDF 303	Family Theory	3
HDF 304	Parenting	3
HDF 306	Middle Childhood and Adolescence	3
HDF 307	Motor-Perceptual Development in Early Childhood	3
HDF 308	Guidance in Prepared Environments	3
HDF 309	Human Sexuality	3
HDF 310	Infant and Toddler Development	3
HDF 311	Theories of Child and Adolescent Development	3
HDF 312L	Family Economics and Home Management	4
HDF 314	Family and Society	3
HDF 317	Child Development Programs and the Community	3
HDF 318	Workshop	3-6
HDF 401	Family Financial Counseling	3
HDF 402	Preschool Curriculum Development	3
HDF 410	Readings and Research in Family Studies	3
HDF 411	Infant Programs	3
HDF 412	Independent Study	1-3
HDF 413	Behavior Management in the School	3
HDF 415	Assessment in Human Development and Family	3
HDF 416	Program Development	3
HDF 444	Internship	6

## FAMILY AND CONSUMER SCIENCES EDUCATION MAJOR

127 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	<sup>2</sup> ENG 102 Composition II	3
<sup>1</sup> ENG 101 Composition I	3	MUS 101 Music Appreciation <b>or</b>	(3)
MTH 112 Pre Calculus Algebra	3	ART 101 Art Appreciation	(3)
BIO 101L General Biology I	3	NHM 102L Principles of Nutrition	3
BIO 101L General Biology I Lab	1	AMD 104L Art and Design	3
HIS 101 World History I	3	AGB 199 Computers in Agriculture	<u>3</u>
HED 101 Personal & Comm. Health <b>or</b>	(2)		15
PED Physical Education Activity <b>or</b>	(2)		
ROTC	(2)		
FCS 101 Intro. to the Profession	<u>1</u>		
	17		

<sup>1</sup>ENG 103 may be taken by international students.

<sup>2</sup>ENG 104 may be taken by international students.

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 203	World Literature I	3			
CHE 111	Applied Chemistry I	3	ENG 204	World Literature II	3
CHE 111L	Applied Chemistry I Lab	1	PSY 201	General Psychology	3
NHM 201L	Science of Food Preparation	4	AMD 204L	Clothing Through the Life Cycle	3
HDF 201	Family Relations	3	HDF 211	Child Growth & Development	3
AMD 203	Consumer Aspects of Clothing	<u>3</u>	FED 200	Introduction to Teacher Ed.	<u>2</u>
		17			14

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ECO 200	Basic Economics	3	HIS 203	Found. Of American History	3
HDF 314	Family and Society	3	HDF 304	Parenting	3
FCS 303	Career Tech. /FCS Education.	3	NHM 301L	Food Service Operations I	3
SPE 201	Intro. To Study Except. Individ.	3	HDF 312L	Family Economics & Home	
AMD 305	Housing and Interiors	3		Management	3
FCS	Elective	<u>3</u>	SED 307	Principles of Teaching	<u>3</u>
		18			15

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
FCS 401	Family & Consumer Sciences		FCS 495	Directed Teaching Seminar	12
	Education	3	FCS 420	Seminar	<u>1</u>
SED 409	Reading in Content Area	3			13
FED 404	Tests and Measurements	3			
PSY 403	Educational Psychology	3			
FED 300	Foundation of Education	3			
FCS	Elective	<u>3</u>			
		18			

**COURSE DESCRIPTIONS**

- FCS 101      *Introduction to the Profession* – 1 hr. General overview of Family and Consumer Sciences: its areas, history, growth and expansion. Careers are also investigated. **Prerequisite: None.** (Offered Fall)
- HDF 201      *Family Relations* – 3 hrs. A study of human relationships, including dating and mate selection, marriage, family life, and parenting as well as laying the foundation for a fundamental philosophy of productive human interaction. **Prerequisite: None.** (Offered Fall)
- HDF 211      *Child Growth and Development* – 3 hrs. A study of the ontogenesis of human growth and learning from conception to young adulthood. Emphasis is placed on the cause and effect interrelationship between natural growth and maturational processes and environmental forces, influence, and expectations. Special emphasis is placed upon birth to age nine. **Prerequisite: None.** (Offered Spring)
- HDF 212      *Consumer Survival* – 1-3 hrs. A compilation of mini-courses designed to provide an analysis of man's interaction in the family and the environment with special emphasis on relationships, family systems, and resource management. **Prerequisite: None.** (On Hold)

- HDF 302      *Survey of Extension* – 3 hrs. Designed to acquaint students with the basic philosophy, principles, and practices of cooperative extension. Emphasis is also placed on qualifications and responsibilities of cooperative extension personnel. **Prerequisite: None.** (On Hold)
- HDF 303      *Family Theory* – 3 hrs. Theory related to development and functions of families. Attention is also given to family systems that enhance or retard achievement of goals. **Prerequisite: HDF 201.** (Offered Fall, Even Years)
- HDF 304      *Parenting* – 3 hrs. The nature of parenthood and the task of parenting in today’s culture through the various stages of the child’s metamorphosis to maturity and beyond. Incorporates new knowledge, skills, and practices in effective parenting. **Prerequisite: None.** (Offered Fall and Spring)
- HDF 306      *Middle Childhood and Adolescence* – 3 hrs. A study of the child between the ages of nine and eighteen, in all phases of development as the change occurs from child to adult. **Prerequisite: None.** (Offered Fall, Odd Years)
- HDF 307      *Motor-Perceptual Development in Early Childhood* – 3 hrs. A study of how a child learns to perceive through the instrumentality of his or her body. Laboratory experience to be arranged. **Prerequisite: None.** (Offered Fall, Odd Years)
- HDF 308      *Guidance in Prepared Environments* – 3 hrs. A study of direct and indirect guidance where the environment is arranged in such a manner that the equipment and materials facilitate each child’s progress and discovery. **Prerequisite: None.** (Offered Fall)
- HDF 309      *Human Sexuality* – 3 hrs. Principles, practices, and theories of human sexuality, including case studies. An analysis of myths associated with sexual development and interaction. Review of cross-cultural perspectives. **Prerequisite: None.** (On Hold)
- HDF 310      *Infant and Toddler Development* – 3 hrs. Research and new insights in the field of infant and toddler development, the effects of the infant care-giver, interaction, and societal supports. Opportunities for observation and research, including a laboratory which focuses on assessing infant development are included. **Prerequisite: None.** (Offered Fall, Odd Years)
- HDF 311      *Theories of Child and Adolescent Development* – 3 hrs. Current theories and philosophies in the field of human development which shed light on the marvels and mysteries of the human creature in his/her being and becoming are addressed. **Prerequisite: None.** (Offered Spring, Odd Years)
- HDF 312L      *Family Economics and Home Management* – 3 hrs. A study of the management of family resources, including credit, buymanship, and consumer issues. Also includes supervised learning experiences. **Prerequisite: None.** (Offered Spring, Even Years)
- HDF 314      *Family and Society* – 3 hrs. A study of the socialization process of individuals and families in various cultures, North America and abroad, with emphasis on the humanizing or degenerating influences of the twentieth century. **Prerequisite: None.** (Offered Fall and Spring)
- HDF 317      *Child Development Programs and the Community* – 3 hrs. An emphasis on the establishment and implementation of wholesome relationships among the child development program, community, home, and family toward the enhancement of educational opportunities for children. **Prerequisite: None.** (On Hold)
- HDF 318      *Workshop* – 3-6 hrs. Selected topics in Human Development and Family Studies. **Prerequisite: None.** (Offered Fall and Spring )

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- HDF 401 *Family Financial Counseling* – 3 hrs. A study of counseling techniques relevant to the financial planning and economic well-being of the family. **Prerequisite: None.** (Offered Spring, Even Years)
- HDF 402 *Preschool Curriculum Development* – 3 hrs. Opportunities for students to design curricula to meet the needs of preschool children. Special attention is given to language arts, mathematics, and social studies concepts. **Prerequisite: HDF 211.** (Offered Spring)
- HDF 410 *Readings and Research in Human Development and Family Studies* – 3 hrs. An exploration into the writings and research of well-known contributors to the study of human development and the family. **Prerequisite: Junior or senior standing.** (Offered Spring, Odd Years)
- HDF 411 *Infant Programs* – 3 hrs. A study of the organization and implementation of infant programs with emphasis on planning for cognitive, psychomotor and social development. **Prerequisite: HDF 211.** (Offered Spring)
- HDF 412 *Independent Study* – 1-3 hrs. This course provides an opportunity for students to pursue an avenue of special interest to the student and experience some creative expressions in response to the work of others. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- HDF 413 *Behavior Management in the School* – 3 hrs. The study of the basic understanding of children’s behavior, based on age/stage characteristics. Provides theoretical understanding and practical applications of child guidance techniques in group settings. **Prerequisite: PSY 201.** (Offered Fall)
- HDF 415 *Assessment in Human Development and Family* – 3 hrs. An analysis and evaluation of individual screening and assessment instruments for use with individuals and families throughout the life cycle. **Prerequisite: PSY 201.** (Offered Spring, Odd Years)
- HDF 416 *Program Development* – 3 hrs. An emphasis on scope, organization, implementation, and evaluation of programs for community and cooperative extension. Methods and techniques of designing program materials are also included. **Prerequisite: None.** (Offered Spring, Odd Years)
- HDF 444 *Internship* – 6 hrs. Organized opportunities for students to gain work experience in traditional and nontraditional occupations. Permission of advisor is necessary. **Prerequisite: Advanced junior or senior status.** (Offered Fall, Spring)
- FCS 303 *Career Technical/FCS Education* – 3 hrs. A survey of career technical programs as taught in secondary schools with special emphasis on Family and Consumer Sciences. State required occupational practicum must be culminated during this course. **Prerequisite: FCS 101.** (Offered Fall, Odd Years)
- FCS 401 *Family and Consumer Sciences Education* – 3 hrs. Planning and implementation of curricula in secondary schools and community programs. Making use of innovations and technology in the teaching-learning process. It also provides for the development and use of appropriate evaluation tools and techniques. **Prerequisites: FCS 101 and FCS 303.** (Offered Fall, Even Years)
- FCS 495 *Directed Teaching and Seminar* – 12 hrs. Supervised observation and teaching in a secondary school. A critical analysis of classroom problems and activities provides major topics of the seminar. **Prerequisites: FCS 101, FCS 303, and FCS 401.** (Offered Fall and Spring)
- FCS 411 *Honors Courses in Family and Consumer Sciences* – 3 hrs. A special problems course for academically accelerated students. Exploration of issues and trends in specialized areas, with some opportunity for research provided. Open to majors. **Prerequisites: Senior standing and G.P.A. of 3.3 or above.** (On Hold)

FCS 420

*Senior Seminar* – 1 hr. Assists students in fusing the various aspects of Family and Consumer Sciences into a meaningful whole through the study of relevant issues and interaction with professionals. Personal and professional skills needed for success in students' chosen careers are stressed. **Prerequisite: Senior status.** (Offered Fall and Spring)

## **NUTRITION AND HOSPITALITY MANAGEMENT PROGRAM AREA**

110 Carver Complex - Bonner Wing  
(256) 372-5440

### **PURPOSE AND ORGANIZATION**

The Nutrition and Hospitality Management Program is designed for students who possess a strong interest in the sociological, psychological, physiological, and economical aspects of food as it relates to nutritional status and world hunger. The program provides a broad education in the science of nutrition and preparation of food as related to lifestyles, cultures, and health.

The two options within the Nutrition and Hospitality Management program are General Dietetics and Hospitality Management. The General Dietetics option is approved as a Didactic Program in Dietetics (DPD) by the American Dietetic Association (ADA) and qualifies the student for admission to an accredited Dietetic Internship or an Approved Pre-professional Practice Program (AP4) to become a registered dietitian. The DPD Program is approved by the Commission on Accreditation for Dietetics Education (CADE) of The American Dietetic Association, 120 South Riverside Plaza, Chicago, Suite 2000, Illinois 60606-6995; Phone Number (312) 899-4875. In addition, the curriculum offers excellent training to meet the demands of private industry, hospitals, government, educational institutions, hotels/motels, and restaurants.

### **OBJECTIVES**

The objectives of the program in Nutrition and Hospitality Management are to:

1. prepare nutrition professionals with the necessary credentials to meet the needs of industry, government, education, medical facilities and graduate study;
2. prepare students to successfully compete for accredited dietetic internships or approved pre-professional practice programs;
3. provide nutrition resource information to consumers;
4. prepare managers to meet the needs of the food and lodging industry;
5. conduct basic and applied research to increase the students' knowledge base in Nutrition and Hospitality Management.

### **PROGRAM REQUIREMENTS**

In addition to the academic course requirements, all students majoring in Nutrition and Hospitality Management must gain practical experience before graduating from Alabama A&M University. All majors must complete the requirements for NHM 402L, Nutrition and Hospitality Management Internship.



## NUTRITION AND HOSPITALITY MANAGEMENT MAJOR

### Hospitality Management Concentration

128 Credit Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	<sup>2</sup> ENG 102 Composition II	3
<sup>1</sup> ENG 101 Composition I	3	BIO 102 General Biology II	3
MTH 112 Pre Calculus Algebra	3	BIO 102L General Biology II Lab	1
BIO 101 General Biology I	3	ART 101 Art Appreciation <b>or</b>	3
BIO 101L General Biology I Lab	1	MUS 101 Music Appreciation	3
HIS 101 World History I	3	NHM 102L Principles of Nutrition	3
NHM 103 Nutrition Today	2	NHM 202 Intro. to Hospitality Mgmt.	<u>3</u>
FCS 101 Intro. to the Profession	<u>1</u>		16
	17		

<sup>1</sup>ENG 103 may be taken by international students

<sup>2</sup>ENG 104 may be taken by international students.

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I <b>or</b>	3	ENG 204 World Literature II <b>or</b>	3
ENG 201 Survey of English Lit. I	3	ENG 202 Survey of English Lit. II	3
CHE 111 Applied Chemistry I	3	CHE 112 Applied Chemistry II	3
CHE 111L Applied Chemistry I Lab	1	CHE 112L Applied Chemistry Lab	1
ECO 200 Basic Economics	3	SOC 201 Sociology <b>or</b>	3
NHM 201L Science of Food Prep.	4	HDF 201 Family Relations	3
PSY 201 General Psychology	<u>3</u>	NHM 301L Food Service Operations	3
	17	MDT 252 Auto CAD for Apparel <b>or</b>	3
		AGB 199 Computers in Agriculture	3
		PED Physical Education Activity	<u>1</u>
			17

#### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
HDF 314 Family & Society	3	ENG 205 General Speech	3
MKT 306 Principles of Marketing	3	OSM 310 Business Communications	3
ACC 203 Intro. to Accounting I	3	ACC 204 Intro. to Accounting II	3
NHM 206 Facilities Planning	3	Hospitality Electives	<u>6</u>
NHM 302L Food Service Operations II	<u>3</u>		15
	15		

#### Summer

FAS 312 Food Service Health Mgmt. 1

#### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
BUS 307 Legal Environment & Ethics	3	FIN 313 Business Finance	3
MGT 326 Labor Management Relations	3	MGT 433 Human Resource Mgmt.	3
NHM 403 Quantity Food Mgmt.	3	NHM 402L Nutrition & Hospitality	
NHM 414 Hospitality Mgt. Seminar	1	Management Internship	4
Hospitality Electives	<u>6</u>	NHM 409L Experimental Foods	3
	16	FCS 420 Senior Seminar	<u>1</u>
			14

**NUTRITION AND HOSPITALITY MANAGEMENT MAJOR****General Dietetics Concentration**

134 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II	3
<sup>1</sup> ENG 101 Composition I	3	BIO 101 General Biology I	3
HIS 101 World History I	3	BIO 101L General Biology I Lab	1
NHM 103 Nutrition Today	2	CHE 101 General Chemistry I	3
ART 101 Art Appreciation <b>or</b>	(3)	CHE 101L General Chemistry I Lab	1
MUS 101 Music Appreciation	(3)	NHM 102L Principles of Nutrition	3
FCS 101 Intro. to the Profession	1	MTH 113 Pre Calculus Trigonometry	<u>3</u>
MTH 112 Pre Calculus Algebra	<u>3</u>		17
	16		

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I <b>or</b>	(3)	ENG 204 World Literature II <b>or</b>	(3)
ENG 201 Survey of English Literature I	(3)	ENG 202 Survey of English Lit. II	(3)
BIO 102 General Biology II	3	BIO 330 Microbiology	3
BIO 102L General Biology II Lab	1	BIO 330L Microbiology Lab	1
CHE 102 General Chemistry II	3	CHE 301 Organic Chemistry I	3
CHE 102L General Chemistry II Lab	1	CHE 301L Organic Chemistry Lab	1
ECO 200 Basic Economics	3	HDF 314 Family and Society	3
PED Phys. Ed. Activity	1	PED Phys. Ed. Activity	<u>1</u>
NHM 201L Science of Food Preparation	<u>4</u>		15
	19		

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 205 General Speech	3	BIO 222 Human Anatomy & Phys. II	3
BIO 221 Human Anatomy & Phys. I	3	BIO 222L Human Anat. & Phys. II Lab	1
BIO 221L Human Anatomy & Phys. I Lab	1	OSM 310 Business Communications II	3
PSY 201 General Psychology <b>or</b>	(3)	FAS 453L Agricultural Biochemistry	4
SOC 201 Intro. to Sociology	(3)	NHM 306L Maternal & Child Nutrition	3
NHM 302L Food Service Operations II	3	NHM 405L Advanced Human Nutrition	<u>3</u>
CHE 302 Organic Chemistry II	3		17
CHE 302L Organic Chemistry II Lab	<u>1</u>		
	17		

**Summer**

NHM 402L Nut. &amp; Hosp Mgmt. Internship 4

**Senior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
AGB 199 Computers in Agriculture <b>or</b>	(3)	MGT 433 Human Resource Mgmt.	3
MDT 252 Auto CAD for Apparel	(3)	FCS 420 Senior Seminar	1
MGT 315 Principles of Management	3	NHM 408L Diet Therapy II	3
PSY 403 Educational Psychology	3	NHM 409L Experimental Foods	3
FAS 403 Food Science Seminar	1	NHM 410 Community Nutrition	<u>3</u>
NHM 407 Diet Therapy I	3		13
SPS 430 Biometry	<u>3</u>		
	16		

## Hospitality Management Electives:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
NHM 304	Professional Beverage Management	3
NHM 309L	Professional Baking	3
NHM 310	Travel, Tourism, and Resort Management	3
NHM 312L	Buffets and Banquets	3
NHM 406L	International Cuisine and Catering	3
NHM 411	Housekeeping Operation	3
NHM 412	Special Problems	1-3
MKT 308	Salesmanship	3
ACC 319	Managerial Accounting	3

## NUTRITION AND HOSPITALITY MANAGEMENT MINOR

Non-majors desiring a minor in Nutrition or Hospitality Management must meet the requirements of 18 semester hours in Nutrition and Hospitality Management. From the listing below, students may select a concentration through consultation with faculty in the area.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
*NHM 102L	Principles of Nutrition	3
*NHM 201L	Science of Food Preparation	4
NHM 202	Introduction to Hospitality Management	3
NHM 206L	Facilities Planning	3
NHM 301L	Food Service Operations 1	3
NHM 302L	Food Service Operations II	3
NHM 304	Professional Beverage Management	3
NHM 306L	Maternal & Child Nutrition	3
NHM 309L	Professional Baking	3
NHM 310	Travel, Tourism, and Resort Management	3
NHM 312L	Buffets and Banquets	3
NHM 402L	Nutrition and Hospitality Management Internship	4
NHM 403	Quantity Food Management	3
NHM 404L	Nutrition for Early and Middle Childhood	3
**NHM 405L	Advanced Human Nutrition	3
NHM 406L	International Cuisine and Catering	3
NHM 407	Diet Therapy I	3
NHM 408L	Diet Therapy II	2
NHM 410	Community Nutrition	3
NHM 411	Housekeeping Operations	3
NHM 412	Special Problems	1-3

\*Required

\*\*A strong chemistry background is required.

## COURSE DESCRIPTIONS

NHM 102L *Principles of Nutrition* – 3 hrs. Two, 1-hour lectures and one, 2-hour lab per week A study of nutrients and their application in the selection of food to meet the nutritional needs of family members. **Prerequisite: None.** (Offered Fall and Spring)

NHM 103 *Nutrition Today* – 2 hrs. A study of nutrients and their application to the selection of food to meet the nutritional needs of the individual. Emphasis is placed on nutrition, food, general health concerns, and wellness as related to the consumer. **Prerequisite: None.** (Offered Fall and Spring)

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- NHM 201L *Science of Food Preparation* – 4 hrs. Three, 1-hour lectures and one, 2-hour lab per week. Scientific concepts of basic food cookery integrated into menu planning, preparation, and service of meals. Nutrition and economy of time and cost are emphasized. **Prerequisite:** NHM 102L. (Offered Fall)
- NHM 202 *Introduction to Hospitality Management* – 3 hrs. An introduction to the history of the hotel/motel, restaurant, travel, and tourism industry. The overview will cover the historical development of the industry and the major functions performed in the various types of establishments or operations. **Prerequisite None.** (Offered Fall)
- NHM 206L *Facilities Planning I* – 3 hrs. Two, 1-hour lectures and one, 2-hour lab per week. Planning of food service facilities with an emphasis on human engineering, layout, design, selection of equipment, and management planning decisions. **Prerequisite: None.** (Offered Fall)
- NHM 301L *Food Service Operations I* – 3 hrs. Two, 1-hour lectures and one, 3-hour lab per week. Basic principles of purchasing food and beverages, as well as non-food items, with particular attention to product identification and to the receiving, storing, and issuing sequence. Planning, selling, producing, and serving a weekly meal employing learned information is an integral part of this course. **Prerequisite: NHM 201L.** (Offered Spring)
- NHM 302L *Food Service Operations II* – 3 hrs. Two, 1-hour lectures and one, 3-hour lab per week. A continuation of NHM 301L with management of production and service for various types of food service operations included. **Prerequisite: NHM 301L.** (Offered Fall)
- NHM 304 *Professional Beverage Management* – 3 hrs. A study of beverage systems, procurement, handling, and controls of beverages, related legislation and beverage accounting. Course will also include familiarization with equipment, design of facilities, and mixology. **Prerequisite: None.** (Offered Fall, Odd Years)
- NHM 306L *Maternal and Child Nutrition* – 3 hrs. Three, 1-hour lectures and one, 1-hour lab per week. Application of the basic principles of nutrition to the dietary needs for the child and mother from conception through the adolescent period. Emphasis is placed on the relationship of diet to the growth and development of the infant and child. **Prerequisite: NHM 102L.** (Offered Spring, Even Years)
- NHM 309L *Professional Baking* – 3 hrs. Two, 1-hour lectures and one, 3-hour lab per week. The basic principles and techniques of professional baking will be emphasized throughout the course. The skills acquired will prepare students for the field of baking. **Prerequisite: NHM 201L.** (Offered Spring, Even Years)
- NHM 310 *Travel, Tourism, and Resort Management* - 3 hrs. A study of travel, tourism and resort management with emphasis on concepts, terminology, demographics, financial significance, and current trends. Course will also evaluate the economic, social, and political impact of travel and tourism. **Prerequisite: None.** (Offered Fall, Even Years)
- NHM 312L *Buffets and Banquets* – 3 hrs. :Two, 1-hour lectures and one, 3-hour lab per week. An exploration of the sophisticated world of buffets and banquets, including planning, preparation, and service. **Prerequisite: None.** (Offered Spring, Odd Years)
- NHM 402L *Nutrition and Hospitality Management Internship* – 4 hrs. Organized opportunities for work experience in facilities related to nutrition, dietetics, or hospitality management. Experiences are under the direction of professionals in the field. This experience will be completed preferably during the summer between the junior and senior years. Upon completion of the experience, an oral seminar presentation must be given by the student. **Prerequisites: NHM 405L, NHM 407, and NHM 408L (Dietetics majors); NHM 201L, NHM 301L, 302L (Hospitality majors).** (Offered Fall, Spring, and Summer)

- NHM 403 *Quantity Food Management* – 3 hrs. A study of quantity food cookery and management problems as they pertain to commercial, industrial, and other institutional food services. Merchandising menus, variety in menu planning, and food preferences of customers will be included. Students will have an opportunity for study and laboratory experiences in management of food preparation and services in a cafeteria. **Prerequisite: None.** (Offered Fall)
- NHM 404L *Nutrition for Early and Middle Childhood* – 3 hrs.: Two, 1-hour lectures and one, 2-hour lab per week. Course designed to acquaint teachers of young children with basic nutritional principles and their applications for nutrition education. Emphasis is placed on methods and techniques for teaching nutrition to young children. **Prerequisite: None.** (Offered Fall and Spring)
- NHM 405L *Advanced Human Nutrition* – 3 hrs. Two, 1-hour lectures and one, 2-hour lab per week. A study of the physiological and chemical factors involved in the absorption and metabolism of food nutrients. **Prerequisites: CHE 302, CHE 302L, BIO 221, BIO 221L, BIO 222, BIO 222L, NHM 102, and FAS 453L.** (Offered Spring)
- NHM 406L *International Cuisine and Catering* – 3 hrs.: Two, 1-hour lectures and one, 3-hour lab per week. An introduction to special foods of various countries and the techniques used to prepare authentic menus. Preparation and management of catering will also be covered in the course. **Prerequisite: None.** (Offered Spring, Even Years)
- NHM 407 *Diet Therapy I* – 3 hrs. A study of the modification of normal diets in the applications of nutrition therapy. **Prerequisite: NHM 405L.** (Offered Fall)
- NHM 408L *Diet Therapy II* – 3 hrs.: Two, 1-hour lectures and one, 3-hour lab per week. Practical experience in clinical dietetics and in the community, i.e., hospitals, dialysis units, nursing homes, etc. **Prerequisite: NHM 407.** (Offered Fall)
- NHM 409L *Experimental Foods* – 3 hrs.: Two, 1-hour lectures and one, 3-hour lab per week. A senior level course designed to acquaint students with the experimental study of foods, relative to why food is handled and prepared in a certain manner, the significance of the effects of variations in treatments on food quality, and how this knowledge can be used to improve the quality of food products. **Prerequisite: NHM 201L.** (Offered Spring)
- NHM 410L *Community Nutrition* – 3 hrs.: Two, 1-hour lectures and one, 3-hour lab per week. A study of the nutritional needs of a community. The exploration, identification, and analysis of nutritional needs of various target groups: schools, elderly, limited income, etc. **Prerequisite: NHM 102L.** (Offered Spring, Odd Years)
- NHM 411 *Housekeeping Operations* – 3 hrs. A course designed in three parts: (1) managing within the housekeeping profession, (2) planning, organizing, and staffing new organizations, and (3) directing and controlling ongoing housekeeping operations. **Prerequisite: None.** (Offered Spring, Odd Years)
- NHM 412 *Special Problems* – 1-3 hrs. A detailed advanced study selected from the field of nutrition, food service, or the lodging industry. Students must identify and complete research or independent study under the guidance of an advisor. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- NHM 414 *Hospitality Management Seminar* – 1 hr. A study and discussion of current trends and problems in the hospitality industry. **Prerequisite: Senior classification.** (Offered Fall, Spring, and Summer)

**DEPARTMENT OF FOOD AND ANIMAL SCIENCES**

125-A Carver Complex Thomas Wing  
(256) 372-5445

**INTRODUCTION**

The Department of Food and Animal Sciences offers B.S. degree programs in Food Science and Technology, and Animal Science. The Department also offers Master of Science and Doctor of Philosophy programs in Food Science. An extensive research program provides unique opportunities for undergraduate students enrolled in the department to gain valuable practical experience in their chosen field of study.

**PROGRAM OFFERINGS**

The major in Food Science and Technology, which is certified by the Institute of Food Technologists (IFT), was developed to train individuals to meet the needs of the food industry and other agencies for competent food technologists and research-oriented personnel. It provides a broad educational background in the science and technology of food. The curriculum has been made sufficiently flexible to meet the needs and interests of individual students by permitting a selection of minors within the framework of the recommended program. Students selecting a minor field of study should select a minimum of 18 hours in a minor area, of which 6 hours must be at 300 level or above.

The major in Animal Science prepares the student for positions in the feed and pharmaceutical industries, with government agencies as inspectors or consultants, as farm managers, and for positions with financial institutions or real estate firms. The curriculum provides a strong background in the art and science of farm animal production and management and also prepares students for entry to veterinary colleges. The minor options allow selection of appropriate supporting courses for the student's areas of interest including Chemistry, Agribusiness and Food Science.

**STUDENT/PROFESSIONAL ORGANIZATIONS**

Alpha Zeta Honorary Society  
Block and Bridle Club  
Food Science Club  
Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS)  
Phi Tau Sigma Honor Society

Participation in student organizations is encouraged as this provides opportunities for networking and exposure to your chosen professional area.

**FINANCIAL ASSISTANCE/SCHOLARSHIPS**

In addition to that provided by federal and state governments, and AAMU institutional aid programs, the School of Agricultural and Environmental Sciences, and the Department of Food and Animal Sciences offers financial assistance and scholarship awards. Students may also qualify for Institute of Food Technologists awards and other professional organizations' scholarship programs.

## GRADUATION REQUIREMENTS

In order to graduate with a B.S. degree in Food Science and Technology or Animal Science, a student must officially declare one of the above referenced programs as a major and complete all courses as outlined in the curriculum with a minimum cumulative grade point average of 2.0. Candidates must also complete all core courses in the major with a grade of C or better in each course.

### FOOD SCIENCE AND TECHNOLOGY MAJOR WITH MINOR IN CHEMISTRY

131 Credits Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	<sup>2</sup> ENG 102 Composition II	3
<sup>1</sup> ENG 101 Composition I	3	MTH 113 Pre-Calculus Trigonometry	3
MTH 112 Pre-Calculus Algebra	3	BIO 103 Principles of Biology	3
CHE 101 General Chemistry I	3	BIO 103L Principles of Biology Lab	1
CHE 101L General Chemistry I Lab	1	CHE 102 General Chemistry II	3
FAS 102 Intro. To Food Science	<u>3</u>	CHE 102L General Chemistry II Lab	1
	14	FAS 101 Foods for Life	<u>2</u>
			16

<sup>1</sup>ENG 103 may be taken by international students

<sup>2</sup>ENG 104 may be taken by international students

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I	3	ENG 204 World Literature II	3
HIS History	3	MTH 125 Calculus I	4
AGB 199 Computers in Agriculture	3	HIS History	3
ART 101 Art Appreciation <b>or</b>	(3)	FAS 351 Nutrition & Metabolism	3
MUS 101 Music Appreciation	(3)	CHE 221 Analytical Chemistry	3
<sup>3</sup> Social Science	<u>3</u>	CHE 221L Analytical Chemistry Lab	<u>1</u>
	15		17

<sup>3</sup>UPL 103, PSY 201, SOC 201, PHL 201, or GEO 213

#### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MTH 126 Calculus II	4	ENG 205 General Speech	3
BIO 330 Microbiology	3	PHY 103 General Physics I	4
BIO 330L Microbiology Lab	1	FAS 306 Sensory Evaluation	3
CHE 301 Organic Chemistry I	3	CHE 302 Organic Chemistry II	3
CHE 301L Organic Chemistry I Lab	1	CHE 302L Organic Chemistry II Lab	1
ECO 200 Basic Economics	3	FAS 453L Agricultural Biochemistry	<u>4</u>
FAS 402 Meat Science & Tech. <b>or</b>	(3)		18
FAS 422 Poultry Products Tech.	<u>(3)</u>		
	18		

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

**Senior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
SPS 430 Biometry	3	FAS 403 Seminar	1
FAS 401L Food/Microbiology	4	FAS 408L Food Analysis	4
FAS 407L Food Chemistry	4	FAS Elective	3
FAS 461L Food Engineering	4	FAS 472L Food Processing	4
FAS 450 Regulations of Food Safety	<u>3</u>	FAS 490 Food Science Capstone	<u>3</u>
	18		15

Students taking additional minors must take extra courses as indicated below.

<u>Minor</u>	<u>Total Hours</u>	<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
<b>Animal Science</b>	129	FAS 112	Introduction to Animal Science	3
		FAS 352	Feeds and Feeding	3
		FAS 353	Animal Breeding and Genetics	3
		FAS	FAS Electives	6
<b>Business</b>	135	ACC 203	Introduction to Accounting I	3
		ACC 204	Introduction to Accounting II	3
		MKT 306	Principles of Marketing	3
		ECO 223	Principles of Economics	3
		MGT 315	Principles of Management	3
		BUS	BUS Electives	6
<b>Nutrition</b>	135	NHM 102	Principles of Nutrition	3
		NHM 201	Science of Food Preparation	3
		NHM 405L	Advanced Human Nutrition	3
		NHM	*Electives	9

\*3 hrs. of FAS elective may be substituted by 3 hrs. of NHM elective

\*NHM electives: NHM 306, 407, 408L, 409L and 410

**Electives**

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
FAS 442	Fruits, Vegetables, Cereal Products	3
FAS 405	Special Problems	2-3
FAS 312	Food Service Health Management	1
FAS 112	Introduction to Animal Science	3



## ANIMAL SCIENCE MAJOR WITH MINOR IN CHEMISTRY

132 Credits Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	FAS 101 Foods for Life	2
<sup>1</sup> ENG 101 Composition I	3	<sup>2</sup> ENG 102 Composition II	3
MTH 112 Pre-Calculus Algebra	3	MTH 113 Pre-Calculus Trig.	3
CHE 101 General Chemistry I	3	HIS History	3
CHE 101L General Chemistry I Lab	1	CHE 102 General Chemistry II	3
FAS 112 Intro. To Animal Science	<u>3</u>	CHE 102L General Chemistry II Lab	<u>1</u>
	14		15

<sup>1</sup>ENG 103 may be taken by international students.

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FAS 102 Intro. to Food Sciences	3	ENG 204 World Literature II	3
ENG 203 World Literature I	3	HIS History	3
BIO 103 Principles of Biology	3	ART 101 Art Appreciation <b>or</b>	(3)
BIO 103L Principles of Biology Lab	1	MUS 101 Music Appreciation	(3)
FAS Elective	3	AGB 199 Computers in Agriculture	3
CHE 221 Analytical Chemistry I	3	FAS 352 Feeds and Feeding	3
CHE 221L Analytical Chemistry I Lab	<u>1</u>	FAS Elective	<u>3</u>
	17		18

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 205 General Speech	3	PHY 103 General Physics I	4
MTH 125 Calculus I	4	ECO 200 Basic Economics	3
CHE 301 Organic Chemistry I	3	AGB 322 Farm Management	3
CHE 301L Organic Chemistry I Lab	1	FAS 351 Nutrition & Metabolism	3
<sup>3</sup> Social Science	3	CHE 302 Organic Chemistry II	3
FAS 325 Fundamentals of Poultry Sci.	<u>3</u>	CHE 302L Organic Chemistry II Lab	<u>1</u>
	17		17

<sup>3</sup>UPL 103, PSY 201, SOC 201, PHL 201, or GEO 213

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
SPS 430 Biometry	3	FAS 492 Animal Science Capstone	3
FAS 353 Animal Breeding & Genetics	3	FAS 408L Food Analysis	4
FAS 403 Seminar	1	FAS 453L Agricultural Biochemistry	4
FAS 430L Reproductive Physiology	4	FAS 405 Special Problems	3
FAS Elective	3	FAS Elective	<u>3</u>
FAS 353 Beef Cattle Production	<u>3</u>		17
	17		

Students taking minors in Agribusiness must take courses as indicated below.

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

<u>Minor</u>	<u>Total Hours</u>	<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
<b>Agribusiness</b>	131	AGB 423	Agricultural Marketing in place of CHE 301 and CHE 301L	3
		AGB 425	Agricultural Policy in place of MTH 125	3
		AGB 333	Commodity Marketing in place of PHY 103	3
		AGB 421	Agribusiness Management	3
		AGB 422	Agricultural Financing	3
<b>Food Science</b>	137	BIO 330	Microbiology	3
		BIO 330L	Microbiology Lab (Both above courses in place of AGB 322 Farm Management)	3
		FAS 401L	Food Microbiology	4
		FAS 407L	Food Chemistry	4
<b>Electives</b>		FAS 311	Fundamentals of Dairy Science	3
		FAS 325	Fundamentals of Poultry Science	3
		FAS 326	Poultry Production & Management	3
		FAS 354	Beef Cattle Production	3
		FAS 355	Livestock Judging	3
		FAS 356	Swine Production	3
		FAS 405	Special Problems	2-3
		FAS 312	Food Service Health Management	1
		FAS 450	Regulations of Food Safety	3

### COURSE DESCRIPTIONS

While every effort is made to offer courses as indicated in the course descriptions, it sometimes becomes necessary to cancel courses. In the event of course cancellation, students should consult their academic advisors for selection of alternate courses.

- FAS 101     *Foods for Life* – 2 hrs. The study of most common information regarding food and its role in human society. **Prerequisite: None.** (Offered Fall and Spring)
- FAS 102     *Introduction to Food Science* – 3 hrs. Food science and its relation to agriculture; opportunities in the various fields of food industry; trends in procurement, management, processing, distribution and utilization of food; food raw materials and constituents; biochemical aspects of food composition; food spoilage; and principles of food processing and preservation are covered. **Prerequisite: None.** (Offered Fall)
- FAS 112     *Introduction to Animal Science* – 3 hrs. An introduction to the total animal industry covering dairy and beef cattle, swine, poultry, sheep, goats, rabbits, and horses. The material is divided by topics such as nutrition, reproduction, breeding, genetics, milk secretion, markets, meat processing and others, which include consideration of all species. Students will develop an appreciation for animal science and the application of sound business principles. **Prerequisite: None.** (Offered Fall)
- FAS 306     *Sensory Evaluation* – 3 hrs. A study of principles and methodology of sensory evaluation; application of methods; instrumentation in physical evaluation of food; and analysis of sensory and instrumental data. **Prerequisite: FAS 102.** (Offered Spring)

- FAS 311 *Fundamentals of Dairy Science* – 3 hrs. Introduction to the fundamentals of dairy industry in the United States. Types of dairy farms, selection and breeding; raising and managing dairy calves and heifers; care and management of cows and sires; and factors influencing the quantity and quality of milk and milk products are addressed. Labor-saved devices and practices used to develop economical and efficient herd management will be presented. **Prerequisite:** FAS 112. (Offered Spring)
- FAS 312 *Food Service Health Management* – 1 hr. Short course offered through Madison County Health Authorities for Food Service Managers certification with 14 hours classroom contact. Course is designed to give managers and owners the skills to find the food-borne illness hazards in their operations. Students are introduced to a system, which utilizes policies, procedures and standards designed to prevent recurring problems. Basic sanitation management principles will be discussed. After completing the course, participants will be prepared to develop or upgrade their food safety program using HACCP (Hazard Critical Control Procedure) concepts. **Prerequisite:** None. (Offered Fall, Spring, and Summer)
- FAS 325 *Fundamentals of Poultry Science* – 3 hrs. Basic course in poultry science that involves principles and practices in production and marketing of poultry and poultry products in a highly specialized industry. Practice consists of hands-on application of basic skills required for efficient production and management. **Prerequisite:** FAS 112. (Offered Fall)
- FAS 326 *Poultry Production & Management* – 3 hrs. A comprehensive study of various management practices, including brooding of broiler and replacement pullets, management of layers and other classes of poultry such as turkeys, geese, ducks, and so forth. Emphasis will also be given to current practices in the poultry industry through visits to area commercial operators. Nutrition and disease management will also be addressed. **Prerequisite:** FAS 325. (Offered Spring)
- FAS 351 *Nutrition and Metabolism* – 3 hrs. Introduction to nutrient digestion and metabolism in monogastrics and ruminants. The students will become acquainted with physiological and biochemical mechanisms of nutrient utilization. **Prerequisites:** CHE 102, CHE 102L, BIO 103, and BIO 103L. (Offered Spring)
- FAS 352 *Feeds and Feeding* – 3 hrs. Introduction to livestock feeds and their utilization in meeting the nutrient requirements of animals producing meat, milk fiber, and eggs. The student will become acquainted with ration formulation and laboratory procedures for determining feed composition. **Prerequisite:** FAS 112. (Offered Fall)
- FAS 353 *Animal Breeding & Genetics* – 3 hrs. Concepts and principles of genetics applied to animal breeding, including Mendelian inheritance, gametogenesis, molecular genetics, modes of gene action, inheritability estimation, progeny testing methods, inbreeding and outbreeding systems, and recent advances in animal genetic engineering. **Prerequisites:** BIO 103, BIO 103L, and FAS 112. (Offered Fall)
- FAS 354 *Beef Cattle Production* – 3 hrs. Consideration of basic principles and methods of application involved in breeding, feeding, management, diseases, and marketing of beef producing animals. **Prerequisite:** FAS 112. (Offered Fall)
- FAS 355 *Livestock Judging* – 3 hrs. Theoretical and practical techniques relative to the selection of farm animals based on their physical attributes, the intent of which is to acquire the ability to recognize superior animals for breeding purposes and to recognize those animals that will be outstanding producers of meat and milk for human consumption. **Prerequisite:** FAS 112. (Offered Fall)
- FAS 356 *Swine Production* – 3 hrs. Study of the basic principles and their practical application in efficient pork production. All areas of production, breeding, selection, nutrition, housing, equipment, marketing, herd health, and economic management are included. **Prerequisite:** FAS 112. (Offered Spring)

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- FAS 401L *Food Microbiology* – 4 hrs. A course on theoretical and practical studies of the role of microorganisms in foods pertaining to processing, preservation, quality, product development and spoilage. Also, this course acquaints students with quantitative and qualitative microbial evaluation techniques applicable to the food industry. **Prerequisites: BIO 330 and BIO 330L.** (Offered Fall)
- FAS 402 *Meat Science & Technology* – 3 hrs. Theoretical and practical aspects of slaughtering, dressing, cutting, and processing of beef, pork, and lamb. Selection, identification, and utilization of wholesale and retail cuts, as well as principles of processing and preservation of meat products are covered. Various methods of studying and evaluating meat characteristics and composition are also included. **Prerequisites: FAS 102 and Junior standing.** (Offered Fall)
- FAS 403 *Seminar* – 1 hr. A review and discussion of current literature in food science, food and nutrition, or animal science areas. **Prerequisites: Senior standing.** (Offered Fall and Spring)
- FAS 405 *Special Problems* – 2-3 hrs. A detailed experimental study of a chosen problem in food science, animal science, or related science areas. **Prerequisite: Senior standing or consent of instructor.** (Offered Fall, Spring, and Summer)
- FAS 407L *Food Chemistry* – 4 hrs. Composition, structure, and functional properties of food constituents and their contributions to the physical, organoleptic, and nutritive characteristics of food products, as well as the chemical reactions occurring during food processing, storage and utilization by man are addressed. Laboratory experience is integrated with this content. **Prerequisite: FAS 453L.** (Offered Fall)
- FAS 408L *Food Analysis* – 4 hrs. The use of physical and chemical methods of analyzing foods and their application to the food and feed industry. Students apply principles to projects in a laboratory session. **Prerequisite: FAS 407L.** (Offered Spring)
- FAS 422 *Poultry Products Technology* – 3 hrs. Procurement, processing, packaging and distribution of poultry products, and factors affecting quality, their identification and control, quality maintenance, and storage are addressed. **Prerequisite: Senior standing.** (Offered Fall)
- FAS 430 *Physiology of Reproduction* – 4 hrs. Study of early fetal development and differentiation of the gonads and secondary sex organs. Anatomy and physiology of male and female reproductive tracts, endocrinology of reproduction, fertilization, cleavage and implantation, pregnancy diagnosis and parturition, causes of reproductive failure, and the use of artificial insemination and embryo transfer to improve reproductive efficiency are addressed in this course. **Prerequisite: Senior standing.** (Offered Spring)
- FAS 432 *Fruits, Vegetables, & Cereal Products Technology* – 3 hrs. A course to provide students with an integrated understanding of basic principles in relation to storage, preservation and utilization of fruits, vegetables, and cereals. Experience is provided in developing appropriate information and applying it to the decision making process in food industry situations. **Prerequisite: Senior standing.** (Offered Spring)
- FAS 450 *Regulations of Food Safety and Quality* – 3 hrs. The study of the history of food law; steps in establishing food laws; food laws and regulation; various agencies involved in enforcing food quality; and product quality evaluation methods will be presented to set forth examples of producers', processors', consumers' and regulators' concerns in maintaining food quality levels. **Prerequisite: Consent of instructor.** (Offered Spring)
- FAS 453L *Agricultural Biochemistry* – 4 hrs. An introduction to the fundamentals of biochemistry with emphasis on food and plant biochemistry. The laboratory deals with basic techniques in biochemical analyses. A laboratory session adds practical experience to the theory taught. **Prerequisites: CHE 202, CHE 202L, CHE 301, and CHE 301L.** (Offered Spring)

- FAS 461L *Food Engineering* – 4 hrs. Fundamentals of heat transfer, fluid flow, evaporation, drying, and other unit operations in food processing industries will be presented. Students will be acquainted with application of engineering principles and concepts to the processing of foods. An integrated laboratory session provides demonstration of principles. Prerequisites: **PHY 103 and MTH 126.** (Offered Fall)
- FAS 472L *Food Processing* – 4 hrs. A course involving the integration of basic principles and practices of unit operation for food processing and preservation. Practical experience in food processing is afforded by an integrated laboratory period. **Prerequisite: FAS 461L.** (Offered Spring)
- FAS 490 *Food Science Capstone* – 3 hrs. A senior level course which incorporates and unifies the principles of food chemistry, food microbiology, food engineering, food processing, nutrition, sensory analysis and statistics. **Prerequisite: All core courses in Food Science.** (Offered Spring)
- FAS 492 *Animal Science Capstone* – 3 hrs. A senior level course incorporating and unifying the principles of animal breeding, genetics, animal nutrition, biology and chemistry with livestock production and care. **Prerequisite: All core courses in Animal Science.** (Offered Spring)

**DEPARTMENT OF PLANT AND SOIL SCIENCE**

224 Carver Complex Thomas Wing Annex  
256-372-5462

**INTRODUCTION**

The Department of Plant and Soil Science offers degree programs in Plant Science, Environmental Science, and Forestry. Students who choose to pursue their degree in Plant Science may specialize in either Horticulture or Crop Science majors. In the Environmental Science degree program, students can specialize in Soil Science or Environmental Science majors. Students who choose a degree in Forestry have the option to specialize in Forest Management or Forest Science. Further specialization or emphasis areas within these programs may be selected, with the help of a departmental advisor. All students should consult the department chairman for assignment of faculty advisors. The department also offers a Master of Science and a Doctor of Philosophy program in Plant and Soil Science.

An extensive research program provides unique opportunities for undergraduate students enrolled in the department to gain valuable practical experience in their chosen field of study. Under this program, several part-time work positions are available for competent and needy undergraduate students. The department also assists in securing summer employment for its students within its own research programs or with private, state, and federal agencies.

Students from other departments are encouraged to take a minor in Environmental Science, Horticulture, Crop Science, Soil Science, Remote Sensing/Geographic Information Systems, Forestry, or Wildlife Biology. Generally, 18 hours of course work are necessary to attain a minor in any of these areas.

Students majoring in any of the degree programs in Plant and Soil Science may get a minor in other areas (e.g., Chemistry, Physics, Mathematics, Computer Science, Business, etc.). Students who choose to select a minor outside the department must consult with their advisors early in the degree program to develop their programs of study.

**PROGRAM OFFERINGS**

**Plant Science Degree**

The Plant Science (Horticulture) Major is designed to provide a broad orientation to all aspects of Horticulture: Floriculture, Ornamental Horticulture, Vegetable Crops, Fruit Crops, and Landscaping. Horticulture majors may qualify for positions in commercial nurseries or greenhouses, commercial fruit or vegetable producers, landscape services, public parks, private estates, golf courses, federal and state agencies, and seed production industries. Many students, after completing this degree, pursue graduate programs in the areas of their interest in horticulture.

The Plant Science (Crop Science) Major provides a strong background in biological and life sciences in preparation for employment or graduate study. Crop scientists qualify for technical and professional positions in federal, state, university, or private organizations relating to agricultural research, agricultural biotechnology, food/seed production, agribusiness, crop/farm/turfgrass management and agricultural extension. Many students enter graduate programs in agronomy and crop science upon completing this degree.

Students choosing either the Crop Science or Horticulture major must complete each core course with a grade of “C” or better. Core courses are the departmental courses (SPS prefix) required for a degree.

**Environmental Science Degree**

The major in Soil Science gives the student a strong background in the physical and biological sciences, emphasizing their application to the area of Soil Science. Training in Soil Science prepares the student for positions

in research, extension, various government services, industry, and business, or to pursue graduate work in soils or related areas. Soil scientists can qualify for openings in land reclamation, soil conservation, soil surveying, land management, fertilizer and chemical industries, and with inspection and regulatory agencies.

The major in Environmental Science prepares a student for graduate study in environmental or related sciences or for a regulatory governmental position that requires interdisciplinary training. Students take several courses in chemistry and in instrumental analysis related to pollution abatement.

Students choosing either the Soil Science or Environmental Science major must complete each core course with a grade of “C” or better. Core courses are the departmental courses (SPS prefix) required for a degree.

### **Forestry Degree**

Alabama A&M University’s forestry program, accredited by the Society of American Foresters, is designed to meet increasing demands for both economical forest products and environmentally sound forestry practices. This program integrates biological, physical, and social aspects of forest management, while providing students with a fundamental appreciation for the various resources associated with forests. Two majors are available. The Forest Management major is designed for those students who desire immediate employment in forestry. Those students who desire a more specialized education (in such areas as soils, biotechnology, protection, molecular genetics, etc.), with the intention of pursuing postgraduate education, may elect to pursue the more flexible Forest Science major. In addition to these majors, several minors are also available to students.

Students choosing either the Forest Management or Forest Science major must complete each core course with a grade of “C” or better. Core courses are the departmental courses (SPS prefix) required for a degree.

### **Minor in Remote Sensing and Geographic Information Systems**

This minor supports Alabama A&M University’s NASA University Research Center in Hydrology, Soil Climatology, and Remote Sensing (HSCaRS) and fulfills a major Center objective, namely, increasing the number of underrepresented minorities in NASA-related scientific fields.

### **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

In addition to financial support available from federal, state, and University (need and merit-based) support programs, opportunities exist for student assistance via faculty research projects. Specialized scholarships are available from certain public/governmental agencies. Incoming students may also qualify for the USDA Scholars Program, among other merit-based scholarships.

### **COOPERATIVE EDUCATION/INTERNSHIPS**

A large number of students majoring in Environmental Science, Forestry and Plant Science accept summer and cooperative placements with governmental agencies, universities, and private forestry, biotech, and other agribusiness industries.

### **STUDENT/PROFESSIONAL ORGANIZATIONS**

Agronomy Club  
Alpha Zeta  
Environmental Science Club  
Graduate Student Association – Department of Plant and Soil Science  
Horticulture Club  
Minorities in Agriculture, Natural Resources, and Related Sciences (MANNRS)  
Society of American Foresters – Student Chapter

## SPECIAL PROGRAMS/AWARDS/RECOGNITIONS

Students at each classification level have the opportunity to earn Outstanding Student Awards given at the School level. Students also participate in the University's academic honors programs (e.g., Dean's List, etc.).

## GRADUATION REQUIREMENTS

- **University General Education Curriculum** (44 semester credit hours): ENG 101, ENG 102, ENG 205, ECO 231, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs and physical education, health, or military science (2).
- **Departmental Requirements:** In order to graduate with a B.S. Degree in Environmental Science, Forestry, or Plant Science, each student must officially declare one of the above referenced programs as a major; complete the University General Education curriculum; complete all courses as outlined in the curriculum with a minimum cumulative grade point average of 2.0; **and complete each core course for any major with a grade of "C" or better.** Core courses are the departmental courses (SPS prefix) required for a degree.

### Requirements for Minor in Remote Sensing

(18 semester credit hours)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 365	Introduction to Geographic Information Systems	3
SPS 465	Applications of Geostatistics	3
SPS 476	Remote Sensing of the Environment	4
	Restricted Electives	8
SPS 366	Climate and Global Change	4
SPS 471	Aerial Photo-Interpretation	3
SPS 481	Hydrology and Watershed Management	3
EE 303	Electromagnetic Field Theory	3
EE 304	Numerical Methods and Digital Computation	3
EE 410	Microwave Engineering	3
CMP 204	Visual Programming	3
CMP 309	Computer Graphics	3
MTH 383	Numerical Analysis	3

## PROGRAM CURRICULA

### PLANT SCIENCE – HORTICULTURE MAJOR

128 Credit Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 113 Pre-Calculus Trig. <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>2</sup>	3	CHE 102 General Chemistry II	3
CHE 101 General Chemistry I	3	CHE 102 General Chemistry II Lab	1
CHE 101L General Chemistry I Lab	1	SPS 170 Intro. to Environ. Science	3
SPS 101 Intro. to Plant Science	<u>4</u>	UPL 103 Community and You <sup>6</sup>	<u>3</u>
	15		16



## Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
Literature <sup>5</sup>	3	Literature <sup>5</sup>	3
BIO 101 General Biology I	3	Health Science <sup>4</sup>	2
BIO 101L General Biology I Lab	1	Social Science <sup>3,6</sup>	3
Social Science <sup>3</sup>	3	AGR 199 Computers in Agriculture	3
SPS 251 Intro. to Soil Science	4	SPS Required Courses	3
SPS Horticultural Electives	<u>3</u>	SPS Horticultural Electives	<u>3</u>
	17		17

## Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 304 Advanced Composition	3	ECO 231 Principles of Macro Economics	3
BIO 203 General Botany I	3	BIO 204 General Botany II	3
BIO 203L General Botany I Lab	1	BIO 204L General Botany II Lab	1
BIO 311 Principles of Genetics I	3	MUS 101 Music Appreciation <b>or</b>	3
BIO 311L Principles of Genetics I Lab	1	ART 101 Art Appreciation	3
SPS Required Courses	3	SPS Required Courses	3
ENG 205 General Speech	<u>3</u>	SPS Horticultural Electives	<u>3</u>
	17		16

## Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
SPS Required Courses	6	SPS Required Courses	6
SPS Horticultural Electives	3	SPS Horticultural Electives	3
Advisor Approved Electives	<u>6</u>	Advisor Approved Electives	<u>6</u>
	15		15

<sup>1</sup>Must earn grade of C or better.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>PHL 201, PSY 201, SOC 201, or GEO 213

<sup>4</sup>FAS 101, HED 101, NHM 103

<sup>5</sup>ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404

<sup>6</sup>HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 may be substituted

## Horticulture Major Required Plant Science Courses

(48-49 semester credit hours)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 101	Introduction to Plant Science	4
SPS 170	Introduction to Environmental Science	3
SPS 251	Introduction to Soil Science	4
SPS 411	Weed Science and Herbicide Technology	3
SPS 421	Plant Propagation	3
SPS 430	Biometry	3
SPS 432	Plant Disease Diagnosis	4
SPS 441	Phyto-physiology	4
SPS 477	Insect Biology and Pest Management	3
SPS 491	Seminar	1

**Each required course must be completed with a grade of “C” or better.**

**Horticulture Major Restricted Plant Science Electives**

(Five courses must be taken)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 401	Floral and Garden Center Management	4
SPS 422	Landscape Design and Construction	4
SPS 423	Ornamentals I- Trees and Shrubs	3
SPS 425	Lawn and Turf Management	3
SPS 427	Ornamentals II- Flowers and Foliage Plants	3
SPS 428	Fruit and Vegetable Production	3

**Each restricted elective course selected must be completed with a grade of “C” or better.****PLANT SCIENCE, CROP SCIENCE MAJOR**

128 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 113 Pre-Calculus Trig. <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>2</sup>	3	CHE 102 General Chemistry II	3
CHE 101 General Chemistry I	3	CHE 102 General Chemistry II Lab	1
CHE 101L General Chemistry I Lab	1	SPS 170 Intro. to Environ. Science	3
SPS 101 Intro. to Plant Science	<u>4</u>	UPL 103 Community and You <sup>3</sup>	<u>3</u>
	15		16

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
Literature <sup>5</sup>	3	Literature <sup>5</sup>	3
BIO 101 General Biology I	3	Health Science <sup>4</sup>	2
BIO 101L General Biology I Lab	1	Social Science <sup>3</sup>	3
Social Science <sup>6</sup>	3	AGR 199 Computers in Agriculture	3
SPS 251 Intro. to Soil Science	4	SPS Required Courses	<u>6</u>
CHE 201 Analytical Chemistry I	3		17
CHE 201L Analytical Chemistry I Lab	1		
Social Science <sup>6</sup>	<u>3</u>		
	18		

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 304 Advanced Composition	3	ECO 231 Principles of Macro Economics	3
BIO 203 General Botany I	3	BIO 204 General Botany II	3
BIO 203L General Botany I Lab	1	BIO 204L General Botany II Lab	1
BIO 311 Principles of Genetics I	3	MUS 101 Music Appreciation <b>or</b>	(3)
BIO 311L Principles of Genetics I Lab	1	ART 101 Art Appreciation	(3)
SPS Required Courses	3	SPS Required Courses	<u>6</u>
ENG 205 General Speech	<u>3</u>		16
	17		

## Senior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
SPS	Required Courses	11	SPS	Required Courses	8
	Advisor Approved Electives	<u>4</u>		Advisor Approved Electives	<u>6</u>
		15			14

<sup>1</sup>Must earn grade of C or better.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 may be substituted

<sup>4</sup>FAS 101, HED 101, NHM 103

<sup>5</sup>ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404

<sup>6</sup>PHL 201, PSY 201, SOC 201, or GEO 213

## Required Plant Science Courses: Crop Science Major

(46 semester credit hours)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 101	Introduction to Plant Science	4
SPS 170	Introduction to Environmental Science	3
SPS 251	Introduction to Soil Science	4
SPS 310	Field Crop Production	3
SPS 411	Weed Science and Herbicide Technology	3
SPS 416	Principles of Sustainable Agriculture	3
SPS 430	Biometry	3
SPS 431	Principles of Plant Breeding	3
SPS 432	Plant Disease Diagnosis	4
SPS 440	Seed Production Practices	4
SPS 441	Phyto-physiology	4
SPS 470	Soil, Plant and Water Analysis	4
SPS 477	Insect Biology and Pest Management	3
SPS 491	Seminar	1

**Each required course must be completed with a grade of "C" or better.**

## ENVIRONMENTAL SCIENCE, SOIL SCIENCE MAJOR

128 Credit Hours

### Freshman Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	ENG 102	Composition II <sup>1</sup>	3
ENG 101	Composition I <sup>1</sup>	3	MTH 113	Pre-Calculus Trig. . <sup>2</sup>	3
MTH 112	Pre-Calculus Algebra <sup>2</sup>	3	CHE 102	General Chemistry II	3
CHE 101	General Chemistry I	3	CHE 102	General Chemistry II Lab	1
CHE 101L	General Chemistry I Lab	1	SPS 170	Intro. to Environ. Science	3
SPS 101	Intro. to Plant Science	<u>4</u>	UPL 103	Community and You <sup>3</sup>	<u>3</u>
		15			16

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
	Literature <sup>5</sup>	3	Literature <sup>5</sup>	3
BIO 101	General Biology I	3	Health Science <sup>4</sup>	2
BIO 101L	General Biology I Lab	1	Social Science <sup>3,6</sup>	3
	Social Science <sup>6</sup>	3	AGR 199 Computers in Agriculture	3
SPS 251	Intro. to Soil Science	4	MTH 120 Calculus and Its Appls. <b>Or</b>	3
CHE 201	Analytical Chemistry I	3	MTH 125 Calculus	(3)
CHE 201L	Analytical Chemistry I Lab	<u>1</u>	BIO 102 General Biology II	3
		18	BIO 102L General Biology II Lab	<u>1</u>
				18

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 304	Advanced Composition	3	ENG 205 General Speech	3
CHE 301	Organic Chemistry I	3	CHE 302 Organic Chemistry II	3
CHE 301L	Organic Chemistry I Lab	1	CHE 302 Organic Chemistry II Lab	1
PHY 103	General Physics	4	ECO 223 Principles of Macro Economics	3
MUS 101	Music Appreciation <b>or</b>	3	SPS Required Courses	<u>7</u>
ART 101	Art Appreciation	(3)		17
		14		

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
SPS	Required Courses	12	SPS Required Courses	12
	Advisor Approved Electives	<u>3</u>	Advisor Approved Electives	<u>3</u>
		15		15

<sup>1</sup>Must earn grade of C or better.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 may be substituted

<sup>4</sup>FAS 101, HED 101, NHM 103

<sup>5</sup>ENG 201, ENG 202, ENG 203, ENG 204; ENG 301, or ENG 404

<sup>6</sup>PHL 201, PSY 201, SOC 201, or GEO 213

**Required Environmental Science Courses: Soil Science Major**

(43 semester credit hours)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 101	Introduction to Plant Science	4
SPS 170	Introduction to Environmental Science	3
SPS 251	Introduction to Soil Science	4
SPS 310	Field Crop Production	3
SPS 350	Soil Morphology, Genesis, and Classification	4
SPS 351	Soil and Water Conservation	3
SPS 406	Soil Microbiology	4
SPS 416	Principles of Sustainable Agriculture	3
SPS 430	Biometry	3
SPS 452	Soil Fertility and Fertilizers	3
SPS 461	Soil Physics	4
SPS 470	Soil, Plant, and Water Analysis	4
SPS 491	Seminar	1

**Each required course must be completed with a grade of “C” or better.**

**Requirements for Environmental Science Degree: Environmental Science Major**  
(38 semester credit hours)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 101	Introduction to Plant Science	4
SPS 170	Introduction to Environmental Science	3
SPS 251	Introduction to Soil Science	4
SPS 406	Soil Microbiology	4
SPS 430	Biometry	3
SPS 451	Environmental Toxicology	3
SPS 453	Hazardous Waste Management	3
SPS 470	Soil, Plant, and Water Analysis	4
SPS 472	Soil, Water, and Air Pollution	3
SPS 491	Seminar	1

**Each required course must be completed with a grade of “C” or better.**

**Restricted Environmental Science Degree: Environmental Science Major**  
(Must select six hours)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
BIO 324	Ecotoxicology	3
SPS 365	Introduction to Geographic Information Systems	3
SPS 416	Principles of Sustainable Agriculture	3
SPS 486	Environmental Policy and Law	3
UP 442	Planning and the Environment	3
SPS 475	Principles of Wetlands	3
SPS 452	Soil Fertility and Fertilizers	3

**Each restricted elective course selected must be completed with a grade of “C” or better.**

**ENVIRONMENTAL SCIENCE**  
128 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 113 Pre-Calculus Trig. <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>2</sup>	3	CHE 102 General Chemistry II	3
CHE 101 General Chemistry I	3	CHE 102 General Chemistry II Lab	1
CHE 101L General Chemistry I Lab	1	SPS 170 Intro. to Environ. Science	3
SPS 101 Intro. to Plant Science	<u>4</u>	UPL 103 Community and You <sup>3</sup>	<u>3</u>
	15		16

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
Literature <sup>5</sup>	3	Literature <sup>5</sup>	3
BIO 101 General Biology I	3	Health Science <sup>4</sup>	2
BIO 101L General Biology I Lab	1	Social Science <sup>3</sup>	3
GEO 213 Principles of Geography	3	AGR 199 Computers in Agriculture	3
SPS 251 Intro. to Soil Science	4	MTH 120 Calculus and Its Appls. <b>Or</b>	3
CHE 201 Analytical Chemistry I	3	MTH 125 Calculus	(3)
CHE 201L Analytical Chemistry I Lab	<u>1</u>	BIO 102 General Biology II	3
	18	BIO 102L General Biology II Lab	<u>1</u>
			18

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**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 304	Advanced Composition	3	ENG 205	General Speech	3
CHE 301	Organic Chemistry I	3	CHE 302	Organic Chemistry II	3
CHE 301L	Organic Chemistry I Lab	1	CHE 302	Organic Chemistry II Lab	1
SPS	Required Courses	4	ECO 223	Principles of Macro Economics	3
MUS 101	Music Appreciation <b>or</b>	3	SPS	Required Courses	3
ART 101	Art Appreciation	(3)	PHY 103	General Physics	<u>4</u>
CHE 202	Analytical Chemistry II	3			17
CHE 202L	Analytical Chemistry II Lab	<u>1</u>			
		18			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
BIO 330	Microbiology	3	SPS	Required Courses	6
BIO 330L	Microbiology Lab	1		Environ. Science Electives	<u>6</u>
SPS	Required Courses	8			12
	Advisor Approved Electives	<u>2</u>			
		14			

<sup>1</sup>Must earn grade of C or better.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 may be substituted

<sup>4</sup>FAS 101, HED 101, NHM 103

<sup>5</sup>ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404

**Required Forestry Courses: Forest Management Major**

(55 semester credit hours)

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 251	Introduction to Soil Science	4
SPS 281	Introduction to Forestry	3
SPS 282	Dendrology	3
SPS 370	Natural Resource Management	3
SPS 371	Forest Mensuration	4
SPS 373	Forest Protection	3
SPS 374	Silvics	3
SPS 375	Silviculture	4
SPS 380	Forestry Field Techniques	6
SPS 381	Wood Products	3
SPS 387	Wildlife-Forestry Relationships	3
SPS 430	Biometry	3
SPS 471	Aerial Photo-Interpretation	3
SPS 480	Natural Resource Policy	3
SPS 483	Forest Resource Economics	3
SPS 489	Forest Ecological Management	3
SPS 491	Seminar	1

**Each required course must be completed with a grade of "C" or better.**

## Required Forestry Courses: Forest Science Major

(52 semester credit hours):

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 251	Introduction to Soil Science	4
SPS 281	Introduction to Forestry	3
SPS 282	Dendrology	3
SPS 371	Forest Mensuration	4
SPS 373	Forest Protection	3
SPS 374	Silvics	3
SPS 375	Silviculture	4
SPS 380	Forestry Field Techniques	6
SPS 430	Biometry	3
SPS 480	Natural Resource Policy	3
SPS 483	Forest Resource Economics	3
SPS 489	Forest Ecological Management	3
SPS 491	Seminar	1

**Each required course must be completed with a grade of “C” or better.**

## Restricted Forestry Electives: Forest Science Major

(9 hours must be selected):

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SPS 370	Natural Resource Management	3
SPS 381	Wood Products	3
SPS 385	Forest Recreation	3
SPS 386	Principles of Wildlife Management	3
SPS 387	Wildlife-Forestry Relationships	3
SPS 432	Plant Disease Diagnosis	4
SPS 441	Phyto-physiology	4
SPS 452	Soil Fertility and Fertilizers	3
SPS 471	Aerial Photo-Interpretation	3
SPS 477	Insect Biology and Pest Management	3
SPS 481	Hydrology and Watershed Management	3
SPS 482	Forest Tree Improvement	3
SPS 484	Ecological Processes	3
SPS 486	Environmental Policy and Law	3

**Each restricted elective course selected must be completed with a grade of “C” or better.**

## FORESTRY, FOREST MANAGEMENT MAJOR

128 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 113 Pre-Calculus Trig. <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>2</sup>	3	CHE 102 General Chemistry II	3
CHE 101 General Chemistry I	3	CHE 102 General Chemistry II Lab	1
CHE 101L General Chemistry I Lab	1	BIO 101 General Biology I	3
SPS 101 Intro. to Forestry	<u>3</u>	BIO 101L General Biology I Lab	1
		UPL 103 Community and You <sup>3</sup>	<u>3</u>
	14		17

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**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
	Literature <sup>5</sup>	3	Literature <sup>5</sup>	3	
BIO 203	General Botany I	3	BIO 204	General Botany II	3
BIO 203L	General Botany I Lab	1	BIO 204L	General Botany II Lab	1
	Social Science <sup>6</sup>	3		Social Science <sup>3</sup>	3
SPS 251	Intro. to Soil Science	4		Health Science <sup>4</sup>	2
SPS 282	Dendrology	<u>3</u>	ECO 231	Principles of Macroeconomics	3
		17	AGR 199	Computers in Agriculture	<u>3</u>
					18

**Summer**

SPS 380	Forestry Field Techniques	6
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**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ENG 304	Advanced Composition	3	ENG 205	General Speech	3
CE 201	Surveying	3	SPS	Required Courses	<u>14</u>
MUS 101	Music Appreciation <b>or</b>	3			17
ART 101	Art Appreciation	(3)			
SPS	Required Courses	<u>9</u>			
		18			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MGT 315	Principles of Management <b>or</b>	3	SPS	Required Courses	7
AGB 421	Agribusiness Management	(3)		Advisor Approved Electives	<u>2</u>
SPS	Required Courses	<u>9</u>			9
		12			

<sup>1</sup>Must earn grade of C or better.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 may be substituted

<sup>4</sup>FAS 101, HED 101, NHM 103

<sup>5</sup>ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404

<sup>6</sup>PHL 201, PSY 201, SOC 201, or GEO 213

**FORESTRY, FOREST SCIENCE MAJOR**

128 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ORI 101	Survival Skills	1	ENG 102	Composition II <sup>1</sup>	3
ENG 101	Composition I <sup>1</sup>	3	MTH 113	Pre-Calculus Trig. <sup>2</sup>	3
MTH 112	Pre-Calculus Algebra <sup>2</sup>	3	CHE 102	General Chemistry II	3
CHE 101	General Chemistry I	3	CHE 102	General Chemistry II Lab	1
CHE 101L	General Chemistry I Lab	1	BIO 101	General Biology I	3
SPS 101	Intro. to Forestry	<u>3</u>	BIO 101L	General Biology I Lab	1
		14	UPL 103	Community and You <sup>3</sup>	<u>3</u>
					17



## Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
	3	Literature <sup>5</sup>	3
BIO 203	3	General Botany I	3
BIO 203L	1	General Botany I Lab	1
	3	Social Science <sup>6</sup>	3
SPS 251	4	Intro. to Soil Science	2
SPS 282	<u>3</u>	Dendrology	3
	17	ECO 231 Principles of Macroeconomics	3
		AGR 199 Computers in Agriculture	<u>3</u>
			18

## Summer

SPS 380	6	Forestry Field Techniques
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## Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 304	3	Advanced Composition	3
MUS 101	3	Music Appreciation <b>or</b>	14
ART 101	(3)	Art Appreciation	17
SPS	3	Required Courses	
SPS	3	Forestry Electives	
	<u>3</u>	Advisor Approved Electives	
	15		

## Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
SPS	3	Forestry Electives	7
SPS	6	Required Courses	3
	<u>3</u>	Advisor Approved Electives	<u>2</u>
	12		12

<sup>1</sup>Must earn grade of C or better.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 may be substituted

<sup>4</sup>FAS 101, HED 101, NHM 103

<sup>5</sup>ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404

<sup>6</sup>PHL 201, PSY 201, SOC 201, or GEO 213

## COURSE DESCRIPTIONS

- SPS 101      *Introduction to Plant Science* – 4 hrs. Study of the fundamental principles of science as related to the basic aspects of plant growth, morphology, physiology, ecology, propagation, and utilization. **Prerequisite: None.** (Offered Fall)
- SPS 170      *Introduction to Environmental Science* – 3 hrs. Designed as a general science elective. A study of man both as a dominant force and as an inseparable part of the ecosphere. Basic ecological concepts, pollution and pollution control, resources and resource use, human manipulation of ecosystems, the law and environmental problems, the urban environment, problems of population growth, and discussion of other specific environmental issues are covered. **Prerequisite: None.** (Offered Spring)
- SPS 251      *Introduction to Soil Science* – 4 hrs. Fundamental principles of soil science; a comprehensive study of physical, chemical, and biological properties of soils and their applications to crop production and other land uses. (Audio-tutorial). **Prerequisite: None.** (Offered Fall)

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- SPS 281 *Introduction to Forestry* – 3 hrs. Principles and practices of forestry. Brief treatment of forest tree biology, dendrology, forest ecology, hydrology, insects and diseases, mensuration, silvicultural methods, products, economics, and management. **Prerequisite: None.** (Offered Fall)
- SPS 282 *Dendrology* – 3 hrs. Identification, classification, and taxonomy of the commercially and ecologically important forest plants in the United States. **Prerequisite: None.** (Offered Fall)
- SPS 310 *Field Crop Production* – 3 hrs. Study of the fundamental principles of production, management, identification, and grading of major cereal, forage, oil, and miscellaneous crops, with special emphasis on Alabama conditions. **Prerequisites: SPS 101 and SPS 251.** (Offered Spring)
- SPS 350 *Soil Morphology, Genesis, and Classification* – 4 hrs. Soil characteristics used in soil survey and identification, factors and processes of soil formation, and principles of soil classification systems are addressed. **Prerequisite: SPS 251.** (Offered Fall, Odd Years)
- SPS 351 *Soil and Water Conservation* – 3 hrs. A study of soil and water conservation principles as related to wind and water erosion control, water utilization and runoff control, irrigation and drainage principles relating to crop production. **Prerequisites: SPS 251 and junior or senior standing.** (Offered Spring, Even Years)
- SPS 360 *Cooperative Education* – Credits variable, but should not exceed six semester hours. Relevant job-related experiences are arranged with federal and state government or with private industry. **Prior approval by student's advisor is required. Prerequisite: None.** (Offered Summer)
- SPS 365 *Introduction to Geographic Information Systems* – 3 hrs. An introduction to computer-assisted geographic analysis technology used in the management, assessment, and inventory of natural resources. **Prerequisite: None.** (Offered Fall, Even Years)
- SPS 366 *Climate and Global Change* – 4 hrs. An introduction to climate and global change, including the relationships between the sun and the earth that drive the climate system; the global structure and variations of the atmosphere and oceans; and the influence of humans and natural processes on the climate system and its variability. Additional topics include: the greenhouse effect, ozone depletion, air pollution, acid rain, biodiversity, paleoclimatology, and volcanism. Students should have an understanding of basic math concepts and the physical sciences prior to this course. **Prerequisite: Limited to students participating in the HSCaRS Summer Enrichment Program.** (Offered Summer)
- SPS 370 *Natural Resource Management* – 3 hrs. An ecological approach to basic conservation principles and techniques. Introduction to policies and techniques for intelligent management and utilization of forests and other natural resources. **Prerequisite: One course in biology.** (Offered Fall)
- SPS 371 *Forest Mensuration* – 4 hrs. An applied approach to forest measurements, including log, tree and stand measurements, as well as data analysis. Training in commonly used measuring devices is included during a weekly field laboratory. **Prerequisite: SPS 380 or consent of instructor; Co-requisite: SPS 375.** (Offered Spring)
- SPS 373 *Forest Protection* – 3 hrs. An elementary course in the protection of forests from disease, insects, and fire. Identification of disease causing organisms and harmful forest insects and their control, as well as principles of forest fire prevention and crew organization used in fire fighting, are studied. **Prerequisite: One course in biology.** (Offered Spring)
- SPS 374 *Silvics* – 3 hrs. A study of the habitat, genetics, and life histories of commercially and ecologically important U.S. trees and their interaction with their environments. **Prerequisite: SPS 282.** (Offered Fall)

- SPS 375      *Silviculture* – 4 hrs. A study of silvicultural systems in the U.S. Includes basic forest ecology, regeneration practices, intermediate cuts, and site preparation. **Prerequisite: SPS 380 or consent of instructor; Co-requisite: SPS 371.** (Offered Spring)
- SPS 380      *Forestry Field Techniques* – 6 hrs. A six-week, full-time summer course including timber harvesting techniques, field mensuration, and silvicultural practices. **Prerequisite: SPS 281 or consent of instructor.** (Offered Summer)
- SPS 381      *Wood Products* – 3 hrs. A study of the physical and chemical composition of wood and the products derived from wood. **Prerequisite: SPS 281.** (Offered Fall)
- SPS 385      *Forest Recreation* – 3 hrs. An introduction to forest recreation from the planning, policy, legal, and technical standpoints. Campgrounds, picnic areas, trail construction, visitors, and operations management are a few of the major areas covered. Specific information and recommendations on how to perform forest recreation jobs at the technical level are also provided. **Prerequisite: SPS 281.** (Offered Spring)
- SPS 386      *Principles of Wildlife Management* – 3 hrs. An introduction to the life history requirements, behavioral adaptations, habitat selection, population dynamics, community relationships, and management strategies of terrestrial vertebrates in North America. History of wildlife management, current wildlife policies, and survey of wildlife field techniques are also included. **Prerequisite: BIO 101.** (Offered Fall)
- SPS 387      *Wildlife-Forestry Relationships* – 3 hrs. An in-depth course on the relationships between forest habitat conditions and the abundance, diversity, and physiological condition of wildlife. Examination of wildlife effects on forest regeneration and management practices with consideration of vertebrate pest control strategies. Discussion of wildlife-habitat relationships models, habitat suitability models, and assessment of beneficial and detrimental impacts of forest management on wildlife conservation. **Prerequisite: SPS 281.** (Offered Spring)
- SPS 401      *Floral and Garden Center Management* (formerly Nursery and Greenhouse Management) – 4 hrs. Management of garden centers, including financing, selecting a location, designing of facilities, greenhouse construction, selection of plant materials, personnel management, selling and advertising, and maintaining plant materials. Principles and practices of establishment and management of a retail flower shop, including store location, buying, floral design, pricing and merchandise control. **Prerequisite: SPS 101 or consent of instructor.** (Offered Spring, Odd Years)
- SPS 406      *Soil Microbiology* – 4 hrs. A study of the properties and classes of microorganisms as related to soil and crop production. Effects of microorganisms on the fertility, and chemical and physical properties of soil are emphasized. **Prerequisites: BIO 101, BIO 101L, BIO 102, BIO 102L, BIO 330, and BIO 330L. Seniors and graduate students only.** (Offered Spring)
- SPS 410      *Forage Management* – 3 hrs. A study of the soil - plant - animal complex as it relates to the morphology, physiology, and utilization of forages. Emphasis will be on agronomic practices and physiological considerations in forage management in Alabama. **Prerequisite: SPS 101 or BIO 204 and BIO 204L.** (Offered Spring, Odd Years)
- SPS 411      *Weed Science and Herbicide Technology* – 3 hrs. A study of the phenology of weeds; habitat management by cultural, mechanical, biological, and chemical means; dissipation; and phytotoxicity of herbicides. Application and physiological relationships of herbicides and recent advances in weed control problems are also discussed. **Prerequisite: SPS 101 or BIO 204 and BIO 204L.** (Offered Fall, Odd Years)

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- SPS 416 *Principles of Sustainable Agriculture* – 3 hrs. A course designed to provide students with an overview of agricultural resources and the ways they are used or misused. The course offers principles in sustaining such resources for the betterment of quality of life on the earth. **Prerequisite: None.** (Offered Spring)
- SPS 421 *Plant Propagation* – 3 hrs. A study of the principles, processes, methods, and materials involved in sexual and asexual propagation of plants. **Prerequisites: SPS 101 or consent of instructor.** (Offered Spring, Odd Years)
- SPS 422 *Landscape Design and Construction* – 4 hrs. A study of the principles of landscape design, including symbols, styles and finished drawings; selection and arrangement of plants, sections and elevations; design of construction features and computer-aided drawing. **Prerequisite: SPS 323.** (Offered Spring, Even Years)
- SPS 423 *Ornamentals I – Trees and Shrubs* (formerly Plant Materials for Landscape Design) – 3 hrs. Type, characteristics, adaptation, maintenance, and functional uses of ornamental plants used in landscape design, with a special emphasis on trees, shrubs, vines, and groundcovers. **Prerequisites: SPS 101 or consent of instructor.** (Offered Fall, Odd Years)
- SPS 425 *Lawn and Turf Management* (formerly Turf Management) – 3 hrs. Methods and principles of establishing and maintaining residential lawns as well as special-purpose turf grasses for commercial landscapes, golf courses or athletic fields, including weed and pest control. **Prerequisite: SPS 101 or equivalent.** (Offered Spring, Even Years)
- SPS 427 *Ornamentals II – Flowers and Foliage Plants* (formerly Floriculture) – 3 hrs. Identification, culture, and use of herbaceous annuals and perennials, bulbs, herbs, and ornamental grasses. Consideration of flowerbed and border preparation, care, and maintenance. Introduction to the selection, installation, and care of tropical foliage plants in public interior settings. Topics include natural and artificial light, plant acclimatization, growing media, fertilizers, containers and pest control. **Prerequisite: SPS 101 or consent of instructor.** (Offered Fall, Even Years)
- SPS 428 *Fruit and Vegetable Production* (formerly Fruit Production) – 3 hrs. Commercial fruit and vegetable culture, including site selection and preparation, classes of vegetables, species of fruits, establishment, pest control, and harvesting are emphasized in this course. **Prerequisite: SPS 101 or consent of instructor.** (Offered Spring, Even Years)
- SPS 430 *Biometry* – 3 hrs. Introductory statistics, with emphasis on the biological sciences. Includes a study of natural distribution systems, sampling techniques, data arrangement, tests of significance, and logical inferences. **Prerequisites: MTH 112 and MTH 113.** (Offered Fall)
- SPS 431 *Principles of Plant Breeding* – 3 hrs. Principles, methods, and techniques involved in plant breeding, and their application to field crops. **Prerequisites: BIO 204, BIO 204L, BIO 311 and BIO 311L.** (Offered Spring)
- SPS 432 *Plant Disease Diagnosis* – 4 hrs. A study of the general principles and methods applied in identification, epidemiology, etiology, and control of major plant diseases. **Prerequisite: None.** (Offered Fall)
- SPS 433 *Introduction to Molecular Genetics* – 3 hrs. The study of prokaryotic DNA structure and replication, restriction analysis, sequencing, transcription, translation, gene regulation and gene expression. **Prerequisite: Consent of instructor.** (Offered Fall)
- SPS 433L *Introduction to Molecular Genetics Laboratory* – 1 hr. This course emphasizes the basic techniques used in molecular genetics and provides a step-by-step approach and hands-on experience in the field of recombinant DNA technology. **Co-requisite: SPS 433.** (Offered Fall)

- SPS 440 *Seed Production Practices* – 4 hrs. A study of the principles and practices in the production of pure seeds, with emphasis on harvesting, drying and storage; crop and weed seed identification and laboratory practices in seed testing; and official rules for testing seeds and seed laws or marketing. **Prerequisites: SPS 101 or SPS 310.** (Offered Fall, Even Years)
- SPS 441 *Phyto-physiology* – 4 hrs. A study of the environment-plant growth interaction in the physiology of plants with emphasis on whole plant processes. **Prerequisite: SPS 101.** (Offered Fall)
- SPS 450 *Earth Science* – 3 hrs. An advanced level overview of earth science concepts, processes, and categories, with emphasis on plate tectonics, volcanism, weathering and erosion, global weather and climate, vegetation, and soil. Emphasis is placed on human interactions and relationships with the physical environment and resulting public policy and management conflicts (e.g., biodiversity as an issue), as well as management strategies. **Prerequisite: None.** (Offered Fall, Even Years)
- SPS 451 *Environmental Toxicology* (formerly Chemistry of Toxic Substances) – 3 hrs. Provides fundamental knowledge concerning the toxicological effects of environmental chemicals on living systems. Emphasis on the chemical and biological characteristics of major pollutants found in our environment and their influence on living organisms, including animals, humans, and plants. Environmental chemistry and reactions of toxic substances, their origins and uses, and their exposure, transformation and elimination by biological systems. Formulas, structures and reactions of toxic substances are also emphasized. **Prerequisites: CHE 102, CHE 302, or consent of instructor.** (Offered Fall, Odd Years)
- SPS 452 *Soil Fertility and Fertilizers* – 3 hrs. A study of the relationship of soil chemistry, forms of nutrients in soils, and the role of plant nutrients in crop production, as well as other factors associated with soil productivity; and basic concepts of fertilizer application and manufacturing. **Prerequisites: CHE 102 and SPS 251.** (Offered Fall, Even Years)
- SPS 453 *Hazardous Waste Management* – 3 hrs. The impact, technologies, problems and issues associated with hazardous wastes and management practices are emphasized in this course. Case studies of hazardous waste spills, risk assessments, and remediation techniques are included. **Prerequisite: None.** (Offered Spring, Odd Years)
- SPS 460 *Soil Chemistry* – 3 hrs. Chemical and mineralogical composition of soil; fundamental chemical properties of soils; nature and properties of soil colloids; cation exchange phenomena in soils; soil reaction, and soil acidity are addressed in this course. **Prerequisites: CHE 101, CHE 101L, CHE 102, CHE 102L, and SPS 251.** (Offered Spring, Odd Years)
- SPS 461 *Soil Physics* – 4 hrs. A study of physical make-up and properties of soil, including structure, thermal relationships, consistency, plasticity, water and their interrelatedness. **Prerequisites: PHY 103 and SPS 251.** (Offered Fall, Even Years)
- SPS 465 *Applications of Geostatistics* – 3 hrs. Concepts and methods of how to use geostatistics to describe and analyze environmental data. How geostatistical models can be used for improving sampling experimental designs, mapping contaminant concentrations, risk analysis, remediation, planning and probability analyses. Encourages students to conceptually develop relationships between theory, research, and action to manage natural resources. **Prerequisites: MTH 112, MTH 113, and SPS 430 or equivalent statistics.** (Offered Spring, Even Years)
- SPS 470 *Soil, Plant, and Water Analysis* – 4 hrs. Study of the principles involved and the use of chemical instrumental methods employed in the analysis of soil, plant, and water samples for both agronomic and environmental purposes. Experimental and descriptive inorganic and organic analyses. Operational theory and principles of applicable instruments, including spectrophotometry, atomic and molecular absorption and emission spectroscopy, mass spectrometry, X-ray diffraction and fluorescence, gas and ion chromatography, and ion-selective

SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

electrodes. **Prerequisites: CHE 102, CHE 202, CHE 202 and SPS 251.** (Offered Spring, Even Years)

- SPS 471 *Aerial Photo-Interpretation* – 3 hrs. Detection, identification and analysis of objects or features from aerial photographs. Sensing devices and other equipment related to photogrammetry application are utilized. Interpretation of terrain, vegetation, and cultural features is emphasized. **Prerequisite: Consent of instructor.** (Offered Fall)
- SPS 472 *Soil, Water and Air Pollution* – 3 hrs. The fate of chemical fertilizers, pesticides, and other agricultural and industrial pollutants in relation to environmental quality as well as the effects of these factors on checks and balances of natural terrestrial and aquatic ecosystems will be emphasized. **Prerequisites: CHE 102, CHE 102L, and SPS 251.** (Offered Spring, Even Years)
- SPS 475 *Principles of Wetlands* – 3 hrs. The importance of wetlands for wildlife, waste treatment, flood control, and water quality is emphasized. Biological, chemical, and physical processes, which occur in natural and constructed wetlands, are addressed. Field trips are required. **Prerequisites: CHE 102, CHE 102L, and SPS 251.** (Offered Fall, Even Years)
- SPS 476 *Remote Sensing of the Environment I* (formerly Remote Sensing of Earth Surface Features) – 4 hrs. The principles of remote sensor systems and their utility, natural resource inventory and management, land use planning, and environmental monitoring, as well as interpretation of color infrared photos, multispectral and thermal scanners, and radar imagery, are emphasized in this course. **Prerequisite: Consent of instructor.** (Offered Fall, Odd Years)
- SPS 477 *Insect Biology and Pest Management* (formerly Ecology and Management of Woody Plant Insects) – 3 hrs. An in-depth course on the biology of insects, emphasizing taxonomy, basic structure and function, ecology and the management of insect pest populations. The course includes a weekly three-hour laboratory, where students develop insect identification and collecting skills. **Prerequisite: Consent of instructor.** (Offered Spring, Odd Years)
- SPS 480 *Natural Resource Policy* – 3 hrs. Evaluation of land and forest problems and policies in the United States, including an analysis of current social and resource characteristics that have shaped policy in the United States. **Prerequisite: Consent of instructor.** (Offered Spring)
- SPS 481 *Hydrology and Watershed Management* (formerly Forest Hydrology and Watershed Management) – 3 hrs. This course addresses the occurrence and movement of water over the earth's surface. The hydrologic cycle, surface runoff relations, relationship of precipitation to stream flow with frequency analysis, unit hydrograph theory, flood routing, probability in hydrology, hydrologic simulation and stochastic methods in hydrology are covered. **Prerequisite: Consent of instructor.** (Offered Spring, Odd Years)
- SPS 482 *Forest Tree Improvement* – 3 hrs. Practical problems, concepts and techniques for genetic improvement of forest trees. **Prerequisite: Consent of instructor.** (Offered Spring, Even Years)
- SPS 483 *Forest Resources Economics* – 3 hrs. A discussion of the market, price, and cost-affecting factors as they relate to timber-harvesting techniques used for determining the best economic alternative. **Seniors only. Prerequisite: Senior classification and consent of instructor.** (Offered Fall)
- SPS 484 *Ecological Processes* – 3 hrs. A review of ecological concepts and processes. Investigations into the ecological role of fire and wetlands are also included. **Prerequisite: SPS 374 or consent of instructor.** (Offered Fall, Odd Years).
- SPS 486 *Environmental Policy and Law* – 3 hrs. A course designed to provide students with a foundation for understanding the environmental law system by examining various laws, policies, and cases within the U.S. legal system that are used to minimize, prevent, or remedy the consequences of

actions which damage or threaten the environment, public health, or safety. **Prerequisite: Consent of instructor.** (Offered Fall, Even Years)

- SPS 489 *Forest Ecological Management* – 3 hrs. A study of the integrated management of forest resources including plant, site and landscape processes, as well as interrelationships of forestry practices, wildlife and range management, hydrology, recreation, and other demands. **Prerequisite: SPS 371.** (Offered Spring)
- SPS 490 *Special Problems* – 1-3 hrs. The student selects a problem within his or her major interest that is planned and executed under the supervision of a faculty member. **Prerequisite: Consent of instructor.** (Offered Fall, Spring and Summer)
- SPS 491 *Seminar* – 1 hr. A course designed to help students develop skills and techniques associated with data gathering and presentation by using audiovisual equipment. Guest speakers will also present topics of general interest in agriculture and environmental science. **Prerequisite: Senior classification and consent of instructor.** (Offered Fall, Spring, and Summer)
- SPS 492 *Student Exchange* – 6-16 hrs. Students entering into this program will register for 6-16 credit hours at the home institution and pay fees at the home institution, but actually take a load equivalent to the credit hours for which they registered at one of the cooperating international institutions. Choice of courses and load will be determined by agreement between the home institution advisor, the student, and the host institution mentor. **Prerequisite: None.** (Offered Fall, Spring and Summer)

## **SCHOOL OF ARTS AND SCIENCES**

Dr. Jerry R. Shipman, Dean  
323 V. Murray Chambers Building  
(256) 372-5500

### **MISSION AND OBJECTIVES**

The primary mission of the School of Arts and Sciences is to provide high quality educational offerings in fields of arts and sciences for capable students, including those who have experienced limited access to education. This is accomplished within the University's traditional land-grant mission of teaching, research and service.

The objectives of the School of Arts and Sciences are a) to provide courses of instruction and experiences which seek to develop the student's ability to engage in analytical and critical thought and expression; b) to provide opportunities and experiences that will enable the student to become a creative, versatile person capable of functioning as a productive member of his/her profession and society; c) to provide experiences that will enable the student to develop satisfactory qualifications for entrance to graduate and professional schools; d) to provide opportunities for the student to recognize the conceptual relationship of disciplines and knowledge through interdisciplinary programs; e) to promote the advancement of knowledge in all its curricula through research and nurture creative abilities among students and faculty in the departments; and f) to provide students with an awareness and perspective of the rapidly changing global society.

### **ORGANIZATION AND FIELDS OF CONCENTRATION**

The School of Arts and Sciences is organized into seven (7) departments, each headed by a department chair. The departments are **Behavioral Sciences, English and Foreign Languages, Mathematics, Military Science, Natural and Physical Sciences, Physics, and Social Work**. Major and minor programs in the Department of Behavioral Sciences include political science and sociology. Major and minor programs in the Department of English and Foreign Languages include English and Telecommunications (with options in operations, performance and production). The Department of Military Science offers only a minor program in military science. Majors and minors programs in the Department of Natural and Physical Sciences include biology (with major options in botany, zoology, medical technology, pre-medicine, and ecotoxicology) and chemistry. A double major in mathematics and computer science and a cooperative program in pre-nursing are also offered in the department. The Department of Physics offers a major in physics (with three options in electrical, mechanical, and civil) and minors in computer science, physics and mathematics. An undergraduate nationally **accredited** social work program is offered in the Department of Social Work. Minor programs offered in the School include applied statistics, criminal justice, French, history, philosophy, and public history. In collaboration with the School of Education, several departments in the School of Arts and Sciences offer coursework that assists students in obtaining teacher certification in education in several arts and sciences program majors.

### **REQUIREMENTS FOR GRADUATION**

A candidate for the Bachelor of Arts or Bachelor of Science degree in the School of Arts and Sciences must successfully complete the degree program as outlined in the department in which the student is enrolled, with not less than a 2.00 overall grade point average. The B.A. degree is awarded in the departments of Behavioral Sciences, Social Work, and English and Foreign Languages. The B. S. degree is awarded in the departments of Physics, Natural and Physical Sciences, and Mathematics.



## **ADVISING SYSTEM**

A student who enrolls in the School of Arts and Sciences is assigned a departmental advisor. In consultation with the advisor, the student should plan a program of study in a selected area of concentration in a department. The major program of study should include courses that will fulfill the institutional and departmental major requirements for graduation. A student choosing a minor only in a department should consult with the departmental chairperson before pursuing courses. Basic distribution of requirements, as to courses and hours for majors and minors, are given in the departmental listings in this Bulletin.

## **DEPARTMENT OF BEHAVIORAL SCIENCES**

223 Carver Complex North  
256-372-5339

The Department of Behavioral Sciences is comprised of six academic disciplines. These are political science, sociology, criminal justice, geography, history, and philosophy.

### **MISSION AND OBJECTIVES**

In keeping with the mission of the University, the Department assists students in attaining: 1) a general acquaintance with the social sciences; 2) knowledge of the subject matter and methods of Political Science and Sociology; 3) an understanding of the global relationships and interdependence of all peoples; 4) competence in analyzing and interpreting the complex problems of contemporary society; and 5) preparation for employment and/or further study.

### **PROGRAM OFFERINGS**

The Department offers curricula leading to the Bachelor of Arts degree in the School of Arts and Sciences in Political Science and in Sociology, and minors in Criminal Justice, History, Philosophy, Political Science, and Sociology. Curricula leading to the Bachelor of Science degree in the School of Education with majors in History and in General Social Science are also offered. Service courses in geography and philosophy are taught by the Department.

### **INTERSHIPS**

Three semester hours in the Political Science major program may be earned in an internship or cooperative work experience. Internships suitable for this purpose, however, are not always available. The minor in Criminal Justice requires an internship of three semester hours. Placement in these internships is arranged by the Department.

### **STUDENT ORGANIZATIONS**

The Department sponsors the Sociology and Criminal Justice Club for interested majors in Sociology and in the Criminal Justice minor. Additionally, the Pre-Law Club is a departmental club that assists departmental majors who are interested in attending law school. The Pre-Law Club is also open to interested students in any major.

The Political Science Program has established a campus chapter of Pi Sigma Alpha Honor Society. The Sociology Program has acquired a campus chapter of Alpha Kappa Delta, an international honorary sociology society.

### **DEPARTMENTAL REQUIREMENTS**

A major or minor in the Department follows the scholarship regulations of the University. The student is expected to complete the Core Curriculum Program and satisfy the requirements of the School of Arts and Sciences. Students who intend to teach in public school systems will follow the program of the School of Education. All Political Science majors must complete a minor. A grade of "C" or above must be earned in each major and minor course. All majors and minors are expected to participate in ongoing program area activities. Graduating majors must complete an exit interview and take the Graduate Record Examination or Law School Aptitude Test (LSAT).

## POLITICAL SCIENCE MAJOR

127 Credit Hours

The Political Science major consists of 32 semester hours (23 specified and 9 elective in courses prefixed PSC). All elective hours must come from 300- and 400- level courses and must include at least six hours at the 400 level. All Political Science majors must complete a minor. Political Science majors are encouraged to participate in a cooperative work experience or internship.

Political Science majors must take the following courses:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
PSC 201	Introduction to Political Science	3
PSC 205	American Government	3
PSC 206	State and Local Government	3
PSC 307	Comparative Government	3
PSC 308	International Relations	3
PSC 310	Blacks in American Politics	3
PSC 397	Program Seminar	0.5
PSC 398	Program Seminar	0.5
PSC 401	Western Political Thought	3
PSC 497	Program Seminar	0.5
PSC 498	Program Seminar	0.5
PSC Electives	Electives (300- and 400-level courses, with PSC prefixes, including 6 hours at the 400 level)	<u>9</u> 32

### Freshman Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	<sup>2</sup> ENG 102	Composition II	3
<sup>1</sup> ENG 101	Composition I	3		<sup>3</sup> Natural & Physical Science	4
MTH 112	Pre-Calculus Algebra	3	CMP 101	Fund. of Comp. & Info. Syst.	3
	<sup>3</sup> Natural & Physical Sci.	4	ART 101	Art Appreciation	3
HIS 101	World History I	3	MUS 101	Music Appreciation	<u>3</u>
PED	<sup>4</sup> Physical Educ. Activities	<u>2</u>			16
		16			

<sup>1</sup>ENG 101H or ENG 103 (international students) may be taken; <sup>2</sup>ENG 102H or ENG 104 (international students) may be taken. <sup>3</sup>BIO 101, BIO 101L or BIO 102, BIO 102L; CHE 101, CHE 101L or CHE 102, CHE 102L; PHY 101, PHY 101L or PHY 102, PHY 102L; <sup>4</sup>HED 101 or MSC 101 or MSC 102 may be taken.

### Sophomore Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 203	World Literature I	3	ENG 404	Black Literature	3
	<sup>5</sup> Elem. Foreign Language I	3	ENG 205	General Speech	3
PHL 201	Intro. to Philosophy	3		<sup>6</sup> Social Science	3
HIS 304	African-American Hist.	3	ECO	<sup>7</sup> Basic Economics <b>or</b>	(3)
PSC 201	Intro. to Political Science	<u>3</u>		Principles of Economics	(3)
		15		<sup>5</sup> Elem. Foreign Language II	3
			PSC 205	American Government	<u>3</u>
					18

<sup>5</sup>French, German, or Spanish; <sup>6</sup>PSY 201 or SOC 201; <sup>7</sup>ECO 200 or ECO 231 or ECO 232

**Junior Year**

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
HIS	201	American History I	3	HIS	202	American History II	3
ENG	304	Advanced Composition	3	ENG	205	Speech	3
GEO	214	World Regional Geography	3	PSC	307	Comparative Government	3
PSC	206	State & Local Government	3	PSC	310	Blacks in Amer. Politics	3
PSC	397	Program Seminar I	0.5	PSC	398	Program Seminar II	0.5
		<sup>8</sup> Approved Course in Minor	<u>3</u>			<sup>8</sup> Approved Course in Minor	<u>3</u>
			18.5				18.5

**Senior Year**

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
PSC	308	International Relations	3	PSC	401	Western Political Thought	3
PSC	497	Program Seminar III	0.5	PSC	498	Program Seminar IV	0.5
PSC		<sup>8</sup> Electives	6	PSC		<sup>8</sup> Elective	3
		<sup>8</sup> Approved Courses in Minor	<u>6</u>			<sup>8</sup> Approved Courses in Minor	<u>6</u>
			15.5				12.5

<sup>8</sup>All elective hours must come from 300 and 400 level courses and must include at least six hours at the 400 level.

**SOCIOLOGY MAJOR**

128 Credit Hours

The Sociology major consists of 33 semester hours (18 specified and 15 elective in courses prefixed SOC). At least 9 elective hours must come from 300 and 400 level courses. All Sociology majors must complete a minor. Each Sociology major must file a Sociology Record Check Sheet with the Department at the beginning of his/her matriculation.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SOC 201	Introduction to Sociology	3
SOC 210	Social Problems	3
SOC 301	Elementary Behavioral Statistics	3
SOC 441	Sociological Theory	3
SOC 443	Social Research	3
SOC 450	Senior Seminar	3
SOC Electives	Electives (at least 9 hours must come from 300- and 400-level courses)	<u>15</u>
		33

**Freshman Year**

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
ORI	101	Survival Skills	1	<sup>2</sup> ENG	102	Composition II	3
<sup>1</sup> ENG	101	Composition I	3			<sup>3</sup> Natural & Physical Science	4
MTH	112	Pre-Calculus Algebra	3	CMP	101	Fund. of Comp. & Info. Syst.	3
		<sup>3</sup> Natural & Physical Science	4	ART	101	Art Appreciation	<b>or</b> (3)
HIS	101	World History I	3	MUS	101	Music Appreciation	(3)
PED		<sup>4</sup> Physical Education Activities	<u>2</u>	HIS	102	World History II	<u>3</u>
			16				16

<sup>1</sup>ENG 101H or ENG 103 (international students) may be taken. <sup>2</sup>ENG 102H or ENG 104 (international students) may be taken. <sup>3</sup>BIO 101, BIO 101L and BIO 102, BIO 102L; CHE 101, CHE 101L or CHE 102, CHE 102L; PHY 101, PHY 101L or PHY 102, PHY 102L may be taken. <sup>4</sup>HED 101 or MSC 101 or MSC 102 may be taken instead of PED activities.

### Sophomore Year

First Semester	Sem. Hrs.	Second Semester	Sem. Hrs.
ENG 203	3	ENG 204	3
ENG 304	3		
PSC 201	3	PHL 201	3
SOC 201	3	SOC 210	3
PSY 201	3	ECO	3
	<u>15</u>		<u>15</u>

### Junior Year

First Semester	Sem. Hrs.	Second Semester	Sem. Hrs.
MGT 213	3		
	3		
SOC 301	3	ENG 205	3
SOC	3	SOC	6
	3		6
	<u>3</u>		<u>18</u>
	18		

<sup>5</sup>To be chosen from History, Political Science, Geography or Psychology.

<sup>6</sup>ECO 200 or ECO 231 or ECO 232 may be taken.

<sup>7</sup>At least 9 SOC elective hours must come from 300 and 400 level courses.

<sup>8</sup>Any minor may be chosen but advisor consultation recommended. No course may be used in both the major and the minor.

<sup>9</sup>Any course level 200 or above (Foreign Language, including 100 level courses may also be chosen) with advisor concurrence.

### Senior Year

First Semester	Sem. Hrs.	Second Semester	Sem. Hrs.
SOC 441	3	SOC 450	3
SOC 443	3	SOC	3
SOC	3		
	3		
	<u>3</u>		<u>15</u>
	15		

### MINOR IN CRIMINAL JUSTICE

A minor in Criminal Justice requires the following courses:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
CRJ 250	Introduction to Criminal Justice	3
CRJ 251	Rules of Evidence in Criminal Cases	3
*CRJ 458	Internship	3
	**Approved Criminal Justice Elective	<u>9</u>
		18

\*Prerequisites: Nine hours of Criminal Justice courses, including CRJ 250. In addition, students are required to attain a grade of "C" or better in each of the required Criminal Justice courses and may not be on academic probation before they are permitted to enroll in the Internship. \*\*Chosen in consultation with the student's advisor.

**MINOR IN HISTORY**

A minor in History requires the following courses in addition to HIS 101 World History I and HIS 102 World History II:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
HIS 104	Introduction to History as a Discipline	3
HIS 201	American History I	3
HIS 202	American History II	3
	*Approved History Electives from 300-400 Level Courses	<u>9</u>
		18

\*History minors may choose any course with an HIS prefix at the 300 or 400 level, except HIS courses specified by course title in the program.

**MINOR IN PHILOSOPHY**

A minor in Philosophy requires the following courses in addition to PHL 201:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
PHL 203	Logic and Philosophy of Science	3
PHL 301	History of Western Philosophy I	3
PHL 302	History of Western Philosophy II	3
PHL 406	Ethics	3
	*Approved Philosophy Electives	<u>6</u>
		18

\*Philosophy minors may choose any course with a PHL prefix at the 300 or 400 level, except PHL courses specified by course title in the program.

**MINOR IN POLITICAL SCIENCE**

A minor in Political Science requires the following courses:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
PSC 201	Introduction to Political Science	3
PSC 205	American Government	3
PSC 206	State and Local Government	3
	*Approved Political Science Electives	<u>9</u>
		18

\*Political Science minors may choose any course with a PSC prefix at the 300 or 400 level, except PSC courses specified by course title in the program.

**MINOR IN SOCIOLOGY**

A minor in Sociology requires the following courses:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
SOC 201	Introduction to Sociology	3
SOC 210	Social Problems	3
SOC 441	Sociological Theory	3
	*Approved Sociology Electives	<u>9</u>
		18

\*Sociology minors may choose any course with an SOC prefix, except courses specified by title in the program.

## COURSE DESCRIPTIONS

- CRJ 250 *Introduction to Criminal Justice* – 3 hrs. This course is designed to survey the entire American criminal justice process and systems including criminal laws, police subsystem, judicial subsystem, and correctional subsystem. Issues in America’s criminal justice system will be integrated into the coverage. **Prerequisite: None.** (Offered Fall)
- CRJ 251 *Rules of Evidence in Criminal Cases* – 3 hrs. This course covers the foundation and rationale of rules of evidence in criminal cases as well as rules of evidence pertaining to the various types of evidence, such as testimony of witnesses, judicial notice, hearsay, confession, physical evidence, etc. **Prerequisite: CRJ 250.** (Offered Spring)
- CRJ 252 *Criminal Law and Procedure* – 3 hrs. Consideration of selected problems in criminal law of special significance to police officers and administrators. **Prerequisite: CRJ 250.** (Offered Fall)
- CRJ 253 *Deviant Behavior* – 3 hrs. A study of processes by which some members of society become deviant. Readings will deal with particular forms of deviance such as mental illness, suicides, prostitution, use of drugs, riots, vice, and white collar crime in an effort to arrive at a general theory of the causes of deviance. **Prerequisite: CRJ 250.** (Offered Spring)
- CRJ 254 *Introduction to Correction* – 3 hrs. This course examines the origin and current status of various aspects of the correctional system including jails, prisons, community-based correctional programs and the philosophies of punishment and justice. Problems and issues associated with the correctional system will be discussed. **Prerequisite: CRJ 250.** (Offered Fall)
- CRJ 323 *Juvenile Delinquency* – 3 hrs. This course examines the nature and causes of juvenile delinquency. It also reviews the juvenile justice system; and programs for treatment, control and prevention of juvenile delinquency. **Prerequisite: SOC 201.** (Offered Spring)
- CRJ 351 *Criminology* – 3 hrs. This course is an introduction to the field of criminology. Specifically, it covers the nature of crime, the causes of criminal behavior and the reactions to crime. Theories of crime causation are also discussed. **Prerequisite: CRJ 250.** (Offered Fall)
- CRJ 355 *Criminal Justice Administration* – 3 hrs. This course provides analysis of administration and management in a variety of criminal justice settings and of their related problems and issues. Major topics include the unique nature of criminal justice organizations, work motivation, job design, communications, leadership or management styles, management by objectives, managing employee performance, organizational behavioral modification, decision making, and organizational change and development. **Prerequisite: CRJ 250.** (Offered Spring)
- CRJ 356 *Police Administration* – 3 hrs. Organization and function of law enforcement agencies are covered. Police problems and practices are evaluated. **Prerequisite: CRJ 250.** (Offered Spring)
- CRJ 357 *Probation and Parole* – 3 hrs. This course provides an introduction to the history, administration, and various components/processes of probation and parole, such as pre-sentence investigation, classification, supervision of probationers, conditions of probation, and revocation hearings. Issues in probation and parole are also discussed. **Prerequisite: CRJ 250.** (Offered Fall)
- CRJ 458 *Internship* – 3 hrs. This course gives students an opportunity to have field experience by working in various criminal justice agencies. **Prerequisite: CRJ 250.** Additionally, the student must have completed a total of at least 9 hours of Criminal Justice courses with a “C” or better in each of the required Criminal Justice courses and may not be on academic probation before registering for Internship. (Offered Fall and Spring)

- GEO 213 *Principles of Geography* – 3 hrs. An introductory course that deals with the fundamentals of geography as a science, including physical, urban, political, social, economic, and demographic aspects of geography. It also focuses on the use of maps and the geographical information system as tools of geographers. **Prerequisite: None.** (Offered Fall)
- GEO 214 *World Regional Geography* – 3 hrs. A study which includes the geographical profile of world nations and major regions focusing on the relationship of cultural and environmental factors. Emphasis is given to the study of Third World countries. **Prerequisite: None.** (Offered Spring)
- GEO 215 *Global Profile* – 3 hrs. A course designed to help students become aware of global realities and concerns and help them understand the gravity of the world's future problems, particularly global population, resources, urbanization and technological development. **Prerequisite: None.** (Offered Spring)
- GEO 401 *Urban Geography* – 3 hrs. Explains various concepts of urban geography and the role of geographic site and location in the evolution of cities. It includes study of global urbanization, urban hierarchy, morphology, land use patterns, classification of cities and town-country relations. A special focus on slums and squatters in developing countries is included. **Prerequisite: None.** (Offered Spring)
- HIS 101 *World History I* – 3 hrs. A survey of the evolution of civilization with an effort to show the interrelationship of all cultures from earliest times (Pre-History) through the 15th century. **Prerequisite: None.** (Offered Fall and Spring)
- HIS 102 *World History II* – 3 hrs. A survey of the evolution of civilization with an effort to show the interrelationship of all cultures from 1500 through the present. **Prerequisite: None.** (Offered Fall and Spring)
- HIS 104 *Introduction to History as a Discipline* – 3 hrs. A course designed to introduce students to the nature of the discipline, fields of study, and careers in history (academic and non-academic). This focus is on the essential characteristics of "history proper," historical subject matter and fields of study; the relationship of history to other disciplines; historical techniques, (i.e., how to study history, writing about history, and historical research); as well as the uses of history. **Prerequisite: None.**
- HIS 105 *Contemporary World History* – 3 hrs. A course exploring major developments throughout the world from World War II to the present. It includes such topics as Cold War, African and Asian nationalism, Third World development, United Nations, economic disparity between north and south, and disintegration of communist Europe, as well as technological, intellectual, and cultural developments in the period. **Prerequisite: None.** (Offered Spring as justified by demand)
- HIS 201 *American History I* – 3 hrs. A study of the political, economic, social and religious development of the United States from the earliest settlements to 1877. **Prerequisite: None.** (Offered Fall and Summer)
- HIS 202 *American History II* – 3 hrs. A study of the political, economic, social and religious development of the United States from 1877 through the present. **Prerequisite: None.** (Offered Spring and Summer)
- HIS 203 *Foundations of American History and Government* – 3 hrs. A survey course designed to review the historical events which influenced the major economic, political, and social development of America. **Prerequisite: None.** (Offered Fall, Spring and Summer)



- HIS 204 *Introduction to Africana Studies* – 3 hrs. This course deals with the basic origin and orientation of the study of the African American experience. It is concerned with the relationships between African American Studies, Africana Studies, and other related fields of study. Its focus is a multi-dimensional and interdisciplinary perspective and approach to the African American experience. The emphasis is placed on ideas and developments that have influenced and shaped African American studies and its relation to African and Diasporan studies. **Prerequisite: None.** (Offered as justified by demand)
- HIS 205 *The Historical Essay: An Introduction to Creative Historical Thinking and Writing* – 3 hrs. A course designed to develop historical thinking and writing skills through the use of primary documents. The core of the course involves the examination of primary documents that reflect a broad variety of history. Activities include analyzing and interpreting primary documents; writing historical background to primary documents; and constructing historical context, with emphasis on fictional and non-fictional historical events, movements and individuals. **Prerequisite: None.** (Offered as justified by demand)
- HIS 206 *Alabama History* – 3 hrs. A study of the historical development of Alabama and its relationship to the growth of the United States as a whole. **Prerequisite: None.** (Offered Fall, usually alternate years)
- HIS 301 *English History I* – 3 hrs. A survey of the political, cultural, and social development of England from pre-history through 1688. **Prerequisite: None.** (Offered Fall)
- HIS 302 *English History II* – 3 hrs. A survey of the political, cultural, and social development of England, the Empire and the Commonwealth of Nations from 1689 through the present. **Prerequisite: None.** (Offered Spring)
- HIS 303 *History of Africa* – 3 hrs. An introduction to African history which surveys its main periods or phases. Beginning with the geography of the continent, the origin of man and the peopling of Africa, it goes from ancient Egypt to colonization. The emphasis is on events and underlying forces impacting the development and history of Africa as a whole. **Prerequisite: None.** (Offered as justified by demand)
- HIS 304 *African-American History* – 3 hrs. An introduction to African American history which surveys the background for and the arrival of Africans in America, tracking their experience to the Post-Reconstruction Period. The emphasis is on a critical understanding of those events and situations that have had particular significance for and impact on African Americans. **Prerequisite: None.** (Offered Fall, usually alternate years)
- HIS 305 *Modern Asia* – 3 hrs. A study of the interrelationship of the Western nations with the countries of Asia. **Prerequisite: None.** (Offered Spring, usually alternate years)
- HIS 306 *The Frontier and American Expansion* – 3 hrs. A focus on the frontier and American expansion as these relate to the westward movement in American history. The emphasis is on the processes of regionalism and expansion growing out of America's general development and their impact on the life of the nation at various levels and times. **Prerequisite: None.** (Offered as justified by demand)
- HIS 315 *Military History* – 3 hrs. An introduction to the study of conflicts in arms, campaigns and battles, beginning with the colonial and European heritage. A thorough review of the American Revolution, the War of 1812, the Mexican War, the Civil War, the Army and the Indian Wars, World War I, World War II, the Korean War, the U.S. Army in Vietnam and later conflicts. **Prerequisite: None.** (Offered Spring)
- HIS 397 *Program Seminar I* – 0.5 hr. Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to program majors. **Prerequisite: None.** (Offered Fall)

- HIS 398 *Program Seminar II* – 0.5 hr. Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to program majors. **Prerequisite: None.** (Offered Spring)
- HIS 402 *History of Latin America* – 3 hrs. An introduction to Latin American history starting with the geography of the cultural region and its earliest people and going to the national period. The focus is on those events impacting the development and institutions of the region as a whole. **Prerequisite: None.** (Offered Fall, usually alternate years)
- HIS 403 *Modern Europe* – 3 hrs. The history of modern Europe from World War I to the present, with emphasis on the Treaty of Versailles, League of Nations, rise and fall of totalitarian governments, World War II, United Nations, the Cold War and the confrontation between East and West. **Prerequisite: None.** (Offered Fall, usually alternate years)
- HIS 405 *American Diplomacy* – 3 hrs. A study of the forces which have influenced decisions in the United States' relationships with other peoples. The colonial background, federalist, and republican leadership, territorial expansion, the Civil War, Seward, Fish, and Blaine, the rise of imperialism, the Far East, Latin America, World Wars I and II, and the Cold War are all covered. **Prerequisite: None.** (Offered as justified by demand)
- HIS 406 *20th Century U.S.* – 3 hrs. The historic development of the United States as it moved into the ranks of the great world powers. Concentrates on social and economic reform and foreign policy. **Prerequisite: None.** (Offered Spring)
- HIS 407 *Constitutional History of the U.S.* – 3 hrs. An analysis of the growth and development of the American constitutional system, with particular emphasis upon the post World War II period. **Prerequisite: None.** (Offered Fall, upon sufficient demand)
- HIS 408 *History of the South Since 1865* – 3 hrs. An emphasis on Reconstruction Redemption, the New South, the Populist and Progressive Movements, the impact of two world wars, the Depression, the Intellectual Renaissance, TVA, Civil Rights, the Black Movements, the Labor Movement, and the South and the nation. **Prerequisite: None.** (Offered Fall, usually alternate years)
- HIS 409 *U.S. Reconstruction* – 3 hrs. The transformation of American society and government during the post-Civil War years with special emphasis on the problems of the South. **Prerequisite: None.** (Offered upon sufficient demand)
- HIS 496 *History Internship and Co-op Program* – 3-6 hrs. An emphasis on the application of historical research methods and principles of public history to non-academic careers through observation and practical experience. **Prerequisite: Completion of 21 semester hours in upper level history courses.** (Offered Fall, Spring, and Summer, as internships become available)
- HIS 497 *Program Seminar I* – 0.5 hr. Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to program majors. **Prerequisite: HIS 397.** (Offered Fall)
- HIS 498 *Program Seminar II* – 0.5 hrs. Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to program majors. **Prerequisite: HIS 398.** (Offered Spring)
- HIS 499 *Senior History Seminar* – 3 hrs. An investigation of the problems and methods of historical research and writing. **Prerequisite: Completion of 21 semester hours in upper level history courses.** (Offered Spring, usually alternate years)
- PHL 201 *Introduction to Philosophy* – 3 hrs. A study of the intellectual problems human beings face in their quest for understanding of themselves and the world. Basic problems in metaphysics, epistemology, ethics, and logic are stressed. **Prerequisite: None.** (Offered Fall, Spring and Summer)

- PHL 203 *Logic and Philosophy of Science* – 3 hrs. An introduction to deductive and inductive reasoning with special reference to the nature of science. **Prerequisite: None.** (Offered upon sufficient demand)
- PHL 301 *History of Western Philosophy I* – 3 hrs. A survey of major philosophical concerns, with emphasis upon their origin and subsequent development. The course is organized by cultural contexts and/or periods from the Pre-Socratics through the Renaissance. **Prerequisite: PHL 201.** (Offered upon sufficient demand)
- PHL 302 *History of Western Philosophy II* – 3 hrs. A survey of major philosophical concerns, with emphasis upon their origin and subsequent development. The course is organized by cultural contexts and/or periods from 1600 through the present. **Prerequisite: PHL 201.** (Offered upon sufficient demand)
- PHL 304 *Oriental Philosophy and Religion* – 3 hrs. A survey of concepts in Oriental philosophy, with emphasis upon their origin and, where applicable, subsequent development. **Prerequisite: None.** (Offered upon sufficient demand)
- PHL 305 *African Philosophy* – 3 hrs. A survey of the major concepts in African philosophy, with emphasis upon their origin and, where applicable, subsequent development. **Prerequisite: None.** (Offered upon sufficient demand)
- PHL 401 *Philosophy of Religion* – 3 hrs. A critical examination of fundamental religious problems: the nature and existence of God, the relation between faith and reason, and the cognitive significance of religious language. **Prerequisite: PHL 201.** (Offered upon sufficient demand)
- PHL 404 *Aesthetics* – 3 hrs. A study of the expressiveness of objects and actions with reference to the theories of various philosophers and artists concerning the nature of beauty and the criteria of art. **Prerequisite: PHL 201.** (Offered upon sufficient demand)
- PHL 406 *Ethics* – 3 hrs. A study of the nature of the good, moral obligation, and judgment, illustrated by reference to contemporary social and political problems. **Prerequisite: PHL 201.** (Offered upon sufficient demand)
- PSC 201 *Introduction to Political Science* – 3 hrs. An introduction to the discipline of political science. The course provides an understanding of the basic foundations and fundamentals of the discipline and delineates the scope, approaches, and concepts of political science. Included is a survey of major areas and aspects of the political process ranging from political analysis to international relations. **This course is a prerequisite for all other political science courses.** (Offered Fall)
- PSC 205 *American Government* – 3 hrs. A study of the constitutional framework, its origin, nature, and organization. The rights and duties of citizens of the United States and the administration and functions of the government as they affect citizens and their institutions are emphasized. **Prerequisite: PSC 201.** (Offered Fall, Spring, and Summer)
- PSC 206 *State and Local Government* – 3 hrs. A study of the institutions, structures, and functions of the American political process from the perspective of states and local communities. **Prerequisite: PSC 201.** (Offered Spring)
- PSC 307 *Comparative Government* – 3 hrs. A study of the varied institutions through which people have attempted to regulate their affairs. The major world governments are analyzed with considerable attention given to newly emerging countries. **Prerequisite: PSC 201.** (Offered Fall, usually alternate years)
- PSC 308 *International Relations* – 3 hrs. A critical analysis of the policies implemented by the major countries of the world in their relationship with each other, from the eighteenth century to the present. Emphasis is placed on the causes and consequences of war and on war as an instrument of national policy. **Prerequisite: PSC 201.** (Offered Spring, usually alternate years)

- PSC 309 *Introduction to African Politics* – 3 hrs. An introductory analysis of African politics. This course covers the traditional African political past and extends its impact to the contemporary period. The course focuses on major political developments, ranging from colonialism to independence to the era of the military coup. Included are discussions of major personalities as well as the diverse political-economic ideological variants that have emerged on the African continent. **Prerequisite: PSC 201.** (Offered Spring, usually alternate years)
- PSC 310 *Blacks in American Politics* – 3 hrs. A political history of Black Americans from reconstruction to the present. **Prerequisite: PSC 201.** (Offered Spring, usually alternate years)
- PSC 312 *Revolution in the Third World* – 3 hrs. A survey of revolutionary movements in selected Third World countries: China, Vietnam, Mexico, Cuba, and three African nations. **Prerequisite: PSC 201.** (Offered Fall, usually alternate years)
- PSC 313 *U.S. Foreign Policy* – 3 hrs. An examination of the formation and execution of American foreign policy since World War II. In addition to an emphasis on the historical and institutional framework of foreign policy, the course also focuses on some of the prominent issues/areas which occupy the present foreign policy agenda of the U.S. **Prerequisite: PSC 201.** (Offered Fall, usually alternate years)
- PSC 314 *Politics of the Middle East* – 3 hrs. A survey course of key Middle East countries, including Saudi Arabia, Syria, Iraq, Jordan, United Arab Emirates, Egypt, and Israel. The course covers the historical background of the region, as well as an up-to-date analysis of contemporary issues and problems. **Prerequisite: PSC 201.** (Offered Fall, usually alternate years)
- PSC 315 *Urban Politics* – 3 hrs. An introductory inquiry into the politics of urban areas. While the primary focus is the study and use of power and influence in American cities, emphasis is also given to identifying historical and contemporary forces which have led to the development of the urban place as a primary form of spatial and political organization. **Prerequisite: PSC 201.** (Offered Spring, usually alternate years)
- PSC 397 *Program Seminar I* – 0.5 hr. Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to program majors. **Prerequisite: PSC 201.** (Offered Fall)
- PSC 398 *Program Seminar II* – 0.5 hr. Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to program majors. **Prerequisite: PSC 201.** (Offered Spring)

- PSC 401 *Western Political Thought* – 3 hrs. A survey of political thought contained in the western intellectual tradition. By examining the major contributions and controversies generated by a select group of political philosophers, emphasis is placed upon the idea that politics and government represent problematical exercises which require serious intellectual reflection and inquiry. **Prerequisite: PSC 201.** (Offered Spring)
- PSC 402 *Seminar on American Politics* – 3 hrs. A survey analysis of contemporary problems and issues. The course first treats the broad ideological and historical forces which have helped to shape the contemporary American political setting. This is followed by an in-depth focus and discussion of the fundamental issues and problems of this era. **Prerequisite: PSC 201.** (Offered Spring, usually alternate years)
- PSC 403 *Constitutional Law* – 3 hrs. A focus on the decision-making process of the United States Supreme Court. It will include the analysis of major court cases through examination of the justices' majority and minority opinions. The cases and opinions will provide insight into the legal resolution of key social, political and economic issues that confront the nation. The course will also examine the operation of the federal court system with a specific focus on the behind-the-scenes operation of the Supreme Court. **Prerequisite: PSC 201.** (Offered upon sufficient demand)
- PSC 404 *American Political Thought* – 3 hrs. A survey of American political thought from America's beginning as a colony to the present. Among the themes to be addressed are the nature and evolution of liberalism, the fusion of liberalism and capitalism, and the accommodation between democracy and liberalism - capitalism. **Prerequisite: PSC 201.** (Offered Fall, usually alternate years)
- PSC 415 *Principles of Public Administration* – 3 hrs. A study of the basic concepts of public administration and the administrative problems of organization, procedure, personnel, financial administration, administrative law, and public relations. **Prerequisites: PSC 201, PSC 305, and PSC 306.** (Offered Summer)
- PSC 497 *Program Seminar III* – 0.5 hr. Bi-weekly sessions involving presentations/discussions of issues, research and concepts of interest to program majors. **Prerequisite: PSC 201.** (Offered Fall)
- PSC 498 *Program Seminar IV* – 0.5 hr. Bi-weekly sessions involving presentations/discussions of issues, research and concepts of interest to program majors. **Prerequisite: PSC 201.** (Offered Spring)
- PSC 499 *Internship* – 3-6 hrs. Field experiences providing application and observation of concepts and ideas discussed in the classroom. Students are assigned to appropriate state, local, federal, and private agencies. **Prerequisite: PSC 201.** (Offered Fall, Spring and Summer, upon availability of internships)
- SOC 201 *Introduction to Sociology* – 3 hrs. This course provides an analysis of social interaction, the social process, society, culture, social structures, and other concepts fundamental to sociological understanding. **Prerequisite: None.** (Offered Fall and Spring)
- SOC 210 *Social Problems* – 3 hrs. The setting of social problems and the analysis of the major problems of contemporary America are considered. The conditions surrounding problems, theories about causation and amelioration are included. **Prerequisite: SOC 201.** (Offered Spring)
- SOC 213 *Marriage and the Family* – 3 hrs. The basic social institution in all its ramifications; the processes of mate selection, socialization of children, adjustments inherent in marriage and family life, and the impact of social change from the vantage of the professional sociologist are all given consideration. **Prerequisite: SOC 201.** (Offered Fall)
- SOC 253 *Deviant Behavior* – 3 hrs. A study of processes by which some members of society become deviant. Readings will deal with particular forms of deviance such as mental illness, suicides, prostitution,

use of drugs, riots, vice, and white collar crime in an effort to arrive at a general theory of the causes of deviance. **Prerequisite:** CRJ 250. (Offered Spring)

- SOC 301 *Elementary Behavioral Statistics* – 3 hrs. **(PSY 301)** Basic and essential statistical concepts are introduced and applied to behavior measurements. Descriptive tools of central tendency, variability, and standard scores are considered, as well as correlation and basic inferential tools of the t-test and simple analysis of variance. **Prerequisite:** SOC 201. (Offered Fall and Spring)
- SOC 310 *Social Change and Collective Behavior* – 3 hrs. This course involves an analysis of the linkage between science and technology by focusing on collective behavior as the consequences of the interplay between abstract principles and practical application. Social change is treated as inherent in the characteristics of social systems (i.e., social organization and social behavior aspects of human experience) such that the various collective activities are ordered in some sequence of a cyclical pattern of recurrence. **Prerequisite:** SOC 201. (Offered Fall, upon sufficient demand)
- SOC 323 *Juvenile Delinquency* – 3 hrs. This course examines the nature and causes of juvenile delinquency. It also reviews the juvenile justice system and programs for treatment, control and prevention of juvenile delinquency. **Prerequisite:** SOC 201. (Offered Fall)
- SOC 325 *Rural Sociology* – 3 hrs. Rural life is subjected to sociological analysis with emphasis on the rural-urban dichotomy, the effects of personality, and the urbanization of rural society. **This is a junior-level course. Prerequisite:** SOC 201. (Offered Spring, upon sufficient demand)
- SOC 326 *Urban Sociology* – 3 hrs. This course provides an analysis of urban concepts and the impact of urbanization on social relations, social institutions, and the national interest. **This is a junior-level course. Prerequisite:** SOC 201. (Offered Fall)
- SOC 328 *Social Organization* – 3 hrs. This course deals with the major trends in political, economic, and social values and perspectives of the emerging American scene considered in relation to changes in the distribution of power, technology, and character development in terms of small groups and complex organizations. **Prerequisite:** SOC 210. (Offered Fall, upon sufficient demand)
- SOC 330 *Social Psychology* – 3 hrs. The central focus of this course is upon the relationships that prevail between groups and individuals. Social influence, social attraction, and the interplay of cultural, social, and psychological factors in becoming a personality are included. **Prerequisite:** SOC 201. (Offered Spring)
- SOC 332 *Educational Sociology* – 3 hrs. The focus of this course is upon socialization in the educational institution, and upon the structure (status and roles), interactional patterns, and culture of the school. **Prerequisite:** SOC 201. (Offered Spring)
- SOC 334 *Cultural Anthropology* – 3 hrs. This course considers the different ways man copes with his natural setting and social milieu, different bodies of customs, variations in the socialization process, and the transmission of cultural heritage. Primitive societies are the major ones considered. **Prerequisite:** SOC 201. (Offered Fall)
- SOC 336 *Contemporary Social Movements* – 3 hrs. The nature, causes, development, forms, functions, and outcome of recent social movements are analyzed. Theories about social movements as a variation of collective behavior are included. **Prerequisite:** SOC 201. (Offered Spring, upon sufficient demand)

- SOC 351 *Criminology* – 3 hrs. This course will give an introduction to the field of criminology. Specifically, it will cover the nature of crime, the causes of criminal behavior and the reactions to crime. Theories of crime causation will also be discussed. **Prerequisite: CRJ 250.** (Offered Spring)
- SOC 432 *Minorities in American Life* – 3 hrs. This course treats the various minority groups in America, their relations with the dominant group, their subordination, and problems arising from minority status. **Prerequisite: SOC 201.** (Offered Fall, upon sufficient demand)
- SOC 434 *Social Stratification* – 3 hrs. A study of social inequalities and differentiation as related to social structures and social systems analysis of patterns of interaction within and between social classes, and the implications of stratification of human group behavior. **Prerequisite: SOC 201.** (Offered Spring, upon sufficient demand)
- SOC 441 *Sociological Theory* – 3 hrs. This course examines the classical and contemporary theoretical models in sociology and investigates the development of sociological thought. **Prerequisite: SOC 201.** (Offered Fall)
- SOC 443 *Social Research* – 3 hrs. This course provides an introduction to sociological research including the principles of research design, and the collection, analysis, and reporting of data through actual field experience. **Prerequisite: SOC 201.** (Offered Fall)
- SOC 445 *Population Problems* – 3 hrs. This course provides an introduction to demography and population research. It includes population theory, trends and rates in natural increase, population composition, distribution, planning, and human ecology. **Prerequisite: SOC 201.** (Offered Spring, upon sufficient demand)
- SOC 448 *Social Legislation* – 3 hrs. A survey of the development, philosophy, and changes in American social legislation and of its impact upon contemporary life. The last 30 years are stressed. **Prerequisite: SOC 201.** (Offered Fall, upon sufficient demand)
- SOC 450 *Senior Seminar* – 3 hrs. This is a concluding course focused upon sociological concepts, theories, contributors, literature, and methods. This should be the terminal major course. **Prerequisite: SOC 201.** (Offered Spring)

**DEPARTMENT OF SOCIAL WORK  
UNDERGRADUATE SOCIAL WORK PROGRAM**

102 Bibb Graves Hall  
(256) 372-5475

The Social Work Program at AAMU offers the Bachelor of Arts degree in Social Work.

**MISSION/OBJECTIVES**

The undergraduate Social Work curriculum prepares students for generalist social work practice. Systems theory, the strengths perspective and the ecological model to problem solving are used as the framework for generalist practice. The curriculum, based upon a liberal arts perspective, prepares students for the professional foundation. Generalist social workers address a variety of social issues, using multi-method, multi-level approaches within a variety of practice settings to enhance the social functioning of individuals, groups, families, organizations, and communities.

To develop knowledge, skills and values in the areas of human behavior and the social environment, social work practice, research, social policy and field instruction, various instructional methods are used to promote self-assessment, critical thinking and professional use of self. The program also educates students about the forms and mechanisms of oppression and discrimination and challenges them to develop strategies that advance social and economic justice.

The primary purpose of the Program is to prepare students for entry level generalist professional social work practice with diverse and impoverished populations, and oppressed groups in rural and urban settings.

The Social Work Program will achieve its mission by meeting the following objectives:

1. To prepare students for competent, empathic and ethical generalist social work practice with diverse systems of all sizes in rural and urban areas.
2. To recruit, retain, and graduate minority students for employment at the baccalaureate level or advanced study.
3. To facilitate the capacity for self-assessment, critical thinking and the professional use of self.
4. To provide students with the necessary skills and abilities to actively advocate on behalf of oppressed and at-risk populations and to continuously work to create a just and humane society.
5. To facilitate in students an understanding, appreciation and respect for the positive value of diversity.
6. To strengthen the quality of social service delivery in the State of Alabama and the region through employment of qualified entry level professional social workers.

The curriculum of the Social Work Program is based on the Program's objectives. The objectives reflect generalist training. The specific curriculum objectives and content extend the program objectives and therefore reflect the generalist problem-solving framework.

**UNDERGRADUATE ACCREDITATION**

The Social Work Program was initially accredited by the Council on Social Work Education in April 1980. In June 1986, the Program's accreditation was reaffirmed by the Council for the period (1986-1993) and (1993-2002). In June 2002, the Program's accreditation was reaffirmed for an eight-year cycle (2002-2010).



## **ADMISSIONS**

There are several steps involved in the admission of a student to the Undergraduate Social Work Program at AAMU.

1. Admission to the University.
2. Completion of prerequisite paraprofessional liberal arts courses.
3. Formal verbalization of an interest in Social Work as a career and completion of an Undergraduate Social Work Program application at A&M University.
4. Successful completion of an assessment interview with a full-time Social Work Program faculty member(s) and successful consideration by the Bachelors of Social Work program faculty with a recorded vote(s).
5. Official declaration of Social Work as the major through the formal registration process.
6. Students must have an overall grade point average of 2.0 (C) and no less than a grade of “C” in the SWK 200 Introduction to Social Welfare Course.

## **LIBERAL ARTS REQUIREMENTS**

Social Work, as is true with all professions, depends on selected knowledge, which is subsequently organized in a manner to provide a certain perspective of reality. At AAMU, this knowledge is primarily drawn from Mathematics, World History, Political Science, Economics, English, Biology, Psychology, Philosophy, Sociology, Humanities, Art, and Music. In addition to the knowledge provided by these areas, certain values and ethics are also extracted for use in conjunction with this knowledge. The liberal arts perspective promotes the idea of graduates as productive citizens of the world.

## **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

Financial assistance includes the IV-E Child Welfare stipend for students interested in future employment with the Department of Human Resources. Work-study programs are available in the Social Work Program.

## **FIELD INSTRUCTION**

Field instruction is that part of the curriculum designed to provide experiences in working with individuals, families, groups and communities. Through this experience, the student is given the opportunity to test out those skills and theories taught in the classroom. Differing from the classroom, however, the learning is more direct, immediate, and personal. It is an active process with emphasis on participation. The opportunity is provided for the student to deepen and extend both foundation knowledge, professional values/ethics and skill-based content.

## **STUDENT PROFESSIONAL ORGANIZATIONS**

Social Work majors, with a 3.3 cumulative grade point average can be considered for membership in Chi Iota Chapter of Phi Alpha National Social Work Honor Society. Phi Alpha is a national Social Work honor society established for the purpose of providing a closer bond among Social Work students and to promote humanitarian goals and ideals. Phi Alpha fosters high standards of education for Social Work students and invites into its memberships those who have attained excellence in scholarship and achievement in Social Work.

The Social Work Club was established in 1975 for the purpose of helping students to develop meaningful relationships with community organizations through service projects and activities. It was also formed to promote academic excellence and professional development of students by encouraging participation in professional meetings, conferences, workshops, and leadership roles.

**UNDERGRADUATE SOCIAL WORK PROGRAM**

126 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	ENG 102	Composition II	3
ENG 101	Composition I	3	HIS 102	World History II	3
HIS 101	World History I	3	PHY 101	Physical Science & Lab	3
MTH 110	Finite Math or higher	3	PED	Physical Ed	2
MUS 101	Music <b>or</b>	(3)	SWK 200	Intro. Social Welfare	3
ART 101	Art Appreciation	(3)		Elective	<u>3</u>
HED 101	Personal Comm. Health	<u>2</u>			18
		15			

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
BIO 101	Biology & Lab	4	BIO 102	Biology & Lab	4
ENG 203	World Literature I	3	ENG 204	World Literature II	3
PHL 201	Intro. to Philosophy	3	SWK 201	Intro. to Social Work*	3
SOC 201	Intro. to Sociology	3	PSY 201	General Psychology	3
101	Foreign Language ***	<u>3</u>	102	Foreign Language***	<u>3</u>
		16			16

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 205	General Speech	3	ENG 304	Advanced Composition	3
SWK 301	Human Behavior I*	3	PSY 301	Elem. Behavior Statistics	3
SWK 304	Diverse Populations	3	SWK 302	Human Behavior II*	3
ECO 200	Basics of Economics	(3)	SWK 305	Rural Human Services*	3
PSC 201	Intro to Pol. Science <b>or</b>	(3)	SWK 306	Art of Interviewing*	3
PSC 205	Amer. Gov. <b>or</b>	(3)	SWK 309	Soc Work Methods**	<u>3</u>
PSC 206	State & Loc. Gov.	(3)			18
SOC 210	Social Problems	<u>3</u>			
		18			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
	Elective	3	SWK 407	Field Instruction**	8
SWK 310	Social Work Methods**	3	SWK 407L	Field Instruction Seminar**	3
SWK 403	Social Welfare Policies*	3	SWK 415	Senior Seminar in Res**	<u>2</u>
SWK 410	Social Work Res. Meth.**	<u>3</u>			13
		12			

\*Major Courses  
 \*\*Majors Only  
 \*\*\*Spanish Recommended, but German or French may be selected

Social Work majors are required to complete a total of 126 hours in order to meet the requirements for a **Bachelor of Arts Degree in Social Work**. **Majors must earn grade of “C” or better in all social work courses.**

**NOTE:** The Curriculum must be followed as outlined with courses taken in sequential order. There is **no** minor offered in Social Work.

## COURSE DESCRIPTIONS

- SWK 200      *Introduction to Social Welfare* – 3 hrs. This course examines the development of social welfare as a social institution from a historical perspective. Emphasis is placed on social values in the United States. Society’s views about helping people, the resources that are allocated to helping efforts, the way help is provided and to whom, and the major helping programs through which help is delivered are examined. The linkage between social problems, social values, and social institutions is demonstrated. **Prerequisite: None.** (Offered Spring and Fall)
- SWK 201      *Introduction to Social Work* – 3 hrs. This course introduces Social Work as a profession. It traces the origin and development of the profession; defines and illustrates the problems of social functioning; provides social work services in various settings; and presents ethics and values appropriate for practice, organizations for the profession, professional issues and skill development. **Prerequisite: SWK 200.** (Offered Spring and Fall)
- SWK 205      *Gerontology - Aging and Problems of the Aged* – 3 hrs. This course is designed to give students an overview of the unique problems faced by the elderly in our society. Students are made aware of the societal attitudes toward the aged. Biological factors, psychological problems, health, retirement, housing, personal and social aspects of death, and other areas of concern are presented. **Prerequisite: None.** (Offered Spring)
- SWK 301      *Human Behavior and Social Environment I* – 3 hrs. This course is designed to provide Social Work students with basic knowledge to understand individuals, groups, collective interactions, and behavior in terms of their biological, psychological, and social bases. **Prerequisites: BIO 101, BIO 102, PSY 201, SWK 200, and SWK 201.** (Offered Fall)
- SWK 302      *Human Behavior and Social Environment II* – 3 hrs. This course is designed to extend the knowledge base introduced in Human Behavior I. Emphasis is placed on behaviors that are significant to professionals in human services. Critical incidents are utilized to analyze behaviors of selected individuals, groups, and communities. **Prerequisite: SWK 301.** (Offered Spring)
- SWK 303      *Poverty and Deprivation* – 3 hrs. This course describes the causes of poverty and its relationship to other social problems. A historical perspective is offered to help students understand the impact of the Great Depression in changing the values of the American people toward people in need. Programs that combat poverty are discussed and critiqued. Causes of poverty and populations impacted are explored. **Prerequisite: None.** (Offered Fall and Spring)
- SWK 304      *Diverse Populations* – 3 hrs. This course is designed to sensitize students to accept differences among people and their experiences. Emphasis is placed on the differences among cultural groups and how differences are perceived through a majority cultural context and the impact on achieving success. Students explore the relationship of their own personal values and those of the profession. Personal stereotypes that limit their perceptions of client strengths are identified and confronted. As a result, students become better prepared to provide competent service to a diverse client population. **Prerequisites: SWK 200 and SWK 201.** (Offered Spring and Fall)
- SWK 305      *Rural Human Services* – 3 hrs. This course is designed to provide content for understanding service delivery to at-risk rural populations. The uniqueness of rural lifestyles and problems are

explored. This course also deals with cultural issues and values that are unique to rural life and how these variables impact needs and functioning of rural people. The special repertoire of skills, knowledge, attitudes, and values that are necessary for practice with rural populations are included. Differences between rural and urban roles-sets of clients as well as the differences and similarities between the role-sets of the urban and rural social work practitioner are examined. **Prerequisites: SWK 200 and SWK 201.** (Offered Spring and Fall)

SWK 306 *The Art of Interviewing* – 3 hrs. This course is designed to provide knowledge for skill development in interviewing diverse populations and recording. Interviewing and recording techniques appropriate to a variety of problems, issues, populations, and social settings will be utilized, assessed and refined. **Prerequisites: SWK 200 and SWK 201.** (Offered Spring and Fall)

SWK 308 *Understanding the Black Experience* – 3 hrs. This course is designed to use films as a means to understand the black past as it relates to the contemporary condition of blacks in our society. The course affords students an opportunity to examine black people as presented in film. As a result, students acquire a perspective of what the black presence has been, is, and how it may become in the future. Upon completion of this course, students have an in-depth look at the impact of culture and environment as they affect behavior and personality. **Prerequisite: None.** (Offered Spring, Fall, and Summer)

SWK 309 *Social Work Methods (Individuals & Families)* – 3 hrs. This course is designed to help students develop beginning generalist social work practice skills. Self assessment, ethics and values of the social work profession, roles, competencies, the generalist problem-solving process, effective interviewing, recording, and evaluative skills are included. This course also focuses on the social work relationship including the influences of race, ethnicity, class, culture, gender, sexual orientations and varying diversities, in delivering effective services to individuals and families. **Prerequisites: SWK 200, SWK 201, SWK 301, SWK 305, and SWK 306.** (Offered Spring)

SWK 310 *Social Work Methods (Groups, Organizations and Communities)* – 3 hrs. This course is designed to develop generalist practice skills for work with groups, organizations, and communities. Assessments and interventions with groups, organizations and communities are taught. **Prerequisites: SWK 302 and SWK 309.** (Offered Fall)

SWK 311 *Introduction to Child Welfare* – 3 hrs. This course is designed to identify, analyze and assess child welfare programs, policies, and services for understanding the needs and services available for children. Vulnerable children (physically and sexually abused, neglected, special needs, in new families) are discussed to increase student understanding of their plight and the need for effective interventions, prevention and policy strategies. Human diversities and the social environment in rural and urban communities are examined in this class. Current child welfare issues are studied for a basic understanding of economic conditions, social justice and cultural factors. **Prerequisite: None.**

SWK 403 *Social Welfare Policies and Services* – 3 hrs. This course is designed to utilize research to interpret legislation and policies as a means of improving, changing and developing required services in recognition of problems and issues inherent in the social system; provide knowledge and skills regarding social policy, research, social legislation, policy formulation and analysis for enhancing delivery of social services; and rurality for insuring sequential, measurable learning. **Prerequisites: SWK 200, SWK 201, PSC 201, ECO 200 and SOC 210.** (Offered Fall and Spring)

SWK 407 *Field Instruction* – 8 hrs. Field Instruction is a planned experience in which the student is assigned to a social service agency for a minimum of five hundred hours per semester. This experience provides the opportunity for the student to work with individuals, families, groups,

organizations, and communities. The student is able to test out those skills and theories taught in the classroom. **Prerequisites:** SWK 200, SWK 201, SWK 301, SWK 305, SWK 306, SWK 309, SWK 310, SWK 403, and SWK 410. (Offered Spring)

SWK 407L *Field Instruction Seminar* – 3 hrs. A three-hour seminar is held each week. The seminar permits field instruction students in different field settings to share and benefit from their numerous and varied learning experiences. The seminar is also held to evaluate, discuss, and interpret the student's involvement in the field. Discussion in class will provide an opportunity for increased knowledge, assessment of values, and development of skills. **Co-requisite:** SWK407.

SWK 410 *Social Work Research Methods* – 3 hrs. This course is the first of two research courses. It is designed to present the basic principles of social science research (scientific method). It covers all aspects of the research process from problem formulation to writing of the research proposal. It introduces students to qualitative, quantitative, and single subject methods of conducting research. Ethical issues associated with conducting research are addressed. The use of research to inform practice and policy, and to promote social justice are explored. **Prerequisites:** SWK 200, SWK 201, SWK 301, SWK 302 and SWK 309. (Offered Fall)

SWK 415 *Senior Seminar in Research* – 2 hrs. This course is the second research course. In this course, students carry out the research design developed in **SWK 410 Research Methods** course. They administer the instrument, collect and analyze data, interpret results and discuss implications. Students continue to examine previous research and to analyze how past research designs and evaluations have dismissed, diminished, or reinforced negative stereotypes and prejudices in oppressed and at-risk populations. **Prerequisites:** SWK 309, SWK 310, SWK 403 and SWK 410. (Offered Spring)

**DEPARTMENT OF ENGLISH AND FOREIGN LANGUAGES**

1 McCormick Building  
256-372-5381

**MISSION**

The Department of English and Foreign Languages contributes to the University's core curriculum by helping students develop an appreciation for language and literature, become more competent in language usage, and refine their critical and analytical skills. Instruction in the major and minor curricula provides training that will enable students to advance their knowledge of the disciplines and engage in research, as well as creative and practical experiences.

**PROGRAM OFFERINGS AND DEGREES**

The department offers programs leading to the Bachelor of Arts degree in English, and in Telecommunications. Minors in English are available in each of these disciplines; French, German and Spanish are also taught. In collaboration with the School of Education, the department offers courses leading to teaching certification in English, French, and language arts. These programs are outlined by the Department of Curriculum and Instruction. The Telecommunications Program offers concentrations in: operations, performance, and production.

**REQUIREMENTS**

Students earning a major in the department must satisfy the general requirements of the university, complete 12 hours of a foreign language and take the Graduate Record Examination. An approved minor is also required.

**ENGLISH MAJOR**

125-126 Credit Hours

**Freshman Year**

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
ORI	101	Survival Skills	1	ENG	102	<sup>2</sup> Composition II	3
ENG	101	<sup>1</sup> Composition I	3	HIS	102	World History II	3
MTH	112	Pre-Calculus Algebra or Higher MTH course	3-4		102	<sup>3</sup> Elem. Foreign Language II	3
HIS	101	World History I	3	CMP	101	Fundamentals of Computer and Information Systems	3
HED	101	Personal & Comm. Health or Activities <b>or</b>	2	MUS	101	Music Appreciation	<u>3</u>
PED			2				15
MSC	101	Military Science I-A	(2)				
	101	<sup>3</sup> Elementary Foreign Language	<u>3</u>				
			15-16				

<sup>1</sup>ENG 103 may be taken by international students.

<sup>2</sup>ENG 104 may be taken by international students.

<sup>3</sup>French, German, or Spanish

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I	3	ENG 204 World Literature II	3
BIO 101 General Biology	3	PHY 101 Physical Science	3
BIO 101L General Biology Lab	1	PHY 101L Physical Science Lab	1
ART 101 Art Appreciation	3	202 <sup>3</sup> Interm. Foreign Language II	3
201 <sup>3</sup> Intermediate Foreign Language	3	ECO 200 Basic Economics <b>or</b>	3
ENG 201 Survey of English Literature I	<u>3</u>	ECO 231 Macro Economics	3
	16	ENG 205 General Speech	3
		ENG 202 Survey of Eng. Lit II	<u>3</u>
			19

<sup>3</sup>French, German or Spanish

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PSY 201 General Psychology	3	ENG 308 Literary Criticism	3
ENG 301 Survey of American Literature I	3	ENG 302 Survey of American Lit. II	3
ENG 307 Shakespeare	3	ENG 304 Advanced Composition	3
SOC 201 Introduction to Sociology	3	ENG 309 History of the English Language	3
PHL 201 Introduction to Philosophy	<u>3</u>	Elective	<u>3</u>
	15		15

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 401 Romantic Writers <b>or</b>	3	ENG 305 Sixteenth Cent. English Lit. <b>or</b>	3
ENG 402 Victorian Writers	<b>3</b>	ENG 306 Seventeenth Cent. English Lit.	(3)
HIS 301 English History I	3	HIS 302 English History II	3
Electives	<u>9</u>	Electives	<u>9</u>
	15		15

**English majors must take the following:**

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ENG 201	Survey of English Literature I	3
ENG 202	Survey of English Literature II	3
ENG 301	Survey of American Literature I	3
ENG 302	Survey of American Literature II	3
ENG 304	Advanced Composition	3
ENG 305	Sixteenth Century English Literature <b>or</b>	
ENG 306	Seventeenth Century English Literature	3
(See provisions after course descriptions)		
ENG 307	Shakespeare	3
ENG 308	Literary Criticism <b>or</b>	3
ENG 309	History of the English Language	3
ENG 401	Romantic Writers <b>or</b>	
ENG 402	Victorian Writers	<u>3</u>
(See provisions after course descriptions)		
		30

**English minors must take the following:**

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ENG 201	Survey of English Literature I	3
ENG 202	Survey of English Literature II	3
ENG 301	Survey of American Literature I	3
ENG 302	Survey of American Literature II	3
ENG 307	Shakespeare	3
ENG 308	Literary Criticism <b>or</b>	
ENG 309	History of the English Language	<u>3</u>
		18

**Telecommunications Major +**  
125-126 Credit Hours

+Telecommunications majors must also complete an approved minor.

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 <sup>2</sup> Composition II	3
ENG 101 <sup>1</sup> Composition I	3	HIS 102 World History II	3
MTH 112 Pre-Calculus Algebra <b>or</b>	(3)	CMP 101 Fundamentals of Computer and Information Systems	3
MTH 110 Finite Math or Higher MTH	(3-4)	TEL 202 Fundamentals of TV Production	3
HED 101 Personal & Comm. Health <b>or</b>	(2)	BIO 101 General Biology	3
PED Two activities <b>or</b>	(2)	BIO 101L General Biology Lab	<u>1</u>
MSC 101 Military Science I-A <b>or</b>	(2)		
MSC 102 Military Science II-B	(2)		
TEL 201 Introduction to Broadcasting	3		
HIS 101 World History I	<u>3</u>		
	15-16		16

<sup>1</sup>ENG 103 may be taken by international students.

<sup>2</sup>ENG 104 may be taken by international students.

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I	3	ENG 204 World Literature II	3
PHY 101 Physical Science	3	ENG 205 General Speech	3
PHY 101L Physical Science Lab	1	102 <sup>3</sup> Elem. Foreign Lang. II	3
MUS 101 Music Appreciation <b>or</b>	(3)	TEL 212 Writing for Broadcasting	3
ART 101 Art Appreciation	(3)	PSY 201 General Psychology	3
101 <sup>3</sup> Elem. Foreign Language I	3	Elective	<u>3</u>
TEL 211 Broadcast Law and Regulation	<u>3</u>		18
	16		

<sup>3</sup>French, German, or Spanish

Curricula for the three Telecommunications concentrations—Operations, Performance, and Production—are the same for the freshman and sophomore years. Curricula for the junior and senior years varies by concentration.



## Concentration in Operations

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 200 Basic Economics or	(3)	PHL 201 Introduction to Philosophy	3
ECO 231 Macro Economics	(3)	SOC 201 Introduction to Sociology	3
201 <sup>3</sup> Intermediate Foreign Language	3	ENG 304 Advanced Composition	3
TEL 213 Electronics for Broadcasting	3	202 <sup>3</sup> Interm. Foreign Language II	3
Electives*	<u>6</u>	Electives*	<u>3</u>
	15		15

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
TEL 301 Film Production I	3	TEL 302 Film Production II	3
TEL 401 Practicum I	3	TEL 402 Practicum II	3
TEL Electives	<u>9</u>	Electives*	<u>9</u>
	15		15

## Concentration in Performance

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 200 Basic Economics or	(3)	SOC 201 Introduction to Sociology	3
ECO 231 Macro Economics	(3)	ENG 304 Advanced Composition	3
201 <sup>3</sup> Inter. Foreign Language I	3	202 <sup>3</sup> Interm. Foreign Language II	3
TEL 215 Voice and Diction	3	TEL 216 Oral Interpretation	3
TEL 217 Discussion for TV	3	Elective*	<u>3</u>
Elective*	<u>3</u>		15
	15		

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PHL 201 Introduction to Philosophy	3	TEL 302 Film Production II	3
TEL 301 Film Production I	3	TEL 402 Practicum II	3
TEL 401 Practicum I	3	Electives*	<u>9</u>
TEL 403 Acting for TV and Film	3		15
Electives*	<u>3</u>		
	15		

## Concentration in Production

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
SOC 201 Introduction to Sociology	3	ENG 304 Advanced Composition	3
ECO 200 Basic Economics or	3	202 <sup>3</sup> Interm. Foreign Language II	3
ECO 231 Macro Economics	3	TEL 304 Advanced TV Production	3
201 <sup>3</sup> Inter. Foreign Language II	3	Electives*	<u>6</u>
TEL 403 Acting for TV and Film I	3		15
Elective*	<u>3</u>		
	15		

\*Elective hours may be used to complete minor requirements

<sup>3</sup>French, German, or Spanish

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>		<i>Second Semester</i>		<i>Sem. Hrs.</i>	
PHL 201	Introduction to Philosophy	3		TEL 302	Film Production II	3	
TEL 301	Film Production I	3		TEL 402	Practicum II	3	
TEL 401	Practicum I	3			*Electives	<u>9</u>	
	TEL Electives	<u>6</u>					15
		15					

\*Electives hours maybe used to complete minor requirements.

**Course Sequences for Majors and Minors**

The Telecommunications Group offers four course sequences -- majors in operations, production and performance and a minor which includes portions of the major. The major in Telecommunications consists of 36 semester hours in that field. A student who takes a major in telecommunications may choose from three areas of concentration -- operations, production and performance. A minor in telecommunications consists of 18 semester hours: 12 hours of required courses, plus six hours of electives selected with the approval of an advisor.

**All telecommunications majors and minors must take the following:**

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
TEL 201	Introduction to Broadcasting	3
TEL 202	Fundamentals of Television Production	3
TEL 211	Broadcast Law and Regulations	3
TEL 212	Writing for Broadcasting	3

**Operations Concentration Course Requirements:**

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
TEL 213	Electronics for Broadcasting	3
TEL 301	Film Production I	3
TEL 302	Film Production II	3
TEL 401	Practicum I	3
TEL 402	Practicum II	3
	Electives	9

**Production Concentration Course Requirements:**

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
TEL 301	Film Production I	3
TEL 302	Film Production II	3
TEL 304	Advanced Television Production	3
TEL 401	Practicum I	3
TEL 402	Practicum II	3
TEL 403	Acting for Television and Film	3
	Electives	6

**Performance Concentration Course Requirements:**

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
TEL 215	Voice and Diction	3
TEL 216	Oral Interpretation	3
TEL 217	Discussion for Television	3
TEL 301	Film Production I	3
TEL 302	Film Production II	3
TEL 401	Practicum I	3
TEL 402	Practicum II	3
TEL 403	Acting for Television and Film I	3

**COURSE DESCRIPTIONS**

- ENG 100      *Developmental English* – 3 hrs. This course presents functional aid in preparing freshmen to enter ENG 101. It presents fundamentals of the language with practical usage in writing. Students who pass Developmental English may proceed to Composition I. Those who do not complete the course must continue it during the next semester they are enrolled at the University. **Co-requisite: ENG 101L.** (Offered Fall and Spring)
- ENG 100L    *Developmental English Laboratory* – No credit hrs. This lab provides tutorial assistance and individualized study of the grammatical, mechanical, and writing skills covered in ENG 100. **Co-requisite: ENG 100.** (Offered Fall and Spring)
- ENG 101      *Composition I* – 3 hrs. This course presents an opportunity for freshmen to develop maturity in writing skills. Students must demonstrate adequate competence in writing on the final essay examination. **Prerequisite: None** (Offered Fall and Spring)
- ENG 101H    *Honors Composition I* – 3 hrs. This course presents an opportunity for freshmen to develop maturity in using communication skills. Advanced reading and writing assignments will be given. **Only students in the Honors Program may enroll. Prerequisite: None.**
- ENG 102      *Composition II* – 3 hrs. This course presents a continuation of Composition I. Emphasis is placed on the research paper. **Prerequisite: ENG 101 or ENG 103.** (Offered Fall and Spring)
- ENG 102H    *Honors Composition II* – 3 hrs. This course presents a continuation of Honors Composition I. A research project is required. **Only students in the Honors Program may enroll. Prerequisite: 101H.** (Offered Spring)
- ENG 103      *Communication Skills I* – 3 hrs. This course presents an opportunity for international students to develop maturity in the use of communication skills in listening, speaking, reading, and writing. Emphasis is placed on mechanical correctness and the strengthening of individual language abilities. It may be substituted for ENG 101. **Prerequisite: None.** (Offered Fall)
- ENG 104      *Communication Skills II* – 3 hrs. This course is a continuation of ENG 103. Emphasis is placed on the research paper. **Prerequisite: ENG 101 or ENG 103.** (Offered Spring)
- ENG 201      *Survey of English Literature I* – 3 hrs. This course presents a critical, historical, and appreciative study of English literature from the Old English Period through the Neo-classical Period. Masterpieces of the various literary eras are given special attention. **Prerequisite: ENG 102 or 104.** (Offered Fall)
- ENG 202      *Survey of English Literature II* – 3 hrs. This course presents a critical, historical, and appreciative study of English literature from the Romantic Period through the Contemporary Period. Masterpieces of the various literary eras are given special attention. **Prerequisite: ENG 201.** (Offered Spring)
- ENG 203      *World Literature I* – 3 hrs. This course presents a study of world literature from the ancient Mesopotamians through the Renaissance. **Prerequisite: ENG 102 or ENG 104.** (Offered Fall and Spring)
- ENG 204      *World Literature II* – 3 hrs. This course presents a study of world literature from the Age of Reason through the modern period. **Prerequisite: ENG 203.** (Offered Fall and Spring)
- ENG 205      *General Speech* – 3 hrs. This course presents the fundamentals of voice and diction implemented through the various types of speech: public speaking, group discussion, oral interpretation, debate, and informal speech. **Prerequisite: ENG 102 or ENG 104.** (Offered Fall and Spring)

- ENG 301 *Survey of American Literature I* – 3 hrs. This course presents a critical, historical, and appreciative study of American literature from the Colonial Period to 1865. The principal authors are given special attention. **Prerequisite:** ENG 204. (Offered Fall)
- ENG 302 *Survey of American Literature II* – 3 hrs. This course presents a critical, historical, and appreciative study of American literature from 1865 to the Contemporary Period. The principal authors are given special attention. **Prerequisite:** ENG 301. (Offered Spring)
- ENG 304 *Advanced Composition* – 3 hrs. This course presents the principles of rhetoric with supplementary readings and ample practice to develop the skills of students in expressing themselves beyond freshman competency. **Prerequisite:** ENG 102, 102H, or 104.
- ENG 305 *Sixteenth Century English Literature* – 3 hrs. This course presents a critical, historical, and appreciative study of non-dramatic literature of the Renaissance in England. Much attention is given to major authors of the period and genres that entered English literature at this time. Course must be paired with a period course later than 1700. **Prerequisite:** ENG 202. (Offered Spring)
- ENG 306 *Seventeenth Century English Literature* – 3 hrs. This course presents a critical, historical, and appreciative study of the prose and poetry of the seventeenth century. Special attention is given to Donne and Milton. Course must be paired with a period course later than 1700. **Prerequisite:** ENG 202. (Offered Spring)
- ENG 307 *Shakespeare* – 3 hrs. This course presents a study of selected dramas of Shakespeare - tragedies, comedies, romances, and histories - and selected sonnets. **Prerequisite:** ENG 202.
- ENG 308 *Literary Criticism* – 3 hrs. This course presents a close analysis of representative works in literary criticism from the ancients to the present. It includes the application of modes of criticism to various texts in a number of genres. **Prerequisite:** ENG 202. (Offered Spring)
- ENG 309 *History of the English Language* – 3 hrs. This course presents the historical development of the English language from the Anglo-Saxon Period to the present, including attention to the social, political, and intellectual forces that have determined the nature of its development. **Prerequisite:** ENG 202. (Offered Spring)
- ENG 310 *Journalism Workshop* – 2 hrs. This course presents journalism experiences primarily for students who are assigned to the staff of university publications. It provides them with basic editorial skills. Emphasis is placed upon news reporting, writing, editing and layout. Weekly classroom sessions are held; however, the major course effort is devoted to laboratory activities which culminate in the production of the student newspaper or other university publications. **Prerequisite:** ENG 204. (Offered Spring)
- ENG 311 *Creative Writing* – 3 hrs. This course is designed to help students interested in creative writing develop their skills as writers of poetry and prose. A workshop environment including exercises, peer criticism and writing models will be used. **Prerequisite:** ENG 204. (Offered Spring)
- ENG 401 *Romantic Writers* – 3 hrs. This course presents a critical, historical and appreciative study of the prose and poetry of the Romantic Movement. Special attention is given to Wordsworth, Coleridge, Byron, Shelley, and Keats. Course must be paired with a period course earlier than 1700. **Prerequisite:** ENG 202. (Offered Fall)
- ENG 402 *Victorian Writers* – 3 hrs. This course presents a critical, historical and appreciative study of the prose and poetry of the Victorian period. Special attention is given to Tennyson, Browning, Arnold, and Carlyle. Course must be paired with a period course earlier than 1700. **Prerequisite:** ENG 202. (Offered Fall)

- ENG 403      *Play Production* – 2 hrs. This course offers experience in the skills and techniques necessary for staging successfully an amateur dramatic production. **Prerequisite: ENG 102 or ENG 104.** (Offered Fall)
- ENG 404      *Black Literature* – 3 hrs. This course presents a study of black literature of America and other areas of the world. It may be a survey, a genre, or an author course at various times. **Prerequisite: ENG 102 or ENG 104.** (Offered Fall)
- ENG 405      *Advanced Grammar* – 3 hrs. This course presents a thorough study of traditional English grammar. It may also include structural, generative, and transformational methods. **Prerequisite: ENG 102.** (Offered Fall)

## FRENCH

Minor: 18 semester hours above the freshman level. All courses must be taken in proper sequence.

- FRE 101      *Elementary French I* – 3 hrs. This course introduces the student to the fundamentals of oral-aural and reading-writing usage in the language. Grammatical structure, conversational form, and various aspects of the French culture are important parts of the course. Students learn to use the spoken language and work on production from the beginning. **Prerequisite: None.** (Offered Fall)
- FRE 102      *Elementary French II* – 3 hrs. This course is a continuation of FRE 101. The basic language skills (speaking, reading, writing, and listening) introduced in FRE 101, along with some aspects of French culture, will be emphasized to complete the introductory level. **Prerequisite: FRE 101.** (Offered Spring)
- FRE 201      *Intermediate French I* – 3 hrs. This course is a continuation of the first-year course. Improved proficiencies in oral-aural and reading-writing skills and increased linguistic proficiency will be stressed. Humanistic understanding of French people will be emphasized through the reading of historical or cultural texts in French. **Prerequisite: FRE 102.** (Offered Fall)
- FRE 202      *Intermediate French II* – 3 hrs. This course is a continuation of FRE 201. Includes intensive reading of French literary and cultural texts. Emphasis is placed on vocabulary expansion, speaking and writing short compositions in French. **Prerequisite: FRE 201.** (Offered Spring)
- FRE 301      *Advanced French II* – 3 hrs. This course is a logical continuation of the second-year course. Further attention is given to oral-aural and reading-writing skills. Problems of grammar are approached at a high level. Syntactic constructions and rules, and the study of some idiomatic usage of the language are also included. **Prerequisite: FRE 202.** (Offered Fall)
- FRE 302      *Advanced French II* – 3 hrs. This course is a continuation of French 301. Students will continue to develop their audiolingual and written skills, with reading and presentation of grammar and syntax. The course is designed to develop fluency in spoken French through guided and free conversation on topics of personal, general and current interest. **Prerequisite: FRE 301.** (Offered Spring)
- FRE 303      *Introduction to French Literature I* – 3 hrs. This course gives a broad study of the historical and aesthetic evolution in literature from the earliest medieval literary monuments through the great masterworks of the Age of Enlightenment. Students will read carefully selected samples of representative works from all of the genres and important periods. **Prerequisite: FRE 202.** (Offered Fall)
- FRE 304      *Introduction to French Literature II* – 3 hrs. This course is a continuation of FRE 303. It gives a broad study of the historical and aesthetic evolution in literature from the Age of Enlightenment

through the contemporary period. The main literary currents and their historical and social backgrounds will be studied. **Prerequisite: FRE 303.** (Offered Spring)

- FRE 401 *French Civilization and Culture* – 3 hrs. This course presents a study of French civilization from the point of view of the arts, science, geography, industry, and social and political institutions. Conducted partially in French. **Prerequisite: FRE 302.** (Offered Fall)
- FRE 402 *French Phonetics* – 3 hrs. This course gives a systematic study of the sounds and sound patterns of French in theory and practice. It gives the student an introduction to linguistic terminology and concepts which will aid the student in discriminating between correct and incorrect articulation of French sounds. It includes intensive oral drills of sounds in isolation and in syllables. **Prerequisite: FRE 302.** (Offered Fall)
- FRE 403 *French Literary Masterpieces I* – 3 hrs. This course provides a comprehensive coverage of selected masterpieces involving advanced reading, translation, interpretation, and criticism. Students will complete critical analysis of masterworks in poetry, prose, and drama from the Middle Ages to the present. **Prerequisite: FRE 304.** (Offered Fall)
- FRE 404 *French Literary Masterpieces II* – 3 hrs. This course is a continuation of FRE 403. At this level, students develop a keener objective appraisal of the written word that permits a more refined sense of criticism. They will complete a research project on a topic of their own choice. This course is designed to orient students to possible areas of concentration in their graduate work. **Prerequisite: FRE 403.** (Offered Spring)

## SPANISH

- SPA 101 *Elementary Spanish I* – 3 hrs. This course introduces students to the fundamental of oral-aural and reading-writing in the language. Grammatical structure, conversational form, and various aspects of Spanish culture are important parts of the course. Students learn to use the spoken language and work on pronunciation. **Prerequisite: None.** (Offered Fall)
- SPA 102 *Elementary Spanish II* – 3 hrs. This course is a continuation of SPA 101. The basic language skills (speaking, reading, writing, and listening) introduced in SPA 101, along with Spanish culture, will be emphasized to complete the introductory level. **Prerequisite: SPA 101.** (Offered Spring)
- SPA 201 *Intermediate Spanish I* – 3 hrs. This course is a continuation of the first-year course. Students continue to improve their proficiencies in oral-aural and reading-writing skills. They must demonstrate increased linguistic proficiency and humanistic understanding of the Spanish people through reading historical or cultural texts in Spanish. **Prerequisite: SPA 102.** (Offered Fall)
- SPA 202 *Intermediate Spanish II* – 3 hrs. This course is a continuation of SPA 201. Students continue to demonstrate intensive reading knowledge of texts dealing with Spanish literature and culture, with emphasis on speaking and writing short Spanish compositions. Vocabulary expansion is also emphasized. **Prerequisite: SPA 201.** (Offered Spring)

## GERMAN

- GER 101 *Elementary German I* – 3 hrs. This course introduces the student to the fundamentals of the oral-aural and reading-writing aspects of the language. Grammatical structure, conversational form and German culture included. Some attention is also given to pronunciation and the spoken language. **Prerequisite: None.** (Offered Fall)

- GER 102 *Elementary German II* – 3 hrs. This course is a continuation of GER 101. The basic language skills (speaking, reading, writing and listening) introduced in GER 101, along with German culture will be emphasized to complete the introductory level. **Prerequisite: GER 101.**
- GER 201 *Intermediate German I* – 3 hrs. This course is a logical continuation of the first-year course. Students continue to improve their proficiencies in oral-aural and reading-writing skills. They must demonstrate increased linguistic proficiency and a humanistic understanding of the German people through reading historical or cultural texts in German. **Prerequisite: GER 101.** (Offered Fall)
- GER 202 *Intermediate German II* – 3 hrs. This course is a continuation of GER 201. Students continue to demonstrate intensive reading knowledge of texts dealing with German literature and culture with emphasis on speaking and writing short German compositions. Vocabulary expansion is also emphasized. **Prerequisite: GER 201.** (Offered Spring)

## TELECOMMUNICATIONS

- TEL 201 *Introduction to Broadcasting* – 3 hrs. This course deals with the development of the broadcast industry, its relationship to other existing industries, print and film, and controls established by government regulatory bodies. The influences of broadcasting on the economy of the country are also treated. **Prerequisite: Non.** (Offered)
- TEL 202 *Fundamentals of Television Production* – 3 hrs. This is primarily a laboratory course in the development of TV programs. Study areas include TV equipment, camera operations, optics and lenses used in TV production, set development and construction and audio reproduction. **Prerequisite: None.** (Offered Spring)
- TEL 211 *Broadcast Law and Regulations* – 3 hrs. This course presents regulations governing broadcasting, the responsibility for programming decision, standards and responsibilities of public communications in telecommunications, and laws relating to the press and to government regulation of broadcasting. **Prerequisite: None.** (Offered Fall)
- TEL 212 *Writing for Broadcasting* – 3 hrs. This course presents the fundamentals of writing and adapting literature for television and radio. **Prerequisite: None.** (Offered Spring)
- TEL 213 *Electronics for Broadcasting* – 3 hrs. This course presents the basic aspects of voltage, current, resistance, inductance, and capacitance. Laboratory work develops concepts in connecting components and taking basic instrument readings. **Prerequisite: None.** (Offered Fall)
- TEL 215 *Voice and Diction* – 3 hrs. This course presents voice training through exercises in voice production, elements of tone, and articulation of speech sounds. Practical experiences will be offered in announcing, newscasting, interviews, special events, and effective speech. **Prerequisite: None.** (Offered Fall)
- TEL 216 *Oral Interpretation* – 3 hrs. This course stresses literary interpretation: clarity through understanding of the content; unity through grasps of the rhythm; interest through appreciation of the dramatic movement; and color through realization of the mood. Advanced experiences will be offered in interpretation of literary works, announcing, interviewing, and newscasting. **Prerequisite: None.** (Offered Spring)
- TEL 217 *Discussion for Television* – 3 hrs. This course presents an emphasis on contemporary theories on interpersonal and small group communication and especially emphasizes techniques for argumentation, interview, and panel discussion for TV. **Prerequisite: None.** (Offered Fall)
- TEL 301 *Film Production I* – 3 hrs. This course presents an introduction to film-making equipment and scripting. Each student will be required to write, produce, budget, edit, and direct a film project. **Prerequisite: None.** (Offered Fall)

- TEL 302 *Film Production II* – 3 hrs. This course presents an introduction to film-making equipment and scripting. Each student will be required to write, produce, budget, edit, and direct a film project. **Prerequisite: None.** (Offered Fall)
- TEL 304 *Advanced Television Production* – 3 hrs. This course presents laboratory experience in the development of various types of TV production. Students will be required to write, produce, budget, and direct a TV program of considerable length in a category other than drama. Program idea and design will be emphasized. **Prerequisite: TEL 202.** (Offered Spring)
- TEL 311 *Advertising for Radio and Television* – 3 hrs. This course presents the application of the principles of advertising to the broadcast media. Emphasis will be placed on techniques of writing and production of advertisement. **Prerequisite: 15 semester hours in TEL.** (Offered Fall)
- TEL 321 *News and Documentary Techniques* – 3 hrs. This course presents the fundamentals of news reporting for all news media, the gathering and writing of news, study of news departments, responsibility to the public affairs programming, and news editing. **Prerequisite: 15 semester hours in TEL.** (Offered Fall)
- TEL 401 *Practicum I* – 3 hrs. This course presents training in the operation of audio and video equipment using the facilities of the AAMU Telecommunications Center and other facilities, based on student interest. **Prerequisite: 15 semester hours in TEL.** (Offered Fall and Spring)
- TEL 402 *Practicum II* – 3 hrs. This course presents additional training in the Telecommunications Center or other appropriate centers. **Prerequisite: 15 semester hours in TEL.** (Offered Fall and Spring)
- TEL 403 *Acting for Television and Film I* – 3 hrs. This course presents an exploration of the principles and theories of dramatic performance expressed through contemporary entertainment media. Practical experience in acting for television will be offered. **Prerequisite: None.** (Offered Fall)
- TEL 404 *Acting for Television and Film II* – 3 hrs. This course is a continuation of TEL 403. **Prerequisite: TEL 403.** (Offered Spring)
- TEL 411 *special Topics in Broadcasting* – 3 hrs. This course presents the history, significance, potentialities, current trends, and utilization in the broadcast medium. Emphasis will also be placed on broadcast economics and station management. **Prerequisite: 15 semester hours in TEL.** (Offered Fall)
- TEL 431 *Special Topics in Film* – 3 hrs. This course presents the visual aspects of television and film, with emphasis on basic principles of designing, techniques of lighting, and practices in television and film studio operations, as well as sound motion picture production. **Prerequisite: 15 semester hours in TEL.** (Offered Spring)
- TEL 441 *Special Topics in Speech and Drama* – 3 hrs. This course presents both history and practice in the art of advocacy involving analysis, arrangement, and presentation of arguments for the purpose of decision making and social control. Experiences in developing scripts for public performance will be required. **Prerequisite: 15 semester hours in TEL.** (Offered Fall)





## **DEPARTMENT OF MATHEMATICS PROGRAM**

234 V. M. Chambers Building  
256-372-5316

### **INTRODUCTION**

The goal of the Mathematics Program is to provide quality instruction for students in Mathematics courses at every level, developmental through graduate programs. It is important to establish and follow the most appropriate course sequence for each student, with consideration for both the student's intended program of study and the student's prior mathematical experience. For this reason, no undergraduate student may enroll in his/her first mathematics course at the University prior to a determination of an appropriate mathematics placement level. Students who have no prior college credits in mathematics will be placed in an appropriate mathematics course, primarily in accordance with their ACT or SAT scores in mathematics.

### **MISSION/OBJECTIVES**

The Mathematics Program provides basic and advanced training in the principles and methods of mathematics. The courses offered prepare students to pursue the careers of their choice and satisfy the requirements for a B.S. degree in mathematics or a minor in mathematics for students majoring in other academic areas. Courses are also offered to (1) satisfy the requirements for a minor in applied statistics, (2) satisfy the mathematics requirements for prospective secondary school mathematics teachers, (3) satisfy individual needs of other academic disciplines, (4) satisfy the General Education Curriculum mathematics requirement, and (5) satisfy the Alabama State Articulation Agreement.

### **GENERAL PROGRAM REQUIREMENTS**

Students who major in mathematics are required to earn a minimum grade of C in each mathematics course taken as part of the curriculum for the mathematics major. After mathematics majors exit University College, assessment of their knowledge and skills in mathematics and monitoring their total academic progress are the responsibilities of advisors in the Mathematics Program and in the School of Arts and Sciences.

The Mathematics Program requires that majors take and pass a mid-level program examination and successfully complete the Senior Project (MTH 481) and the program exit assessment. The mid-level examination is to be taken near the end of the sophomore year or at the beginning of the junior year. Further information concerning this examination may be obtained from the program advisors. Finally, each major must complete an exit interview with his/her mathematics academic advisor during the process of being cleared for graduation.

### **PROGRAM OFFERINGS**

The degree programs offered in the Mathematics Program are the B.S. in Mathematics, which must be paired with a minor option, and the B.S. with a Double Major in Mathematics and Computer Science. In addition, programs are offered for a Minor in Mathematics and for a Minor in Applied Statistics.

The choice of a minor for the B.S. in Mathematics major program is left to the student, but should be closely related to a career goal. Complete curricula for the Mathematics major with Chemistry, Computer Science, Physics, or Applied Statistics minors are indicated, together with the curriculum for the Double Major in Mathematics and Computer Science. Other minor options are available within the various departments in the University.

## **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

Financial assistance is available to University students through academic and athletic scholarships, and through work/study and bi-weekly student work programs. Additional student funding **may** be available for qualified students employed in tutorial programs and in research opportunities.

## **COOPERATIVE EDUCATION/INTERNSHIPS**

The University's Cooperative Education Program (Co-op), located in the Career Development Center, offers opportunities which combine professional experience with academic study. This program is strongly recommended for mathematics majors who wish to gain realistic professional experience while earning income to help finance educational expenses. Students interested in the program should contact either the coordinator of the Mathematics Program or the Director of Cooperative Education at the University.

The Mathematics Program also encourages majors to apply for summer or semester internships and research opportunities for undergraduates (REU) experiences. A representative listing of these programs is maintained in the Program Office.

## **STUDENT/PROFESSIONAL ORGANIZATIONS**

Lambda Sigma Pi Mathematics Club sponsors programs, social events, and service projects of special interest to mathematics majors and students interested in mathematics and technology. Membership is open to all interested students. The organization operates under student leadership, with faculty advisors.

## **SPECIAL PROGRAMS/AWARDS/RECOGNITIONS**

Mathematics students receive academic recognition through the University Academic Honor Roll, Dean's List, and President's Cup awards system. Additional sources of external recognition include Who's Who in American Colleges and Universities and the National Dean's List.

## **SPECIAL ADMISSIONS CRITERIA**

The Mathematics Program requires that majors take and pass a mid-level program examination. Students failing to achieve a passing status may repeat the mid-level examination with the consent of the faculty.

## **GRADUATION/PROGRAM REQUIREMENTS**

**University General Education Curriculum** (43 semester hours credit): ENG 101, ENG 102, ENG 201 or ENG 203, ENG 205, ENG 304, History sequence (6 hours), Fine Arts elective (3 hours), ECO 200, Social Science electives (6 hrs.), Science sequence with labs (8 hrs.), and Physical Education or Health or Military Science (2 hrs.). Additionally, all mathematics majors excepting those in the double major program are required to complete six hours of Foreign Language.

**MATHEMATICS MAJOR**

39 Credit Hours

At least thirty-nine semester hours of credit in mathematics courses are required for a mathematics major. The courses which make up the core of the major program are indicated below.

<u>Course No.</u>	<u>Course Title</u>	<u>Semester Hours</u>
MTH 125-126	Calculus I and II	4,4
MTH 227	Calculus III	4
MTH 237	Introduction to Linear Algebra	3
MTH 238	Applied Differential Equations	3
MTH 301	Abstract Algebra I	3
MTH 351	Introduction to Real Analysis I	3
MTH 453	Probability and Statistics	3
MTH 481	Senior Project	3

In addition to the courses listed above, the major must complete a minimum of nine elective hours of credit. The elective courses provide for some flexibility to suit the needs of the major. Students intending to pursue graduate study should elect the courses designated as "Graduate School Track". The guidance of a mathematics advisor is necessary to establish an approved choice of electives, selected from the following mathematics courses.

<u>Course No.</u>	<u>Course Title</u>	<u>Semester Hours</u>
*MTH 302	Abstract Algebra II	3
*MTH 303	Methods of Mathematical Physics	4
*MTH 352	Introduction to Real Analysis II	3
MTH 371	Number Theory	3
*MTH 383	Numerical Analysis	3
MTH 401	History of Mathematics	1
MTH 452	Complex Analysis	3
MTH 454	Advanced Calculus	3
MTH 480	Selected Topics in Mathematics	3
MTH 482	Independent Study	1
MTH 324	Applied Statistical Computing	3
MTH 327	Applied Regression Analysis	3
MTH 344	Design Analysis of Experiments I	3
MTH 444	Design Analysis of Experiments II	3
MTH 473	Statistics	3

\* Graduate School Track

**Requirements for Minor in Mathematics**

At least eighteen semester hours of credit in mathematics courses are required for a mathematics minor. The courses which make up the core of the minor program are indicated below.

<u>Course No.</u>	<u>Course Title</u>	<u>Semester Hours</u>
MTH 125-126	Calculus I and II	4,4
MTH 227	Calculus III	4
MTH 238	Applied Differential Equations	3

In addition to the courses listed above, the minor must complete a minimum of three elective hours of credit selected from the following mathematics courses. The guidance of a mathematics advisor is necessary to establish an approved choice of elective.

<u>Course No.</u>	<u>Course Title</u>	<u>Semester Hours</u>
MTH 237	Introduction to Linear Algebra	3
MTH 301	Abstract Algebra I	3
MTH 303	Methods of Mathematical Physics	4
MTH 351	Introduction to Real Analysis I	3
MTH 355	Applied Statistics	3
MTH 371	Number Theory	3
MTH 383	Numerical Analysis	3
MTH 453	Probability and Statistics	3

### Requirements for Minor in Statistics

Eighteen semester hours of credit in Applied Statistics courses are required for an Applied Statistics minor. The courses required in this minor program are indicated below.

<u>Course No.</u>	<u>Course Title</u>	<u>Semester Hours</u>
MTH 324	Applied Statistical Computing	3
MTH 327	Applied Regression Analysis	3
MTH 344	Design Analysis of Experiments I	3
MTH 444	Design Analysis of Experiments II	3
MTH 453	Probability and Statistics	3
MTH 473	Statistics	3

## PROGRAM CURRICULA MATHEMATICS MAJOR (CHEMISTRY MINOR) 125 Credit Hours

In this curriculum please refer to this listing to identify appropriate course requirements:

ENG 101, 102 may be replaced by ENG 103 and 104 for non-native speakers of English.

Foreign Language Sequence: FRE 101-102, SPA 101-102, GER 101-102

Literature: ENG 201 or ENG 203

Health/Phys Ed/Military Science: HED 101, FAS 101, NHM 103, PED, or MSC

Fine Arts: ART 101 or MUS 101

Social/Behavioral Science: PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214, or GEO 215

Approved MTH Elective: Consult table of electives in **Major Requirements for Mathematics** section.

Science Sequence: BIO 101, 101L, 102, 102L or PHY 105, 105L, 106, 106L

### Freshman Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	ENG 102	<sup>2</sup> Composition II	3
ENG 101	<sup>1</sup> Composition I	3	HIS 102	World History II	3
HIS 101	World History I	3	MTH 126	Calculus II	4
MTH 125	Calculus I	4	CMP 102	Intro. to Programming I	3
	Health/Phys. Ed./Mil. Sci.	<u>2</u>		Fine Arts	<u>3</u>
		13			16

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
MTH 227	Calculus III	4	MTH 238	Applied Diff. Equations	3
MTH 237	Intro. to Linear Algebra	3	ECO 200	Basic Economics	3
CHE 101	General Chemistry I	3	CHE 102	General Chemistry II	3
CHE 101L	General Chemistry I Lab	1	CHE 102L	General Chemistry II Lab	1
101	Foreign Language Seq. I	3	102	Foreign Language Seq. II	3
ENG	Literature	<u>3</u>	ENG 205	General Speech	<u>3</u>
		17			16

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
MTH 301	Abstract Algebra I	3	MTH	Approved MTH Elective	3
MTH 351	Intro. to Real Analysis I	3	CHE 202	Analytical Chemistry II	3
CHE 201	Analytical Chemistry I	3	CHE 202L	Analytical Chem. II Lab	1
CHE 201L	Analytical. Chem. I Lab	1		Science Sequence II	3
	Science Sequence I	3		Science Sequence II Lab	1
	Science Sequence I Lab	1	MTH	Approved MTH Elective	3
ENG 304	Advanced Composition	<u>3</u>		Elective or Co-op Exp.	<u>3</u>
		17			17

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
MTH 453	Probability & Statistics	3		Elective	3
CHE 301	Organic Chemistry I	3	MTH 481	Senior Project	3
CHE 301L	Organic Chemistry I Lab	1	CHE 302	Organic Chemistry II	3
	Social/Behavioral Science	3	CHE 302L	Organic Chemistry II Lab	1
	Elective or Co-op Exp.	3		Social/Behavioral Science	<u>3</u>
MTH	Approved MTH Elective	<u>3</u>			13
		16			

**MATHEMATICS MAJOR (COMPUTER SCIENCE MINOR)**

120 Credit Hours

In this curriculum please refer to this listing to identify appropriate course requirements:

ENG 101, 102 may be replaced by ENG 103 and 104 for non-native speakers of English.

Foreign Language Sequence: FRE 101-102, SPA 101-102, GER 101-102

Literature: ENG 201 or ENG 203

Health/Phys Ed/ Military Science: HED 101, FAS 101, NHM 103, PED, or MSC

Fine Arts: ART 101 or MUS 101

Social/Behavioral Science: PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214, or GEO 215

Approved MTH Elective: Consult table in **Major Requirements for Mathematics** section.

Science Sequence: BIO 101, 101L, 102, 102L or PHY 105, 105L, 106, 106L or CHE 101, 101L, 102, 102L

### Freshman Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ORI 101	Survival Skills	1	ENG 102 <sup>2</sup> Composition II	3	
ENG 101	Composition I	3	HIS 102	World History II	3
HIS 101	World History I	3	MTH 126	Calculus II	4
MTH 125	Calculus I	4	CMP 102	Intro. to Programming I	3
	Health/Phys. Ed./Mil. Sci.	<u>2</u>		Fine Arts	<u>3</u>
		13			16

### Sophomore Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MTH 227	Calculus III	4	MTH 238	Applied Diff. Equations	3
MTH 237	Intro. to Linear Algebra	3	ECO 200	Basic Economics	3
	101 Foreign Language Seq. I	3	102	Foreign Language Seq. II	3
CMP 103	Computer Mathematics	3	ENG 205	General Speech	3
	Social/Behavioral Science	<u>3</u>	ENG	Literature	3
		16	CMP 109	Intro. to Programming II	<u>3</u>
					18

### Junior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MTH 301	Abstract Algebra I	3	MTH	Approved MTH Elective	3
MTH 351	Intro. to Real Analysis I	3		Science Sequence II	3
	Science Sequence I	3		Science Sequence II Lab	1
	Science Sequence I Lab	1	MTH	Approved MTH Elective	3
ENG 304	Advanced Composition	3	CMP 215	Data Structures	3
CMP 204	Visual Programming	<u>3</u>		Elective	<u>4</u>
		16			17

### Senior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MTH 453	Probability & Statistics	3		Elective	3
	Social/Behavioral Science	3	MTH 481	Senior Project	3
	Elective or Co-op Exp.	3	CMP 303	Assembly Language	3
MTH	Approved MTH Elective	<u>3</u>		Elective or Co-op Exp.	<u>3</u>
		12			12

## MATHEMATICS MAJOR (PHYSICS MINOR)

125 Credit Hours

In this curriculum please refer to this listing to identify appropriate course requirements:

ENG 101, 102 may be replaced by ENG 103 and 104 for non-native speakers of English.

Foreign Language Sequence: FRE 101-102, SPA 101-102, GER 101-102

Literature: ENG 201 or ENG 203

Health/Phys Ed/ Military Science: HED 101, FAS 101, NHM 103, PED, or MSC

Fine Arts: ART 101 or MUS 101

Social/Behavioral Science: PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214, or GEO 215

Approved MTH Elective: Consult table in **Major Requirements for Mathematics** section.

Science Sequence: BIO 101, 101L, 102, 102L or CHE 101, 101L, 102, 102L

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ORI 101	Survival Skills	1	ENG 102	<sup>2</sup> Composition II	3
ENG 101	Composition I	3	HIS 102	World History II	3
HIS 101	World History I	3	MTH 126	Calculus II	4
MTH 125	Calculus I	4	CMP 102	Intro. to Programming I	3
	Health/Phys. Ed./Mil. Sci.	<u>2</u>		Fine Arts	<u>3</u>
		13			16

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MTH 227	Calculus III	4	MTH 238	Applied Diff. Equations	3
MTH 237	Intro. to Linear Algebra	3	ECO 200	Basic Economics	3
	101 Foreign Language Seq. I	3		102 Foreign Language Seq. II	3
PHY 105	Physics I	3	ENG 205	General Speech	3
PHY 105L	Physics I Lab	1	PHY 106	Physics II	3
	Social/Behavioral Science	<u>3</u>	PHY 106L	Physics II Lab	<u>1</u>
		17			16

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MTH 301	Abstract Algebra I	3	MTH	Approved MTH Elective	3-4
MTH 351	Intro. to Real Analysis I	3		Science Sequence II	3
	Science Sequence I	3		Science Sequence II Lab	1
	Science Sequence I Lab	1	MTH	Approved MTH Elective	3
ENG 304	Advanced Composition	3	PHY 303	Methods of Math Physics	4
	Social/Behavioral Science	3	PHY	PHY Elective (300 Level)	<u>3</u>
PHY 201	Modern Physics	<u>3</u>			16-17
		19			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MTH 453	Probability & Statistics	3		Elective	3
	Social/Behavioral Science	3	MTH 481	Senior Project	3
	Elective or Co-op Exp.	3	CMP 303	Assembly Language	3
MTH	Approved MTH Elective	3		Elective or Co-op Exp.	<u>3</u>
	Elective	<u>3</u>			12
		15			

**MATHEMATICS MAJOR (APPLIED STATISTICS MINOR)**

120 Credit Hours

In this curriculum please refer to this listing to identify appropriate course requirements:

ENG 101, 102 may be replaced by ENG 103 and 104 for non-native speakers of English.

Foreign Language Sequence: FRE 101-102, SPA 101-102, GER 101-102

Literature: ENG 201 or ENG 203

Health/Phys Ed/ Military Science: HED 101, FAS 101, NHM 103, PED, or MSC

Fine Arts: ART 101 or MUS 101

Social/Behavioral Science: PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214, or GEO 215

Approved MTH Elective: Consult table in **Major Requirements for Mathematics** section.

Science Sequence: BIO 101, 101L, 102, 102L or PHY 105, 105L, 106, 106L or CHE 101, 101L, 102, 102L



### Freshman Year

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	ENG 102	<sup>2</sup> Composition II	3		
ENG 101	Composition I	3	HIS 102	World History II	3		
HIS 101	World History I	3	MTH 126	Calculus II	4		
MTH 125	Calculus I	4	CMP 102	Intro. to Programming I	3		
	Health/Phys. Ed./Mil. Sci.	<u>2</u>		Fine Arts	<u>3</u>		
		13			16		

### Sophomore Year

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
MTH 227	Calculus III	4	MTH 238	Applied Diff. Equations	3		
MTH 237	Intro. to Linear Algebra	3	ECO 200	Basic Economics	3		
101	Foreign Language Seq. I	3	102	Foreign Language Seq. II	3		
	Science Sequence I	3	ST 327	Applied Regress Analysis	3		
	Science Sequence I Lab	1		Science Sequence II	3		
	Social/Behavioral Science	<u>3</u>		Science Sequence II Lab	<u>1</u>		
		17			16		

### Junior Year

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
MTH 301	Abstract Algebra I	3	MTH	Approved MTH Elective	3		
MTH 351	Intro. to Real Analysis I	3	MTH	Approved MTH Elective	3		
ST 344	Design & Analysis of Exp. I	3	MTH	Approved MTH Elective	3		
ENG 304	Advanced Composition	3	ENG	Literature	3		
CMP 109	Intro. to Programming II	3	ST 444	Design & Analysis of Exp. II	<u>3</u>		
	Social/Behavioral Science	<u>3</u>			15		
		18					

### Senior Year

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
MTH 453	Probability & Statistics	3	ST 473	Statistics	3		
ENG 205	General Speech	4	MTH 481	Senior Project	3		
	Elective or Co-op Exp.	3		Social/Behavioral Science	3		
MTH	Approved MTH Elective	<u>3</u>		Elective or Co-op Exp.	<u>3</u>		
		13			12		

## MAJOR IN MATHEMATICS AND COMPUTER SCIENCE CONCENTRATION

128 Credit Hours

In this curriculum please refer to this listing to identify appropriate course requirements:

ENG 101, 102 may be replaced by ENG 103 and 104 for non-native speakers of English.

Literature: ENG 201 or ENG 203

Health/Phys Ed/ Military Science: HED 101, FAS 101, NHM 103, PED, or MSC

Fine Arts: ART 101 or MUS 101

Social/Behavioral Science: PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214, or GEO 215

Approved MTH Elective: Consult table of electives in **Major Requirements for Mathematics** section.

Science Sequence: BIO 101, 101L, 102, 102L or PHY 105, 105L, 106, 106L or CHE 101, 101L, 102, 102L

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	ENG 102 <sup>2</sup> Composition II	3
ENG 101	<sup>1</sup> Composition I	3	HIS 102 World History II	3
HIS 101	World History I	3	MTH 126 Calculus II	4
MTH 125	Calculus I	4	CMP 109 Intro. to Programming II	3
	Health/Phys. Ed./Mil. Sci.	2	CMP 103 Computer Mathematics	<u>3</u>
CMP 102	Intro. to Programming I	<u>3</u>		16
		16		

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MTH 227	Calculus III	4	MTH 238 Applied Diff. Equations	3
MTH 237	Intro. to Linear Algebra	3	Science Sequence II	3
	Science Sequence I	3	Science Sequence II Lab	1
	Science Sequence I Lab	1	CMP 209 Logical Found. Of Comp.	3
	Fine Arts	3	Social/Behavioral Science	3
ENG	Literature	<u>3</u>	CMP 204 Visual Programming	<u>3</u>
		17		16

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MTH 301	Abstract Algebra I	3	MTH	Approved MTH Elective	3
MTH 351	Intro. to Real Analysis I	3	ECO 200	Basic Economics	3
	Social/Behavioral Science	3	MTH 383	Numerical Analysis	3
CMP 303	Assembly Language	3	CMP	CMP Elective (300 Level)	3
ENG 304	Advanced Composition	3	CMP 384	Operating Systems	<u>3</u>
CMP 215	Data Structures	<u>3</u>			15
		18			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
MTH 453	Probability & Statistics	3	ENG 205	General Speech	3
CMP 401	Software Engineering	3	CMP 488	Intro. to Database	3
CMP 425	Theory of Algorithms	3	MTH 481	Senior Project	3
	Elective or Co-op Exp.	3	CMP 403	Senior Problem	3
MTH	Approved MTH Elective	<u>3</u>		Elective	<u>3</u>
		15			15

## COURSE DESCRIPTIONS

- MTH 100 *Developmental Mathematics* – 3 hrs. This course covers basic arithmetic, basic algebra and basic geometry concepts. Included in its content are the four fundamental operations involving positive and negative real numbers, rational numbers, and percents; solving linear equations and inequalities; and pertinent application problems. **Credit for this course may not be counted toward any degree requirements. Prerequisite: None. Placement in this course is determined by performance on a placement test.** (Offered Fall, Spring, Summer)
- MTH 101 *Fundamentals of Mathematics* – 3 hrs. This course covers graphing and linear systems, exponents and polynomials, factoring, rational expressions, roots and radicals, solving quadratic equations, compound inequalities, linear inequalities in two variables, variation, functions, and pertinent application problems. **Credit for this course may not be counted toward any degree requirements. Prerequisite: MTH 100** or a satisfactory score on a placement test. (Offered Fall, Spring, Summer)
- MTH 107 *Modern Mathematics* – 3 hrs. This course covers the metric system, sets, base numeration systems, systems of whole numbers, systems of integers, elementary number theory, elementary logic, relations, and functions. **Prerequisite: MTH 101** or a satisfactory score on a placement test. (Offered Fall, Spring, Summer)
- MTH 110 *Finite Mathematics* – 3 hrs. This course covers sets, counting, permutations, combinations, basic probability theory (including Baye’s Theorem), statistical concepts (including binomial distributions, and normal distribution), matrices and their applications to Markov chains and decision theory. Additional topics may include symbolic logic, linear models, linear programming, the simplex method and applications. **This course is designed for students who are not majoring in science, engineering, commerce, or mathematics. Prerequisite: MTH 101** or satisfactory placement test scores. (Offered Fall, Spring, Summer)
- MTH 112 *(Formerly MTH 103) Pre-Calculus Algebra* – 3 hrs. This course covers the algebra of polynomial, rational, exponential and logarithmic functions; algebraic equations; linear and quadratic equations; linear and quadratic inequalities; systems of equations and inequalities; and the binomial theorem. Additional topics may include matrices, Cramer’s rule, and mathematical induction. **Prerequisite: MTH 101** or a satisfactory score on a placement exam. (Offered Fall, Spring, Summer)
- MTH 113 *(Formerly MTH 104) Pre-Calculus Trigonometry* – 3 hrs. This course covers the study of (circular) trigonometric functions; inverse trigonometric functions; trigonometric identities; and trigonometric equations. The course also covers vectors, complex numbers, DeMoivre’s Theorem, and polar coordinates. Additional topics may include conic sections, sequences, and using matrices to solve linear systems. **Prerequisite: MTH 112** or a satisfactory score on a placement exam. (Offered Fall, Spring, Summer)
- MTH 120 *(Formerly MTH 130) Calculus and Its Applications* – 3 hrs. This course is intended to give a broad overview of calculus and is taken primarily by students majoring in commerce and business. It includes differentiation and integration of algebraic, exponential, and logarithmic functions and applications to business and economics. The course also includes functions of several variables, partial derivatives with applications, LaGrange multipliers, L’Hopital’s rule, multiple integration with applications. This course does not substitute for MTH 125 or MTH 126. **Prerequisite: MTH 112.** (Offered Fall, Spring, Summer)

- MTH 125 *(Formerly MTH 171) Calculus I* – 4 hrs. This course covers limits; derivatives of algebraic, trigonometric, exponential, and logarithmic functions; applications of the derivative; differentials; maximum and minimum problems; curve sketching using calculus; and the definite integral and its applications to area. **This is the first of three courses in the basic calculus sequence taken primarily by students in science, engineering and mathematics. Prerequisite: MTH 113** or satisfactory placement test scores. (Offered Fall, Spring, Summer)
- MTH 126 *(Formerly MTH 172) Calculus II* – 4 hrs. This course covers applications of integration including volume, arc length and work; techniques of integration; infinite series; polar coordinates and polar graphs; vectors in the plane and in space, parametric equations; curves in the plane and in space; and lines and planes in space. **This is the second of three courses in the basic calculus sequence. Prerequisite: MTH 125 or MTH 145.** (Offered Fall, Spring, Summer)
- MTH 145 *(Formerly MTH 171H) Honors Calculus I* – 4 hrs. This course covers the content of MTH 125 at an accelerated pace and includes a major application project. This course covers limits; derivatives of algebraic, trigonometric, exponential, and logarithmic functions; applications of the derivative; differentials; maximum and minimum problems; curve sketching using calculus; and the definite integral and its applications to area. **Prerequisite: MTH 113** or satisfactory placement test scores. (Offered Fall)
- MTH 146 *(Formerly MTH 172H) Honors Calculus II* – 4 hrs. This course covers contents of MTH 126 at an accelerated pace and includes a major application project. This course covers applications of integration including volume, arc length, and work; techniques of integration; infinite series; polar coordinates and polar graphs; vectors; parametric equations; curves in the plane and in space; and lines and planes in space. **Prerequisite: MTH 125 or MTH 145.** (Offered Spring)
- MTH 227 *(Formerly MTH 201) Calculus III* – 4 hrs. This course covers vector-valued functions; functions of several variables, partial derivatives and their applications; quadric surfaces, multiple integration, and vector calculus, including line and surface integrals; curl and divergence, Green's Theorem, and Stoke's Theorem. **This is the third of three courses in the basic calculus sequence. Prerequisite: MTH 126 or MTH 146.** (Offered Fall, Spring, Summer)
- MTH 237 *(Formerly MTH 203) Introduction to Linear Algebra* – 3 hrs. Introduction to theory of matrices, determinants, methods of solving the linear system  $Ax = b$  via Gaussian elimination, Gauss-Jordan elimination, eigenvalues and eigenvectors, diagonalization of matrices, real vector spaces, bases and dimension, linear transformations, inner product spaces. Additional topics may include quadratic forms and applications of matrix theory in solving differential equations. **Prerequisites: MTH 126 or MTH 146.** (Offered Fall, Spring, Summer)
- MTH 238 *(Formerly MTH 202) Applied Differential Equations* – 3 hrs. An introduction to numerical methods, qualitative behavior of first order differential equations, techniques for solving separable and linear equations analytically, and applications to various models, including populations, motions and chemical mixtures. Techniques for solving higher order linear differential equations with constant coefficients, including the general theory and the methods of undetermined coefficients, reduction of order, and variation of parameters. Interpretation of the behavior of solutions, and applications to physical models with higher order governing equations. The Laplace transform as a tool for solving initial value problems with discontinuous inhomogeneous terms. **Prerequisite: MTH 126 or MTH 146.** (Offered Fall, Spring, Summer)
- MTH 301 *Abstract Algebra I* – 3 hrs. Sets, relations, and functions; properties of integers and induction; permutations; groups, group homomorphisms, and quotient groups; Cartesian and direct products. **Prerequisite: MTH 237** (Offered Fall)
- MTH 302 *Abstract Algebra II* – 3 hrs. This course is a continuation of MTH 301. Rings, ring homomorphisms, ideals, quotient rings; integral domains; fields and polynomial extensions of fields. **Prerequisite: MTH 301.** (Offered Spring)

- MTH 303 *(PHY 303) Methods of Mathematical Physics* – 4 hrs. Vector calculus; partial differential equations; boundary value problems. Fourier series; Laplace transforms; and Green's function methods. **Prerequisite: MTH 227.** (Offered Fall and/or Spring)
- MTH 304 *Mathematics for Elementary Teachers* – 3 hrs. This course covers topics in the K-6 mathematics curriculum: counting, integers, the fundamental operations of arithmetic, ratio and proportion, elementary geometry, uncertainty and data interpretation. Problem solving, investigation, reasoning, communication, and the use of technology are integral parts of this course. **This course is not open to Mathematics or Secondary Education Majors.** **Prerequisites: MTH 112 or MTH 107.** (Offered Fall, Spring, Summer)
- MTH 305 *Applied Mathematics* – 3 hrs. Functions of several variables, partial derivatives, differentials, power series, binomial series, Maclaurin and Taylor series, and solution of elementary first order and second order differential equations. Applications for engineering technology. **This course is not open to Mathematics majors or Secondary Education Mathematics majors.** **Prerequisite: MTH 126 or MTH 146.**
- MTH 307 *Geometry* – 3 hrs. A study of plane and solid Euclidean geometry from the modern viewpoint; relationships of Euclidean and non-Euclidean geometry; selected topics of affine and projective geometry. **This course is open to Elementary and Secondary Education majors; this course is not open to Mathematics majors.** **Prerequisite: MTH 112.** (Offered Spring)
- MTH 351 *Introduction to Real Analysis I* – 3 hrs. Logical connectives; quantifiers, inductive and deductive methods of proof; negation; contrapositive; sets; relations and functions. The completeness axiom; topology of the real line; compact sets; sequences; subsequences; Cauchy sequences; limits; continuity; uniform continuity. **Prerequisite: MTH 227.** (Offered Fall)
- MTH 352 *Introduction to Real Analysis II* – 3 hrs. Continuation of MTH 351. Differentiation; Riemann integral; derivatives of integrals; infinite series; absolute and conditional convergence; power series; Taylor series; sequences and series of functions; modes of convergence. **Prerequisites: MTH 351.** (Offered Spring)
- MTH 355 *Applied Statistics* – 3 hrs. Collection and presentation of data; measures of central tendency and variability; skewness, binomial, normal, Chi-square, t-and F-distributions; estimation; confidence intervals and hypothesis testing; correlation coefficient; and analysis of variance. This course includes laboratory activities. (This course is designed for majors in biology, zoology, botany, medical technology, pre-veterinary medicine, and pre-nursing). **Prerequisite: MTH 112.**
- MTH 357 *Computers and the Teaching of Mathematics* – 3 hrs. Introduction to digital computers; modern uses of computers, mathematics materials on computers and computing; uses of computers in mathematics instruction, laboratory practice and development of mathematics curriculum materials in a Visual Basic language. **This course is open to Secondary Mathematics Education majors; this course is not open to Mathematics majors.** **Prerequisite: MTH 125.** (Offered Spring).
- MTH 371 *Number Theory* – 3 hrs. An introduction to the theory of numbers through a study of divisibility; congruencies; quadratic reciprocity; Diophantine equations; factorization; algebraic numbers. **Prerequisite: MTH 237.** (Offered Fall).
- MTH 383 *(CMP 305) Numerical Analysis* – 3 hrs. Introduction to numerical methods for interpolation; evaluating roots of polynomials, systems of equations; integration; differentiation; differential equations; approximation and error. **Prerequisites: MTH 227 and CMP 102.** (Offered Fall and/or Spring)
- MTH 401 *History of Mathematics* – 1 hr. A course designed to explore and study topics in the history of mathematics. **Prerequisite: MTH 125.** (Offered Fall)

- MTH 452 *Complex Analysis* – 3 hrs. The complex numbers; functions and continuity of complex variables; differentiability; Cauchy-Riemann conditions; contour integral theorem; sequences and series; the calculus of residues. **Prerequisite:** MTH 227. (Offered Fall and/or Spring).
- MTH 453 *(ST 453) Probability and Statistics* – 3 hrs. Probability axioms; methods of enumeration; conditional probability; independence; empirical frequency distribution; discrete and continuous random variables; expectation; moment generating functions; joint distributions; sums of random variables; limit theorems. **Prerequisite:** MTH 126 or MTH 146. (Offered Fall, Spring and Summer)
- MTH 454 *Advanced Calculus* – 3 hrs. Topics of advanced nature in differential and integral calculus. Emphasis is placed on the understanding of concepts and on the basic principles of analysis. **Prerequisite:** MTH 227.
- MTH 480 *Selected Topics in Mathematics* – 3 hrs. A course designed to discuss current topics in algebra and/or analysis. **Prerequisite:** MTH 301 or MTH 351 or consent of instructor. (Offered Fall, and/or Spring)
- MTH 481 *Senior Project* – 3 hrs. A course designed for mathematics majors who are conducting a senior mathematics project under the direction of a mentor. **This course is open only to Mathematics & Secondary Education Mathematics majors. Prerequisites:** MTH 301 or MTH 351 or consent of instructor. (Offered Fall, Spring)
- MTH 482 *Independent Study* – 1 hr. A course designed for investigative study in an area of contemporary mathematics under the supervision of a senior mathematics instructor. **Prerequisite:** MTH 237 or consent of instructor. (Offered Spring)
- ST 324 *(MTH324) Applied Statistical Computing* – 3 hrs. An introduction to computer-assisted data analysis with emphasis on the interpretation of results generated by such software packages as SAS, SPSS, STATPAK and others. Topics include descriptive statistics; contingency tables, correlation; two-group comparisons; simple, polynomial and multiple linear regression; and analysis of variance. **Prerequisite:** MTH 112 or consent of instructor. (Offered Fall)
- ST 327 *(MTH 327) Applied Regression Analysis* – 3 hrs. A study of least squares; simple, polynomial and multiple linear regression including residual and lack-of-fit analysis; simple multiple, partial, and multiple-partial correlation; analysis of covariance; model building algorithms, analysis of variance, and computer-assisted data analysis. **Prerequisite:** ST 324. (Offered Fall or Spring)
- ST 344 *(MTH 344) Design and Analysis of Experiments I* – 3 hrs. A study of the fundamental concepts and basic principles of design, construction and analysis of experimental designs. Designs to be included are completely randomized complete block, Latin square, Graeco-Latin square, split-plot, multiple comparison, and factorial. **Prerequisite:** ST 327. (Offered Fall or Spring)
- ST 444 *(MTH 444) Design and Analysis of Experiments II* – 3 hrs. A continuation of ST 344. Topics include incomplete block designs, analysis of covariance; regression approach to the analysis of selected design such as two-way unequal cells, factorial confounding techniques, fractional replication, response surface methodology, evolutionary operations, cross-over and repeated measure designs; and selected transformations and heterogeneity of variance techniques. **Prerequisite:** ST 344. (Offered Fall or Spring)
- ST 473 *(MTH 473) Statistics* – 3 hrs. An introduction to the theory of statistics. Topics include sampling distributions, estimation, hypothesis testing, linear models, analysis of variance, nonparametric and distribution-free procedures. **Prerequisite:** ST 453. (Offered Fall or Spring)



## DEPARTMENT OF MILITARY SCIENCE

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### INTRODUCTION

The ROTC Program is a cooperative program contractually agreed to by the United States Army and Alabama A&M University. The faculty and administration at the university felt the student body should have an opportunity to compete for and receive commissions as officers in the United States Army. The administration requested in 1970 that a Reserve Officers Training Corps (ROTC) be established at the University at the earliest possible time. The U.S. Army responded to the request, and Army ROTC was established at Alabama A&M University by Department of the Army General Order Number 4, dated 28 January 1971. The Professor of Military Science is the head of the department, and the remaining commissioned officers are assistant professors who perform duties as instructors and additional duties in the field of administration, operations and supply.

### MISSION/OBJECTIVES

The mission of the Military Science Department is to recruit, train and commission the future officer leadership of the United States. Training of cadets is centered on preparation of cadets for attendance at various camps through teaching of land navigation/map reading, leadership, discipline, military customs, courtesies and values.

The Military Science Department will achieve its mission by meeting the following objectives:

- Train cadets for attendance and successful completion of the Leaders Training Course and National Advanced Leadership Camp
- Train/prepare advanced course cadets for successful completion of the Officer Basic course.
- Provide the military service with highly qualified and motivated young men and women with leadership potential to help meet the requirement for officers in the active and reserve components.

### FINANCIAL ASSISTANCE/SCHOLARSHIPS

Students may compete for and earn an ROTC scholarship. The Army ROTC scholarship provides up to \$17,000 per year for tuition, textbooks, and mandatory fees.

All scholarship cadets and contracted cadets enrolled in the advanced course (juniors and seniors) are paid a monthly stipend. Stipend amounts are:

MS I	-	\$250.00
MS II	-	\$300.00
MS III	-	\$350.00
MS IV	-	\$400.00

Another way to get financial assistance is through the Simultaneous Membership Program (SMP). This is a volunteer officer training program open for National Guard and U.S. Army Reserve students. Students can participate simultaneously in the ROTC Program and continue monthly drills with their Reserve and National Guard Unit. SMP students can receive monthly drill pay from their unit and receive a monthly stipend from the ROTC program.



## **COOPERATIVE EDUCATION/INTERNSHIPS**

- Qualified cadets may attend Leaders Training Course (LTC) at Fort Knox, Kentucky during the summer. LTC allows cadets with no previous ROTC to earn credit for completion of the ROTC basic course.
- MS III cadets attend a paid six-week Advanced Leadership Camp at Fort Lewis, Washington during the summer prior to entering MS IV.
- Qualified cadets in the advanced program may also compete and attend Cadet Troop Leaders Training (CTLT) and Airborne School offered during the summer

## **COMMISSIONING REQUIREMENTS**

Candidates for commissioning in the U.S. army must satisfy the following requirements:

- Meet and satisfy all university and major academic requirements for graduation
- Complete all ROTC department requirements to include meeting U.S. Army physical fitness requirements
- Participate in the commissioning ceremony

## **PROGRAM OFFERINGS**

### **BASIC COURSE (MSC 101 and MSC 102; MSC 201 and MSC 202)**

The Basic Course is taken during the freshman and sophomore years of college. While enrolled in the Basic Course, students are under no military obligation. Military Science is considered an integral part of the regular University program and in keeping with tradition. MSC 101, 102, 201 and 202 are considered as electives. Both male and female students are accepted on a voluntary basis. Those students who successfully complete the basic course, meet the Army physical standards, and demonstrate officer potential, will be considered for contracting and enrollment in the advanced course.

### **ADVANCED COURSE (MSC 301 and MSC 302; MSC 401 and MSC 402)**

Students who have successfully completed the basic ROTC course or basic camp are eligible to enroll in the Advanced Course. Veterans who have had at least two years of active duty service, National Guard or United States Reserve members who have completed basic training, and students who have completed at least three years of JROTC, and who have completed 60 semester hours, may receive placement credit and authorization to enroll in the advanced program when approved by the Professor of Military Science (PMS).

## **SPECIAL INFORMATION**

To qualify for enrollment in the Advanced Course, a student must be medically qualified (determined by standard Army medical examination), achieve a minimum qualifying GPA of 2.0, complete the two-year basic course, and gain approval by the PMS. Under the cross-enrollment program, students attending the University of Alabama in Huntsville and Athens State University are allowed to take ROTC at Alabama A&M University, receive credit and qualify for a commission as an officer in the United States Army.

Graduate level students may enroll and receive a commission as an officer in the U.S. army. A graduate level student must have two years remaining as a student at the University and must complete the Leaders Training Course and/or National Advanced Leaders Course prior to commissioning.

Under the cross-enrollment program, students attending the University of Alabama in Huntsville and Athens State University are allowed to take ROTC at Alabama A&M University, receive credit and qualify for a commission as an officer in the United States Army.

### **UNIFORM, EQUIPMENT, AND FEES**

Uniforms, texts, and other equipment are furnished by the Military Science Department at no expense to the cadet. In instances where shortages or damages beyond fair wear and tear occur, cadets are required to make full restitution. A \$20.00 (nonrefundable) laboratory fee is required of all cadets at registration. This fee covers instructional materials and field trips as well as attendance at the annual Military Ball.

### **EXTRACURRICULAR ORGANIZATIONS**

The cadet corps has a variety of activities which include the drill team, Ranger Company, Pershing Rifles, Color Guard and Honor Guard.

### **SPECIAL PROGRAMS/AWARDS/RECOGNITIONS**

Numerous awards are available and awarded to ROTC cadets from both Army and civilian organizations.

### **DISTINGUISHED MILITARY STUDENT (DMS)**

A distinguished military student (DMS) is a MS IV cadet who has been designated by the PMS and has met the following qualifications:

- (1) Possesses outstanding qualities of leadership and high moral character.
- (2) Exhibited a definite aptitude for and interest in the military service.
- (3) Attained a military science standing in the upper third of the ROTC class and rank in the upper third of the order-of-merit list (OML) as established by the PMS.
- (4) Attained an overall academic standing in the upper half of his or her university or college class.
- (5) Demonstrated initiative and leadership capabilities through his or her participation and achievements in campus and civic activities.

The PMS, with the concurrence of the University President, will designate distinguished military students in writing.

All distinguished military students are authorized to wear the Distinguished Military Student Badge.

### **DISTINGUISHED MILITARY GRADUATE (DMG)**

A distinguished military graduate (DMG) is a cadet designated by the PMS who has met the following qualifications:

- (1) Maintained the scholastic standards listed for a DMS.
- (2) Successfully completed the advanced course, to include training at advanced camp.
- (3) Graduated with a baccalaureate degree or has a statement from the head of the institution that all requirements for a baccalaureate degree have been completed and that the degree will be conferred at the next regular commencement.

## PROGRAM CURRICULUM

### A Minor in Military Science

The Military Science Program consists of a two-year basic course and a two-year advanced course enrolling both male and female students. Eighteen (18) semester credit hours are required for the minor in Military Science. Veterans who receive placement credit will not receive the eighteen (18) semester credit hours and consequently do not meet the requirement to select Military Science as a minor. Basic camp candidates must register for the basic camp six (6) credit hours (MSC 206) during the summer prior to attending basic camp. In this instance, the semester-hour requirement will be met in order to earn a minor in Military Science.

The minor program consists of the following courses:

<b>Freshman Year</b>			
<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MSC 101 Military Science I-A	2	MSC 102 Military Science I-B	2
<b>Sophomore Year</b>			
<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MSC 201 Military Science II-A	2	MSC 202 Military Science II-B	2
<b>Junior Year</b>			
<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MSC 301 Military Science III-A	3	MSC 302 Military Science III-B	3
<b>Senior Year</b>			
<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MSC 401 Military Science IV-A	3	MSC 402 Military Science IV-B	3

## COURSE DESCRIPTIONS

MSC 101	<i>Military Science I-A</i> – 2 hrs. The class presents a broad overview of the history of ROTC, the ROTC program and its benefits to the student. The positive aspects of a career as an Army officer include information on pay and allowances, the military retirement system, advancement, and travel opportunities. Military customs and traditions are discussed along with the role of the Army, the Army Reserves and the National Guard. Students receive instruction on basic first aid, principles of leadership and traits of a leader. <b>Prerequisite: None.</b> (Offered Fall and Spring)
MSC 102	<i>Military Science I-B</i> – 2 hrs. A continuation of MSC 101. <b>Prerequisite: MSC 101.</b> (Offered Fall and Spring)
MSC 201	<i>Military Science II-A</i> – 2 hrs. (One, 2-hour class period and one, 2-hour leadership development laboratory). The course consists of instructions on the rules, techniques, and formats of effective military communications through military correspondence and briefings. The course covers the mission and functions of the various military branches. Students receive instruction on the

organization, mission and weapons of the rifle squad, platoon, and company, along with being familiarized with the organization of the battalion, brigade, and divisional size units. The principles of war are analyzed to determine their proper employment. The confluence and interaction of military affairs with diplomatic, political, social, economic, and intellectual trends in society are addressed. Students are also provided instruction in map reading, which includes grid, scale and distance, direction, azimuth and backazimuth, elevation and relief. **Prerequisites: MSC 101 and MSC 102.** (Offered Fall)

MSC 202 *Military Science II-B* – 2 hrs. A continuation of MSC 202. **Prerequisite: MSC 201.** (Offered Spring)

MSC 206 *Basic Camp* – 6 hrs. This course is designed to provide an orientation to students without military training background and also gives students an opportunity to examine military life. Successful completion of a six-week summer camp experience at Fort Knox, Kentucky, entitles the student completing the sophomore year to receive two years placement credit. There is no obligation or commitment to military service beyond the basic camp for students who elect not to enter the advanced program. Basic camp students earn more than \$700.00 while participating in the summer training at Fort Knox. **Registration for academic credit for ROTC basic camp is optional. Students who have no desire to receive academic credit for MSC 206 are not required to register for basic camp. However, prior registration and tuition payment are required for those who wish to receive academic credit for successful completion of basic camp.** (Offered Summer)

MSC 301 *Military Science III-A* – 3 hrs. (Three, 1-hour classroom sessions and one, 2-hour leadership development laboratory, and an advanced camp of six (6) weeks duration). The course consists of instruction in reference to company and platoon level training, counseling, communication skills, human relations and various other topics. Additionally, students receive instruction on the fundamentals of map reading which encompasses grid, scale and distance, direction, elevation and relief, intersection and resection. Students are introduced to the fundamentals of tactical operations, to include writing of combat orders, command and staff organizations, command/staff actions, command relationships, communication systems, intelligence gathering, and the role of the various branches of the Army. Students are taught first aid and selected other subjects to prepare them for attendance at advanced camp. **Prerequisites: MSC 101, MSC 102, MSC 201, MSC 202, or their equivalents.** (Offered Fall)

MSC 302 *Military Science III-B* – 3 hrs. A continuation of MSC 301. **Prerequisite: MSC 301.** (Offered Spring)

MSC 401 *Military Science IV-A* – 3 hrs. (Three, 1-hour classroom sessions and one, 2-hour leadership development laboratory.) Students receive instruction on the analysis of selected leadership and management topics in the area of training, logistics and personnel management. Instruction encompasses military correspondence, information and decision papers, after action reports, briefings, Army personnel Management System, and post/installment support. Students are presented instruction on the Military Justice System which includes search and seizure, nonpunitive disciplinary measures and nonjudicial punishment. Additionally, students receive instruction on military professional ethics. The course concludes with selected pre-commissioning seminars dealing with topics of interest for the newly commissioned Army officer. **Prerequisites: PMS approval, MSC 301, and MSC 302.** (Offered Fall)

MSC 402 *Military Science IV-B* – 3 hrs. A continuation of MSC 401. **Prerequisite: MSC 401.** (Offered Spring)

MSC 501 *Military Science V-A* – 2 hrs. Students receive instruction encompassing briefings and selected military topics as well as physical training. **Prerequisite: Extension of scholarship benefits for approved cadets, MSC 301, MSC 302, MSC 401, and MSC 402.** (Offered Fall)

MSC 502      *Military Science V-B* – 2 hrs. A continuation of MSC 501. **Prerequisite:** **MSC 501.** (Offered Spring)

## **DEPARTMENT OF NATURAL AND PHYSICAL SCIENCES**

309-A Carter Hall  
256-372-5329

The Department of Natural and Physical Sciences includes the program areas of biology, chemistry, and mathematics.

### **BIOLOGY PROGRAM AREA MISSION/OBJECTIVES**

The objectives of the biology program are to educate teachers and to prepare students for entrance into graduate school, research careers, medicine, pharmacy, dentistry, veterinary medicine, clinical technology and related health service occupations.

### **INTRODUCTION**

The program offers a Bachelor of Science degree in one major, "Biology," with five options of concentration. The options are: Botany, Zoology, Medical Technology, Pre-Medicine and Ecotoxicology. The curriculum consists of (a) required non-biology courses, (b) required biology courses, and (c) specific electives for the various options. Students, with recommendations from their advisors, may select a minimum of 8 hours under the track options. The curriculum includes 114 semester hours of core and specialty courses as a biology major, 8 semester hours of biology option courses and 4 semester hours of free electives for a total of 126 semester hours needed for graduation with a B.S. degree in biology.

Although all biology options can provide prerequisites for several health-related professions such as physical therapy, surgeon's assistant, cytotechnology, occupational therapy, and public health, a specific cooperative degree curricula in pre-nursing is also offered.

The pre-medicine option is designed to meet needs in areas such as pre-dentistry, pre-medicine, and for students who plan to pursue graduate work. The botany option is designed to prepare students for careers in areas such as botany, pharmacy, forestry, herbiology, plant ecology and plant taxonomy. The ecotoxicology option prepares students for careers in toxicology, environmental toxicology, environmental health, conservation, and research careers in industry and government.

The biology program provides, in cooperation with the School of Education, curricula for students planning to teach general biology in high schools. The curriculum for general biology education is found under the section devoted to secondary education in this catalogue.

### **GRADUATION REQUIREMENTS**

Biology students must complete 114 semester hours of core and specialty courses as a biology major, 8 semester hours of biology option courses and 4 semester hours of free electives for a total of 126 semester hours. The student must maintain a 2.00 cumulative average. In addition, the student must take one of the following professional exams: MCAT, DAT, VAT, or the GRE. Once the requirements are met the student will receive a B.S. degree in biology with a minor in chemistry.

### **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

The program area of biology provides financial assistance in the form of bi-weekly and federal work-study programs. In addition, faculty members with research grants may also provide financial assistance to students. A scholarship fund through the Alabama A&M University Foundation is also available to biology students.

## COOPERATIVE EDUCATION/INTERNSHIPS

Internships may be obtained as a routine part of the following courses: BIO 100, Introduction to Health Careers and BIO 490, Biology Internship. These Internships are with local health career organizations and professionals.

## STUDENT/PROFESSIONAL ORGANIZATIONS

Students in the program area of biology may become members of the following organizations if the requirements are met. Any biology faculty member can provide information about the following organizations: Beta Kappa Chi, Alpha Kappa Mu, and Pre-Professional Club.

### BIOLOGY MAJOR

126 Credit Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	PSY 201 Gen. Psychology	3
ENG 101 Composition I	3	ENG 102 Composition II	3
HIS 101 World History I	3	HIS 102 World History II	3
BIO 103 Principles of Biology	3	BIO 201 Invertebrate Zoo	3
BIO 103L Principles of Biology Lab	1	BIO 201L Invertebrate Zoo Lab	1
HED 101 Health Education <b>or</b>	2	CMP 101 Fund. of Computer &	
MSC 101 Military Science <b>or</b>	2	Information Systems	3
PED 103 Fitness for Life	2	MTH 112 Pre-Cal Algebra	<u>3</u>
101 Art <b>or</b> Music Appreciation	3		19
BIO 100 Careers in Life Science	<u>1</u>		
	17		

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 Humanities I	3	ENG 204 Humanities II	3
MTH 113 Pre-Cal. Trig	3	MTH 125 Calculus I	4
101 (GER, FRE, or SPA)	3	102 (GER, FRE, or SPA)	3
CHE 101 Gen. Chemistry I	3	CHE 102 Gen. Chemistry I	3
CHE 103L Gen. Chemistry Lab I	1	CHE 104 Gen. Chemistry Lab II	1
ECO 200 Basics Economics	<u>3</u>	BIO 202 Comp. Anatomy	3
	16	BIO 202L Comp. Anatomy Lab	<u>1</u>
			18

#### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PHY 105 Physics I	4	PHY 106 Physics II	4
CHE 301 Organic Chemistry I	3	CHE 302 Organic Chemistry II	3
CHE 303L Organic Chemistry Lab I	1	CHE 304L Organic Chemistry Lab II	1
BIO 203 General Botany <i>or</i>		BIO 311 Genetics	3
BIO 204 General Botany	3	BIO 311L Genetics Lab	<u>1</u>
BIO 204L General Botany Lab	1		12
MTH 126 Calculus II	<u>4</u>		
	16		

**Senior Year**

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
BIO 434	Physiology	3	BIO 411	Cell Biology	3		
BIO 434L	Physiology Lab	1	BIO 411L	Cell Biology Lab	1		
BIO 330	Microbiology	3	BIO	Elective	4		
BIO 330L	Microbiology Lab	1	CHE 407	Biochemistry	4		
BIO	Elective	4			12		
	Free Elective	4					
		16					

**Note:** This curriculum includes 114 hours of core courses as a Biology major, 8 hours of biology option courses, and 4 hours of free electives. A track option must be selected. Students may not substitute courses in a track option.

**COURSES FOR BIOLOGY OPTION TRACKS**

The Biology major curriculum includes 114 hours of “core” courses, 8 hours of biology options courses, and 4 hours of free electives for a total of 126 hours for graduation with a B.S. degree in biology. The courses for option tracks are as follows:

<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>	<b>Option 4</b>	<b>Option 5</b>
<u>Botany</u>	<u>Zoology</u>	<u>Med-Tech</u>	<u>Pre-Med</u>	<u>Ecotoxicology</u>
Plant Physiology	Molecular Biology	Med. Micro	Molecular Biology	Environmental Biology
Plant Pathology	Parasitology	Parasitology	Human A&P	Ecotoxicology I
Plant Anatomy	Entomology	Anal. Chemistry	Med. Micro	Limnology
Environmental Biology	Med. Microbiology	Immunology	Immunology	Ecotoxicology II
	Biochemistry	Biochemistry	Biochemistry	Ecology
			Embryology	

**Note:** Students, with recommendation of advisor, may select a minimum of 8 semester hours for an option in the biology major program. Students may not substitute courses in a option.

**PRE-NURSING PROGRAM**

A two-year pre-nursing program is offered. Upon completion of these two years, the student is advised to register in a two-year professional curriculum in nursing. Cooperative agreements are currently maintained with Emory University in Atlanta, Georgia; the University of Alabama in Birmingham (UAB); the University of Alabama at Huntsville (UAH); and the University of North Alabama in Florence (UNA). The B.S. degree in nursing will be awarded by the respective institution attended for the final two years.

**Freshman Year**

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	ENG 102	Composition II	3		
ENG 101	Composition I	3	HIS 102	World History II	3		
HIS 101	World History I	3	CHE 112	Applied Chemistry	3		
CHE 111	Applied Chemistry I	3	CHE 114L	Applied Chemistry Lab	1		
CHE 113L	Applied Chemistry Lab II	1	SOC 210	Social Problems	3		
	101 Art or Music Appreciation	3	PSY 301	Elem. Behavioral Statistics	3		
BIO 103L	Principles of Biology	1	MTH 112	Pre-Cal Algebra	3		
BIO 100	Careers in Life Science	1			19		
BIO 103	Principles of Biology	3					
		19					



## Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
*PHY 101 Physical Science	3	*PHY 102 Physical Science	3
PSY 201 General Psychology	3	PSY 330 Social Psychology	3
BIO 221 Human A&P	3	SOC 212 Marriage & Family	3
BIO 221L Human A&P Lab	1	BIO 330 Microbiology	3
ECO 323 Principles of Economics	3	BIO 330L Microbiology Lab	1
ENG 203 Humanities I	3	PSC 306 State & Local Government <b>or</b>	
SOC 201 Intro. to Sociology	<u>3</u>	PSC 305 Federal Government	(3)
	19	BIO 222 Human A&P	1
		BIO 222L Human A&P Lab	<u>3</u>
			20

Note: If a student fails to enter or complete a nursing program and chooses to re-enter to get a biology degree, he/she must complete one of the track options.

\* Required only if students plan to attend Emory University after completing two years at Alabama A&M University.

## COURSE DESCRIPTIONS

- BIO 100 *Introduction to Careers in Life Sciences* – 1 hr. Familiarization with all careers in life sciences. **Required of all majors. Prerequisite: None.** (Offered Fall)
- BIO 101 *General Biology* – 3 hrs. (Three, 1-hr. Lectures). The first part of a full year's course in the biological sciences. The first semester is devoted to an investigation of basic biological concepts and their application to the variety of life. Selected examples from the major groups of animals and plants are used. **For non-majors. Prerequisite: None. Co-requisite: BIO 101L.** (Offered Fall, Spring, and Summer)
- BIO 101L *General Biology Lab* – 1 hr. (One, 2-hr. Lab) Lab designed to enhance and accommodate BIO 101. **For non-majors. Prerequisite: None; Co-requisite: BIO 101.** (Offered Fall, Spring, and Summer)
- BIO 102 *General Biology* – 3 hrs. (Three, 1-hr. Lectures). The second semester is devoted to the biology of humans. The problems of support, movement, supply of materials, distribution, waste removal, regulation and reproduction are described in detail. **For non-majors. Prerequisite: None. Co-requisite: BIO 102L.** (Offered Fall, Spring, and Summer)
- BIO 102L *General Biology Lab* – 1 hr. (One, 2-hr. Lab) Lab designed to enhance and accommodate BIO 102. **For non-majors. Prerequisite: None. Co-requisite: BIO 102.** (Offered Fall, Spring, and Summer)
- BIO 103 *Principles of Biology* – 3 hrs. (Three, 1-hr. Lectures). A study of fundamental biological principles with primary emphasis on molecular basis of life and cellular organization: cellular energetics and metabolism; growth and reproduction; and genetics and evolution. Required of all majors. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- BIO 103L *Principles of Biology Lab* – 1 hr. (One, 2-hr. Lab) A customized lab to accommodate BIO 103 for majors. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- BIO 200 *Environmental Biology* – 3 hrs. An introduction to natural biological processes and their impact on man and his environment. Emphasis on problems caused by man's use of the natural world will be made along with an introduction to the principles of applied and environmental microbiology. Specific topics to be discussed include environmental virology, disinfection of water and wastewater, biogeochemical cycles, biology of waste treatment and biological aerosols. **Prerequisite: BIO 103.** (Offered Spring)

- BIO 201 *Invertebrate Zoology* – 3 hrs. A study of the body plans, physiology, taxonomy and development of the major groups of animals lacking backbones. Life histories of animals that affect the welfare of humans are stressed. **Prerequisite: BIO 103.** (Offered Spring)
- BIO 201L *Invertebrate Zoology Lab* – 1 hr. A companion lab for BIO 201 covering the lecture topics. **Prerequisite: BIO 103L.** (Offered Spring)
- BIO 202 *Comparative Vertebrate Anatomy* – 3 hrs. Morphological study of the vertebrates with a comparative study of the organic systems and their phylogenetic significance. Laboratory techniques in dissection of the frog and cat. **Prerequisite: BIO 103.** (Offered Fall)
- BIO 202L *Comparative Vertebrate Anatomy Lab* – 1 hr. A companion lab for BIO 201 covering the lecture topics. **Prerequisite: BIO 103L.** (Offered Fall)
- BIO 203 *General Botany I* – 3 hrs. A survey of the structure and physiology of seedbearing plants. **Prerequisite: BIO 103.** (Offered Fall)
- BIO 203L *General Botany Lab* – 1 hr. A companion lab for BIO 203 covering the lecture topics. **Prerequisite: BIO 103L.** (Offered Fall)
- BIO 204 *General Botany II* – 3 hrs. A survey of the plant kingdom with particular emphasis on nomenclature, systems of classification, reproduction, life cycles, and study of heredity and evolution. **Prerequisite: BIO 103.** (Offered Spring)
- BIO 204L *General Botany II Lab* – 1 hr. A companion lab for BIO 204 covering the lecture topics. **Prerequisite: BIO 103L.** (Offered Spring)
- BIO 205 *Ecology* – 3 hrs. Study of the tropic relationships and energy transfer in ecosystem; discussion of the environmental factors affective the distribution and abundance of animals an plants and the composition of various communities. **Prerequisite: Consent of instructor.** (Offered Spring)
- BIO 205L *Ecology Lab* – 1 hr. A companion lab for BIO 205 covering the lecture topics. **Co-requisite: BIO 205.** (Offered Spring)
- BIO 221 *Human Anatomy & Physiology I* – 3 hrs. A study of cell structure, function and organization, body covering and thermal regulation, skeletal and muscular systems, central, peripheral, sensory nervous system, and cardiovascular systems. **Prerequisite: BIO 101, 102 or 103.** (Offered Fall and Summer)
- BIO 221L *Human Anatomy & Physiology I Lab* – 1 hr. A companion lab for BIO 221 covering the lecture topics. **Prerequisite: BIO 101L, 102L or 103L.** (Offered Fall and Summer)
- BIO 222 *Human Anatomy & Physiology II* – 3 hrs. Discussion of digestive system, nutrition, metabolism and energy exchange, respiratory, urinary, endocrine, reproductive systems, prenatal development, aging and death, defenses against disease, aviation, space and deep sea diving physiology. **Prerequisite: BIO 221.** (Offered Spring)
- BIO 222L *Human Anatomy & Physiology II Lab* – 1 hr. A companion lab for BIO 222 covering the lecture topics. **Prerequisite: BIO 221L.** (Offered Spring)
- BIO 311 *Principles of Genetics* – 3 hrs. A primary emphasis on classical concepts with an integration of microbial and molecular genetics at crucial points. Laboratory exercise includes use of plants, animals and microbes. **Prerequisites: CHE 101, and CHE 101L; CHE 102 and CHE 102L; and BIO 103 and BIO 103L. Co-requisite: BIO 311L.** (Offered Spring)

- BIO 311L *Principles of Genetics Lab* – 1 hr. A companion lab for BIO 311 covering the lecture topics. **Prerequisites:** CHE 101 and 101L, CHE 102 and 102L, BIO 103 and BIO 103L. **Co-requisite:** BIO 31L. (Offered Spring)
- BIO 321 *Introduction to Parasitology* – 3 hrs. A survey of the parasitic protozoa and helminth found in man and animals. Emphasis is placed on geographical distribution, morphology, habitat, life-cycles and methods of reproduction, transmission, pathogenesis and symptomatology diagnosis, and prevention. **Prerequisite:** BIO 201 and BIO 201L **Co-requisite:** BIO 321L. (Offered Fall)
- BIO 321L *Introduction to Parasitology Lab* – 1 hr. A companion lab for BIO 321 covering the lecture topics. **Prerequisite:** BIO 201 and BIO 201L. (Offered Fall)
- BIO 322 *General Entomology* – 3 hrs. External and internal anatomy, physiology, life cycles, orders and control of insects. Special emphasis will be placed upon species of economic importance in the South **Prerequisite:** BIO 201 and 201L. **Co-requisite:** BIO 322L. (Offered Spring)
- BIO 322L *General Entomology Lab* – 1 hr. A companion lab for BIO 322 covering the lecture topics. **Prerequisite:** BIO 201 and 201L. **Co-requisite:** BIO 322. (Offered Spring)
- BIO 324 *Ecotoxicology I* – 3 hrs. Principles of toxicology; introduction to metallic and organic poisons as environmental pollutants; effects of poisons and environmental pollutants on life process. **Prerequisite:** BIO 205 and 205L; or consent of instructor. (Offered Fall)
- BIO 325 *Ecotoxicology II* – 3 hrs. Principles of toxicological bioassays will be introduced. Methods of bioassays including microbial, vertebrate and chemical. **Prerequisite:** BIO 324. (Offered Spring)
- BIO 330 *Microbiology* – 3 hrs. A study of the properties of microorganisms, their influence on hygiene, disease transmission, higher plants, animals, agriculture and industry. Laboratory techniques in identification, staining and culturing selected microorganisms. **Prerequisites:** BIO 101 and BIO 101L, or BIO 102 and BIO 102L, or BIO 103 and BIO 103L. (Offered Fall, Spring, and Summer)
- BIO 330L *Microbiology Lab* – 1 hr. A companion lab for BIO 330 covering the lecture topics. **Prerequisites:** BIO 101 and BIO 101L, or BIO 102 and BIO 102L, or BIO 103 and BIO 103L. (Offered Fall, Spring, and Summer)
- BIO 340 *Developmental Biology* – 3 hrs. The embryology and morphogenesis of the vertebrates; fertilization of the egg, stages of cleavage, and development of organs and systems. Laboratory studies of the development of the chick, pig and human. **Prerequisite:** BIO 201 and 201L; and BIO 202 and 202L. **Co-requisite:** BIO 340L. (Offered Spring)
- BIO 340L *Developmental Biology Lab* – 1 hr. A companion lab for BIO 340 covering the lecture topics. **Prerequisite:** BIO 201 and 201L; and BIO 202 and 202L. **Co-requisite:** BIO 340. (Offered Spring)
- BIO 344 *Principles of Plant Taxonomy* – 3hrs. Classification and identification of vascular plants. A brief discussion of the process of speciation and evolution. Basic practice in the use of manuals and keys in identifying vascular plants. Three two-hour classes per week. **Prerequisite:** BIO 203 and 203L; and BIO 204 and 204L. **Co-requisites:** BIO 344L. (Offered Spring)
- BIO 344L *Principles of Plant Taxonomy Lab* – 1 hr. A companion lab for BIO 344 covering the lecture topics. **Prerequisite:** BIO 203 and 203L; and BIO 204 and 204L. **Co-requisites:** BIO 344. (Offered Spring)

- BIO 402 *Limnology* – 3 hrs. A study of the physical and chemical factors affecting the biology ponds, lakes, reservoirs, and streams. It includes the use of various instrumentations in biological monitoring. **Prerequisite: BIO 101-102; CHE 101-102 or consent of instructor. Co-requisite: BIO 402L.** (Offered Spring)
- BIO 402L *Limnology Lab* – 1 hr. A companion lab for BIO 402 covering the lecture topics. **Prerequisite: BIO 101L-102L; CHE 101L-102L or consent of instructor. Co-requisite: BIO 402.** (Offered Spring)
- BIO 403 *Ichthyology* – 3 hrs. The basic classification and biology of fish with emphasis on fresh water forms. **Prerequisite: BIO 101-102; CHE 101-102 or consent of instructor.** (Offered Fall)
- BIO 403 *Ichthyology Lab* – 1 hr.. A companion lab for BIO 403 covering the lecture topics. **Prerequisite: BIO 101L-102L; CHE 101L-102L or consent of instructor.** (Offered Fall)
- BIO 411 *Cell Biology* – 3 hrs. Detailed study of organelles of animal and plant cells and development and structure of various kinds of tissues. **Prerequisites: BIO 103 and 103L; CHE 101 and 101L; CHE 102 and 102L. Co-requisite: BIO 411L.** (Offered Spring)
- BIO 411L *Cell Biology Lab* – 1 hr. A companion lab for BIO 411 covering the lecture topics. **Prerequisites: BIO 103 and 103L; CHE 101 and 101L; CHE 102 and 102L. Co-requisite: BIO 411.** (Offered Spring)
- BIO 412 *Molecular Biology* – 3 hrs. A study of the structure, behavior and function of the larger biological molecules including biological oxidations, metabolism of carbohydrates, lipids, amino acids and the genetic aspects of metabolism. **Prerequisite: CHE 301 and 301L. Co-requisite: BIO 412L.** (Offered Fall)
- BIO 412L *Molecular Biology Lab* – 1 hr. A companion lab for BIO 412 covering the lecture topics. **Prerequisite: CHE 301 and 301L. Co-requisite BIO 412.** (Offered Fall)
- BIO 421 *Histotechniques* – 3 hrs. Microscopic study of the various tissues and organs of the animal systems. **Prerequisite: 103 and 103L.** (Offered Fall)
- BIO 422 *Pest Management* – 3 hrs. Discussions of all practices, such as chemical, cultural, physical, genetic or biological, which bring about the most effective control of pests. Methods which bring about least ecological disruptions will be stressed. Economic injury level and economic thresholds of several southern pests will be mentioned. **Prerequisite: BIO 322 and BIO 322L.** (Offered Fall)
- BIO 430 *Medical Microbiology* – 3 hrs. A study of the microorganisms producing disease in man and lower animals; their means of transmission; and their protection against disease. **Prerequisite: None. Co-requisite: BIO 430L.** (Offered Fall)
- BIO 430L *Medical Microbiology Lab* – 1 hr. A companion lab for BIO 430 covering the lecture topics. **Prerequisite: None. Co-requisite: BIO 430.** (Offered Fall)
- BIO 431 *Principles of Immunology* – 3 hrs. An introduction to biological and chemical immunology concerned with the nature of immune response and the structure features of antibodies and antigens which determine their qualitative behavior and quantitative reactions; the range of immunological phenomena and their application to the solution of biological and chemical problems. **Prerequisites: BIO 330 and 330L; and CHE 301 and 301L Co-requisite: BIO 431L.** (Offered Spring)

- BIO 431L *Principles of Immunology Lab* – 1 hr. A companion lab for BIO 431 covering the lecture topics. **Prerequisites: BIO 330 and 330L; and CHE 301 and 301L. Co-requisite: BIO 431.** (Offered Spring)
- BIO 450 *Radiation Biology* – 3 hrs. An introduction to basic concepts of various forms of radiation and their effects and uses on living systems. Basic tracer techniques using isotopes will be represented in the laboratory. **Prerequisites: BIO 101 and 101L; and 102 and 102L or 103 and 103L.** (Offered Spring)
- BIO 451 *Plant Anatomy* – 3 hrs. Study of plant cells, tissues and organ systems of vascular plants, their ontogeny, differentiation and maturation. Students will learn modern techniques of preparing plant materials for microscopic study. **Prerequisite: BIO 203 and 203L; BIO 204 and BIO 204L Co-requisite: BIO 451L.** (Offered Fall)
- BIO 451L *Plant Anatomy Lab* – 1 hr. A companion lab for BIO 451 covering the lecture topics. **Prerequisite: BIO 203 and 203L; and BIO 204 and 204L. Co-requisite: BIO 451.** (Offered Fall)
- BIO 454 *Plant Pathology* – 3 hrs. History, nonparasitic, and parasitic diseases incited by bacteria fungi, plasmodiophorales, nematodes and viruses will be discussed. Disease control through exclusion, eradication, protection and post resistance will be mentioned. **Prerequisite: BIO 344 and 344L. Co-requisite: BIO 454L.** (Offered Fall)
- BIO 454L *Plant Pathology Lab* – 1 hr. A companion lab for BIO 454 covering the lecture topics. **Prerequisite: BIO 344 and 344L. Co-requisite: BIO 454.** (Offered Fall)
- BIO 461 *Plant Physiology* – 3 hrs. The basic physical and chemical organization and metabolism in higher plants with emphasis on various aspects of nutrition and growth. **Prerequisite: BIO 203 and 203L; and BIO 204 and 204L. Co-requisite: 461L.** (Offered Fall)
- BIO 461L *Plant Physiology Lab* – 1 hr. A companion lab for BIO 461 covering the lecture topics. **Prerequisite: BIO 203 and 203L; BIO 204 and 204L. Co-requisite: BIO 461.** (Offered Fall)
- BIO 471 *Biology Seminar* – 1 hr. Discussions of biological literature, careers in biology, graduate schools, and specialty schools. Pertinent discussions on current biological topics. **Prerequisite: BIO 103 and 103L.** (Offered Fall, Spring ,and Summer)
- BIO 481 *Research in Biology* – Credits arranged. Formation and execution of research projects in biology under supervision of an advisor. Open only to junior and senior students. **Prerequisite: BIO 471.** (Offered Fall, Spring ,and Summer)
- BIO 482 *Biomedical Research* – 1-3hrs. A course designed for students who plan to pursue graduate work in the area of biomedical research. The course consists of performing research under the supervision of a qualified biomedical research faculty member. The results of such research will be presented at a formal scientific meeting and published in a recognized journal when possible. **Prerequisites: Open only to junior and seniors with permission of biomedical research faculty.** (Offered as needed)
- BIO 490 *Biology Internships* – 3-4 hrs. A course designed as a preceptorship to allow students to gain experience in actual job situations in areas of career interest. **Prerequisite: Open only to juniors and seniors.** (Offered Spring)

## CHEMISTRY PROGRAM AREA

230 Chambers Bldg.  
256-372-4912

### OBJECTIVES

One of the primary objectives of the Chemistry Program is the development of its majors to their highest potential through an innovative and quality program of instruction and challenging, undergraduate research activity.

### PROGRAM OFFERINGS AND DEGREES

The program offers a professional curriculum for the Bachelor of Science degree in chemistry, as well as a minor in the field of chemistry. In cooperation with the School of Education, the program offers curricula for persons planning to teach chemistry in high school. Curricula for the secondary education major, with a teaching emphasis in chemistry, are found under the Secondary Education sections of this catalog (School of Education).

The program offers two options for persons majoring in chemistry: a **regular major program**, and an **honors major program**.

### GENERAL REQUIREMENTS AND INFORMATION

The curricula outlined on the following pages use as an example a minor in mathematics. This is chosen since the mathematics minor is one of the most popular among majors in chemistry. Other minor options such as physics, computer science, biology, forestry and food sciences may be used. To pursue such minors, the sections in the catalog that describe these minor options must be consulted and the details worked out with the student's chemistry advisor. **The choice of a minor is left to the student but should be closely related to a career goal.** Graduate school aspirants usually elect mathematics or physics as minors, whereas students oriented towards medical and health-related areas will usually select a biology minor. **In any event, the department requires that every student majoring in chemistry have a minor option.**

Requirements for a major include **50 semester hours** of chemistry as indicated in the curriculum. Additional courses in chemistry may be suggested by the advisor. Also required are two semesters of general physics, Calculus I, II and III, one semester of differential equations, and four semesters of foreign language. However, two semesters of a programming language or another foreign language may be substituted for German 201 and 202. Students majoring in chemistry must begin their work in the major in the freshman year. Chemistry majors should consult the chemistry faculty members assigned to them with regard to electives. Faculty advisors are listed in the "Student Advisory Handbook" available in the departmental office.

Requirements for a minor consist of **24 semester hours**. These must include Chemistry 101 and 102, 201 and 202, and 301 and 302 with their accompanying laboratories. With Departmental permission, 4 hrs. may be substituted for CHE 201 and 202 and accompanying laboratories. With this option, 20 CHE semester hours are required for the minor.

Approximately **45** hours of general education courses are required. These are incorporated into the curricula that follow and may be found under the General Education Program Information section of the catalog. The chemistry major curriculum automatically satisfies the mathematics and physical science requirements. To complete the **128** total hours required for a chemistry major, the student may select as many as six hours of free electives (any courses offered or accepted by the University).

General, analytical, organic, physical, instrumental methods and biochemistry have separate lecture and laboratory sections. Majors or minors may not combine lecture or laboratory sequences of unrelated courses to complete requirements for graduation. To receive full credit for a course as a major or minor in chemistry, each lecture course must be taken in conjunction with the corresponding laboratory course.

Students may receive advanced standing in chemistry by submitting a written request to the department chairperson to schedule a departmental examination. Successful completion of this examination may result in waiver

of one or both parts of general chemistry and/or the laboratory. A laboratory fee is required for all chemistry courses requiring laboratory activity. Safety goggles and laboratory aprons are strict requirements for all students in all laboratory courses. Consistent violations of laboratory safety rules could result in suspension from the laboratory.

The major sequences listed herein incorporate (but do not require) a minor in mathematics. For other minor requirements (biology, physics, food science, computer science, etc.), see the sections of the catalog where these are described.

## **COOPERATIVE EDUCATION PROGRAM IN CHEMISTRY**

Cooperative education is a program that combines professional experience with academic study. Cooperative education students alternate terms at school with terms of work in a professional assignment that is related to their field of study. This program enables students to prepare more realistically for their future careers in industry and business.

Students majoring in chemistry have participated in cooperative education assignments at such locations as the 3-M Corporation, Decatur, Alabama; Environmental Protection Agency (EPA), Athens, Georgia; IBM Corporation, East Fishkill, New York; General Electric Company, Mt. Vernon, Indiana; TVA, Muscle Shoals, Alabama; Crane Naval Facility, Crane, Indiana; and the U.S. Army Depot, Anniston, Alabama. The assignments are challenging, provide job experience for the student, and allow the student to earn needed income to help defray university expenses.

There are many choices of work locations. The schedule of alternate work and school terms will vary and will depend on the needs of the student and employing agencies. This schedule is usually worked out to the satisfaction and mutual benefit of both. Any student who is interested in such a program should contact the Chairperson, Department of Natural and Physical Sciences or the Director of Cooperative Education, Alabama A&M University.

## **PROGRAM CURRICULUM**

The chemistry curricula, that follow, are divided into a regular major curriculum and honors curriculum. Students with very good high school backgrounds in chemistry will be encouraged to take courses within the honors curriculum, which is patterned after recommendations of the American Chemical Society. The academic advisor for the program selected by the student must be consulted before enrolling in this curriculum. Most students will take courses within the regular major curriculum.

**DEGREE IN CHEMISTRY**  
Chemistry Major, Mathematics Minor  
128 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 101 Composition I	3	ENG 102 Composition Skills II	3
ORI 101 Survival Skills	1	ECO 200 Basic Economics	3
MTH 125 Calculus I	4	MTH 126 Calculus II	4
CHE 101 General Chemistry I	3	CHE 102 General Chemistry II	3
CHE 101L General Chemistry I Lab	1	CHE 102L General Chemistry I	1
<sup>1</sup> HIS World History I	3	HIS World History II	<u>3</u>
<sup>2</sup> HED Personal & Comm. Health	<u>2</u>		17
	17		

<sup>1</sup>All students, except teacher education majors must take a six-semester credit hours sequence in history or literature.

<sup>2</sup>Two semesters of Physical Education Activities (PED) or one semester of Military Sciences (MSC) may be substituted for Personal & Community Health.

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 Humanities I	3	ENG 204 Humanities II	3
MTH 227 Calculus III	4	MTH 238 Differential Equations	3
GER 101 Elementary German I	3	CHE 202 Analytical Chemistry II	3
<sup>3</sup> PHY 105 General Physics I	4	CHE 202L Analytical Chemistry II Lab	1
<sup>4</sup> CHE 221 Analytical Chemistry	3	GER 102 Elementary German II	3
<sup>4</sup> CHE 221L Analytical Chemistry Lab	<u>1</u>	PHY 106 General Physics II	<u>4</u>
	18		18

<sup>3</sup>With departmental permission, two semesters of general biology (plus related laboratories) may be substituted for the two semesters of physics.

<sup>4</sup>Chemistry majors need to take CHE 221, 221L. Important: Consult with Chemistry Faculty Advisor for further instructions on scheduling classes.

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 304 Advanced Composition	3	ART 101 Art Appreciation	3
<sup>5</sup> GER 201 Intermediate German I	3	GER 202 Intermediate German II	3
CHE 301 Organic Chemistry I	3	CHE 302 Organic Chemistry II	3
CHE 301L Organic Chemistry I Lab	1	CHE 302L Organic Chemistry II Lab	1
MUS 101 Music Appreciation	3	CHE 308 Special Topics	3
CHE 403 Research I	2	CHE 404 Research II	<u>2</u>
<sup>6</sup> CHE Elective	<u>3</u>		15
	18		

<sup>5</sup>Two semesters of a programming language or another foreign language may be substituted for German 201 and 202.

<sup>6</sup>Chemistry majors should consult the chemistry faculty assigned to them with regards to the selection of electives.



## Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PSY 201 General Psychology	3	PHL 201 Intro. to Philosophy	3
CHE 401 Physical Chemistry I	3	CHE 402 Physical Chemistry II	3
CHE 401L Physical Chemistry I Lab.	1	CHE 402L Physical Chemistry II Lab	1
CHE 409 Instrumental Methods	3	CHE Elective	3 or 4
CHE 409L Instrumental Methods Lab	1	CHE Elective	<u>3</u>
<sup>7</sup> Free Electives	<u>3</u>		13-14
	14		

<sup>7</sup>To complete the 128 total hours required for a chemistry major, the student may select as many as six hours of free electives (any courses offered or accepted by the University).

## Chemistry Majors

This sequence of courses is open to all students and may be taken by persons with or without a chemical background from high school. Fifty semester hours are required for the major which include the following courses:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
CHE 101	General Chemistry I	3
CHE 101L	General Chemistry I Lab	1
CHE 102	General Chemistry II	3
CHE 102L	General Chemistry II Lab	1
CHE 201	Analytical Chemistry I	3
CHE 201L	Analytical Chemistry I Lab	1
CHE 202	Analytical Chemistry II	3
CHE 202L	Analytical Chemistry II Lab	1
<sup>a</sup> CHE 221	Analytical Chemistry I	3
<sup>a</sup> CHE 221L	Analytical Chemistry I Lab	1
CHE 301	Organic Chemistry I	3
CHE 301L	Organic Chemistry I Lab	1
CHE 302	Organic Chemistry II	3
CHE 302L	Organic Chemistry II Lab	1
CHE 308	Special Topics	3
CHE 401	Physical Chemistry I	3
CHE 401L	Physical Chemistry I Lab	1
CHE 402	Physical Chemistry II	3
CHE 402L	Physical Chemistry II Lab	1
CHE 403	Research I	2
CHE 404	Research II	2
<sup>b</sup> CHE 409	Instrumental Methods	3
<sup>b</sup> CHE 409L	Instrumental Methods Lab	1
CHE	Elective	3
CHE	Elective	3
CHE	Elective	3
CHE	Elective	<u>3</u>
		47 or 51

<sup>a, b</sup> Chemistry minors can opt for either CHE 201, 201L and CHE 202 and 202L or CHE 221, and 221L and CHE 409 and 409L

## Chemistry Minors

Twenty-four (or twenty) semester hours are required for the minor which include the following courses:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
CHE 101	General Chemistry I	3
CHE 101L	General Chemistry I Lab	1
CHE 102	General Chemistry II	3
CHE 102L	General Chemistry II Lab	1

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
CHE 201	Analytical Chemistry I	3
CHE 201L	Analytical Chemistry I Lab	1
CHE 202	Analytical Chemistry II	3
CHE 202L	Analytical Chemistry II Lab	1
<b>OR</b>		
CHE 221	Analytical Chemistry I	3
CHE 221L	Analytical Chemistry I Lab	1
CHE 301	Organic Chemistry I	3
CHE 301L	Organic Chemistry I Lab	1
CHE 302	Organic Chemistry II	3
CHE 302L	Organic Chemistry II Lab	<u>1</u>
	24 or 20	

### Non-Majors

Included in these course offerings are courses in applied chemistry, intended for non-majors who need more of the applied and industrially oriented aspects of chemistry. They are taught using a largely non-mathematical approach. All advisors should consult the program area of chemistry to determine which course best fits a given set of circumstances.

### Applied Courses In Chemistry

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
CHE 111	Applied Chemistry I	3
CHE 111L	Applied Chemistry I Lab	1
CHE 112	Applied Chemistry II	3
CHE 112L	Applied Chemistry II Lab	1
CHE 311	Applied Organic Chemistry I	4 (6 clock hours)
CHE 312	Applied Organic Chemistry II	4 (6 clock hours)

### Chemistry Major --- Mathematics Minor Electives:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
CHE 306	Chemical Synthesis	3
CHE 405	Advanced Organic Chemistry	3
CHE 406	Advanced Inorganic Chemistry	3
CHE 407	Biochemistry I	3
CHE 407L	Biochemistry I Lab	1
CHE 408	Biochemistry II	3
CHE 408L	Biochemistry II Lab	1
CHE 411	Organic Qualitative Analysis	3

## DEGREE IN CHEMISTRY --- HONORS OPTION

### Chemistry Major, Mathematics Minor

128 Credit Hours

#### Freshman Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 101	Composition I	3	ENG 102	Composition II	3
ORI 101	Survival Skills	1	ECO 200	Basic Economics	3
MTH 125	Calculus I	4	MTH 126	Calculus II	4
CHE 121	Chemical Principles I	3	CHE 122	Chemical Principles II	3
CHE 121L	Chemical Principles I Lab	1	CHE 122L	Chemical Principles II Lab	1
<sup>1</sup> HIS	World History I	3	HIS	World History II	<u>3</u>
<sup>2</sup> HED	Personal & Comm Health	<u>2</u>			17
		17			

<sup>1</sup>All students, except teacher education majors must take a six-semester credit hours sequence in history or literature.

<sup>2</sup>Two semesters of Physical Education Activities (PED) or one semester of Military Sciences (MSC) may be substituted for Personal & Community Health

#### Sophomore Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 203	Humanities I	3	ENG 204	Humanities II	3
MTH 227	Calculus III	4	MTH 238	Differential Equations	4
CHE 221	Analytical Chemistry I	3	GER 102	Elem. German II	3
CHE 221L	Analytical Chemistry I Lab	1	PHY 106	General Physics II	<u>4</u>
GER 101	Elem. German I	3			14
<sup>3</sup> PHY 105	General Physics I	<u>4</u>			
		18			

<sup>3</sup>With departmental permission, two semesters of general biology (plus related laboratories) may be substituted for the two semesters of physics.

#### Junior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 304	Advanced Composition	3	ART 101	Art Appreciation	3
<sup>4</sup> GER 201	Intermed. German I	3	GER 202	Intermed. German II	3
CHE 301	Organic Chemistry I	3	CHE 302	Organic Chemistry II	3
CHE 301L	Organic Chemistry I Lab	1	CHE 302L	Organic Chemistry II Lab	1
MUS 101	Music Appreciation	3	CHE 308	Special Topics	3
CHE 403	Research I	2	CHE 404	Research II	<u>2</u>
<sup>5</sup> CHE	Elective	<u>3</u>			15
		18			

<sup>4</sup>Two semesters of a programming language or another foreign language may be substituted for German 201 and 202.

<sup>5</sup>Chemistry majors should consult the chemistry faculty assigned to them with regards to the selection of electives.

#### Senior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
PSY 201	General Psychology	3	PHL 201	Intro. to Philosophy	3
CHE 401	Physical Chemistry I	3	CHE 402	Physical Chemistry II	3
CHE 401L	Physical Chemistry I Lab.	1	CHE 402L	Physical Chemistry II Lab,	1
CHE 409	Instrumental Methods	3	CHE	Elective	3 or 4

CHE 409 L Instrumental Methods Lab	1	Free Elective	<u>3</u>
<sup>6</sup> CHE Elective	3 or 4		13/14
<sup>7</sup> MTH Elective	<u>3</u>		
	17/18		

<sup>6</sup>To complete the 128 total hours required for a chemistry major, the student may select as many as six hours of free electives (any courses offered or accepted by the University).

<sup>7</sup>To complete the required 18 hours for the mathematics minor, the student may select a 3 hour course from the list of 300 level electives in mathematics. The elective must have Departmental approval.

### Honors Chemistry Major, Mathematics Minor Electives:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours.</u>
CHE 306	Chemical Synthesis	3
CHE 405	Advanced Organic Chemistry	3
CHE 406	Advanced Inorganic Chemistry	3
CHE 407	Biochemistry I	3
CHE 407L	Biochemistry I Lab	1
CHE 408	Biochemistry II	3
CHE 408L	Biochemistry II Lab	1
CHE 411	Organic Qualitative Analysis	3

### COURSE DESCRIPTIONS

- CHE 101      *General Chemistry I* – 3 hrs. A study of the fundamental laws of matter that govern physical and chemical changes. Atomic and molecular theories, atomic structure, periodic functions and classification of the elements are addressed. **Required of all majors in chemistry. (Regular)**  
**Prerequisite: None Co-requisite: CHE 101.** (Offered Fall, Spring and Summer)
- CHE 101L    *General Chemistry I Lab* – 1 hr. (3 clock hrs.) Laboratory to accompany CHE 101. Basic exercises in general chemistry, to include fundamental operations used in making scientific measurements; properties of gases, liquids and solids, chemical elements and compounds are included. **(Regular) Prerequisite: None Co-requisite: CHE 101.** (Offered Fall, Spring and Summer)
- CHE 102      *General Chemistry II* – 3 hrs. A study of radioactivity, solutions and electrolytes, ionization; properties, and reactions and uses of important metallic and non-metallic elements. An introduction to qualitative analysis. **Prerequisites: CHE 101 and CHE 101L Co-requisite: CHE 102L.** (Offered Fall, Spring and Summer)
- CHE 102L    *General Chemistry II Lab* – 1 hr. (3 clock hrs.) Laboratory to accompany CHE 102. An introduction to quantitative and qualitative analyses. Acid-base titrations, reaction kinetics, qualitative analyses of the elements are covered. **Prerequisites: CHE 101 and CHE 101L Co-requisite: CHE 102.** (Offered Fall, Spring and Summer)
- CHE 111      *Applied Chemistry I* – 3 hrs. A course designed to explore historical and modern day applications of chemical principles to the solution of problems and the contribution of chemistry to modern technological achievements. Some field trips to manufacturing facilities and other appropriate chemically-oriented facilities may be scheduled. **Not open to chemistry majors and minors as a substitute for CHE 101 or CHE 121. Prerequisite: None. Co-requisite: CHE 111L.** (Offered Fall, and Summer)

- CHE 111L *Applied Chemistry I lab* – 1 hr. A laboratory course to accompany CHE 111. Basic exercises in general chemistry, to include fundamental operations used in making scientific measurements; properties of gases, liquids, solids, chemical elements and compounds. **Not open to chemistry majors and minors as a substitute for CHE 101 or CHE 121. Prerequisite: None. Co-requisite: CHE 111.** (Offered Fall and Summer)
- CHE 112 *Applied Chemistry II* – 3 hrs. A continuation of CHE 111, with continued emphasis on modern technological achievements. Field trips will be scheduled as appropriate. **Not open to chemistry majors and minors as a substitute for CHE 102 or CHE 122. Prerequisite: None. Co-requisite: CHE 112L.** (Offered Spring and Summer)
- CHE 112L *Applied Chemistry II Lab* – 1 hr. A laboratory course to accompany CHE 112. A continuation of CHE 111L, to include polymer and dye synthesis, recycling of wastes and other selected experiments. **Not open to chemistry majors and minors as a substitute for CHE 102 or CHE 122. Prerequisite: None. Co-requisite: CHE 112.** (Offered Spring and Summer)
- CHE 121 *Chemical Principles I* – 3 hrs. Recommended for all majors in chemistry, physics, mathematics, and some areas of engineering. Other students admitted upon recommendation of their advisors. Topics covered are the same as in CHE 101 but in more depth and with more rigor. Lecture: atomic theory; atomic structure and the periodic table; molecular structure and chemical properties; kinetic molecular theory of gases and gas laws; solutions and colligative properties; and volumetric analysis. **Prerequisite: One year of high school chemistry. Co-requisite: CHE 121L.** (Offered Fall)
- CHE 121L *Chemical Principles I Lab* – 1 hr. Use of balances, stoichiometry, and molecular and equivalent weights. **Prerequisite: One year of high school chemistry. Co-requisite: CHE 121.** (Offered Fall)
- CHE 122 *Chemical Principles II* – 3 hrs. Lecture: Solutions, liquid and solid state chemical and phase equilibria, thermochemistry, and thermodynamics. **Prerequisites: CHE 121 and CHE 121L; students having a "B" or higher grade in CHE 101 and CHE 101L; and CHE 102 and CHE 102L may, with departmental permission, register for this course. Co-requisite: CHE 122L.** (Offered Spring)
- CHE 122L *Chemical Principles II Lab* – 1 hr. Precise volumetric and gravimetric analysis, and qualitative analysis are covered. **Prerequisite: "B" or higher grade in CHE 101L. Co-requisite: CHE 122.** (Offered Spring)
- CHE 201 *Analytical Chemistry I* – 3 hrs. A detailed study of the principles of acid-base, complex ion, and slightly soluble salt equilibria in aqueous solution; volumetric and gravimetric analysis of inorganic substances. **Prerequisites: CHE 101 and CHE 101L; and CHE 102 and CHE 102L. Co-requisite: CHE 201L.** (Offered Fall and Summer)
- CHE 201L *Analytical Chemistry I Lab* – 1 hr. Laboratory to accompany CHE 201. A study of the classical wet and dry methods of quantitative analysis. **Prerequisites: CHE 101 and CHE 101L; CHE 102 and CHE 102L; CHE 121 and CHE 121L; and CHE 122 and CHE 122L. Co-requisite: CHE 201.** (Offered Fall and Summer)
- CHE 202 *Analytical Chemistry I* – 3 hrs. A detailed study of the principles of electrometric analyses, and an introduction to special instrumental methods in analytical chemistry. **Prerequisites: CHE 101 and CHE 101L; CHE 102 and CHE 102L; CHE 201 and CHE 201L. Co-requisite: CHE 202L.** (Offered Spring and Summer)
- CHE 202L *Analytical Chemistry II Lab* – 1 hr. Laboratory to accompany CHE 202. A study of electrometric, spectrometric and chromatographic methods of analysis. **Prerequisites: CHE 201 and CHE 201L. Co-requisite: CHE 202.** (Offered Spring and Summer)

- CHE 221 *Analytical Chemistry* – 4 hrs. Three lectures, one three-hour laboratory per week. A detailed study of the principles of acid-base, complex ions, slightly soluble salt equilibria, electrometric, and spectrophotometric methods and an introduction to special instrumental methods in analytical chemistry. **Prerequisites:** CHE 101 and CHE 101L; and CHE 102 and CHE 102L; or CHE 121 and CHE 121L; and CHE 122, 122L. **Co-requisite:** CHE 221L. (Offered Fall)
- CHE 221 L *Analytical Chemistry Lab* – 1 hr. Laboratory to accompany CHE 221. A study of classical wet and dry methods as well as electrometric, spectrometric, and chromatographic methods. **Prerequisites:** CHE 101 and CHE 101L; and CHE 102 and CHE 102L; or CHE 121 and CHE 121L; and CHE 122, CHE 122L. **Co-requisite:** CHE 221. (Offered Fall)
- CHE 301 *Organic Chemistry I* – 3 hrs. A course designed to give the student a thorough working knowledge of the fundamentals of organic chemistry. The nomenclature, structure, properties and reactions of organic compounds are studied from an integrated approach, considering the interrelationships of structure, properties, and reactions. The topics will include saturated and unsaturated aliphatic compounds, alicyclic compounds, aromatic compounds, alcohols, and alkyl and aryl halides. **Prerequisites:** CHE 101 and CHE 101L; and CHE 102 and CHE 102L; or CHE 121 and CHE 121L; and CHE 122 and 122L. **Co-requisite:** CHE 301L. (Offered Fall Spring and Summer)
- CHE 301L *Organic Chemistry I Lab* – 1 hr. Laboratory to accompany CHE 301. The laboratory work includes basic techniques, and experiments in synthesis and kinetics. Modern instrumental methods will be used in some experiments. **Prerequisites:** CHE 102 and CHE 102L; or CHE 122 and CHE 122L. **Co-requisite:** CHE 301L. (Offered Fall, Spring, and Summer)
- CHE 302 *Organic Chemistry II* – 3 hrs. A continuation of the first semester. Lecture topics will include ethers, carboxylic acids, sulfonic acids, amines, aldehydes and ketones, diazo compounds, glycols, carbohydrates, and amino acids. **Prerequisites:** CHE 301 and CHE 301L. **Co-requisite:** CHE 302L. (Offered Fall, Spring, and Summer)
- CHE 302L *Organic Chemistry II Lab* – 1 hr. Laboratory to accompany CHE 302. The laboratory work will emphasize qualitative organic analysis by chemical reactions. **Prerequisite:** CHE 301 and CHE 301L. **Co-requisite:** CHE 302L. (Offered Fall, Spring, and Summer)
- CHE 306 *Chemical Synthesis* – 3 hrs. Designed to give the student experience beyond the introductory level in laboratory preparative techniques, in both organic and inorganic chemistry (approximately equal emphasis on each). Procedures will be taken from the original literature and will emphasize a variety of the more important types of preparative techniques. **Prerequisite:** CHE 302, CHE 302L; CHE 202, CHE 202L; or CHE 222; CHE 222 L. (Offered as Needed)
- CHE 308 *Special Topics* – 3 hrs. A course designed to help the chemistry major begin to fully grasp the fundamental concepts which undergird the understanding and practice of chemistry. Topics will vary according to student need but will usually embrace such subjects as atomic theory (from the Bohr atom to atomic and molecular orbitals), reaction mechanisms, equilibria, kinetics, electrochemistry, thermodynamics, nuclear and radiochemistry, molecular spectroscopy and chromatography. **Prerequisites:** CHE 202 and CHE 202L; or CHE 221, CHE 221 L; CHE 302 and CHE 302L. (Offered Spring)
- CHE 311 *Applied Organic Chemistry I* – 4 hrs. A course designed to show the relationship of organic chemistry to everyday life. Topics for discussion will embrace the effect of selected discoveries and innovations in organic chemistry upon the development of present-day technology. Laboratory exercises will include the production of nylon, aspirin, certain dyes, and other technologically important substances. **Prerequisites:** CHE 102 and CHE 102L; or CHE 112 and CHE 112L; not open to chemistry majors and minors as a substitute for 301. (Offered as needed)

- CHE 312 *Applied Organic Chemistry II* – 4 hrs. (Three, 1-hour lectures and one, 3-hour lab). A continuation of CHE 311 with further emphasis on technological aspects of organic chemistry. Laboratory exercises will involve additional experiments as described for CHE 311. **Prerequisite: CHE 311; not open to chemistry majors and minors as a substitute for CHE 302.** (Offered as needed)
- CHE 401 *Physical Chemistry I* – 3 hrs. A study of the gas laws; classical thermodynamics, thermochemistry, single and multicomponent phase equilibria, properties of solutions, and chemical equilibria. **Prerequisites: CHE 202 and CHE 202L or CHE 221 and CHE 221 L; CHE 302 and CHE 302L.** (Offered Fall)
- CHE 401L *Physical Chemistry I Lab* – 1 hr. Laboratory to accompany CHE 401. To the extent possible, the laboratory experiments will be selected to coincide with the lecture topics. Experiments relating to gas laws, thermodynamics, thermochemistry, solids, solutions and chemical equilibria will be performed. **Prerequisites: CHE 201 and CHE 201L; CHE 202 and CHE 202L; CHE 221, CHE 221 L; CHE 301 and CHE 301L; and CHE 302 and CHE 302L. Co-requisite: CHE 401.** (Offered Fall)
- CHE 402 *Physical Chemistry II* – 3 hrs. A study of chemical kinetics, electrolytic conductance phenomena, electromotive force, quantum theory, molecular structure and spectroscopy, macromolecules, surface chemistry, crystals, and nuclear chemistry. **Prerequisite: CHE 401.** (Offered Spring)
- CHE 402L *Physical Chemistry II Lab* – 1 hr. Laboratory to accompany CHE 402. To the extent possible, the laboratory experiments will be selected to coincide with the lecture topics. Experiments relating to gas laws, thermodynamics, thermochemistry, solids, solutions and chemical equilibria will be performed. **Prerequisites: CHE 201 and CHE 201L; CHE 202 and CHE 202L; CHE 221, CHE 221 L; CHE 301 and CHE 301L; and CHE 302 and CHE 302L and CHE 401. Co-requisite: CHE 402.** (Offered Spring)
- CHE 403 *Research I* – 2 hrs. Laboratory and library work that involves the solution of a suitable problem in an area of the student's interest. To culminate in an investigative paper required of all majors. **Prerequisite: By consent of instructor.** (Offered Fall, Spring and Summer).
- CHE 404 *Research II* – 2 hrs. Laboratory and library work that involves the solution of a suitable problem in area of the student's interest. To culminate in an investigative paper required of all majors. **Prerequisite: By consent of instructor.** (Offered Fall, Spring and Summer)
- CHE 405 *Advanced Organic Chemistry I* – 3 hrs. This course is designed to emphasize the mechanisms of the more important organic reactions and the various molecular rearrangements involved. **Prerequisites: CHE 301 and CHE 301L; and CHE 302 and CHE 302L.** (Offered as needed)
- CHE 406 *Advanced Inorganic Chemistry II* – 3 hrs. A detailed study of the quantum theory, atomic and molecular structure, the periodic table, theories of chemical bonding, and the chemistry of inorganic complex compounds. Emphasis will be placed on the qualitative aspects of ligand field theory. **Prerequisite: CHE 405.** (Offered Fall)
- CHE 407 *Biochemistry I* – 3 hrs. This course is designed to provide a study of the molecular basis of life: chemical compositions of living cells, the relation between the structure and the function of proteins in biological systems, the isolation and purification of proteins, enzymatic kinetics and reaction mechanisms, coenzymes, and carbohydrate catabolism for generation of energy. **Prerequisites: CHE 201 and CHE 201L; CHE 301 and CHE 301L; CHE 302 and CHE 302.** (Offered Fall)
- CHE 407L *Biochemistry I Lab* – 1 hr. Laboratory to accompany CHE 407. The course will include the isolation and purification of proteins, protein quantitation, molecular weight determination of

protein by gel electrophoresis, peptide mapping analysis, affinity chromatography, and enzymatic kinetics. **Prerequisites:** CHE 201 and CHE 201L; CHE 301 and CHE 301L; CHE 302 and CHE 302L. **Co-requisite:** CHE 407. (Offered Fall)

- CHE 408 *Biochemistry II* – 3 hrs. (Three, 1-hour) This course is designed to provide a study of metabolic reactions and regulations of metabolic pathways for polysaccharides and glycoproteins, fatty acids, lipids, cholesterol, amino acids, and nucleotides; and fundamental principles of storage and utilization of genetic information, including structures of DNA and RNA, DNA replication, transcription, and protein biosynthesis. **PREREQUISITES:** CHE 201 and CHE 201L; CHE 301 and CHE 301L; CHE 302 and CHE 302L; CHE 407. (Offered Spring)
- CHE 408L *Biochemistry II Lab* – 1 hr. Laboratory to accompany CHE 408. In this course students are taught the modern biochemical topics such as protein evolution and Western blot, effects of temperature on cell respiration, protein separation by gel-filtration chromatography, determination of the length of DNA molecules by gel electrophoresis, restriction nuclease mapping of DNA, and plasmid DNA structure. **Prerequisites:** CHE 201 and CHE 201L; CHE 301 and CHE 301L; CHE 302 and CHE 302L; CHE 407 and CHE 407L. **Co-requisite:** CHE 408. (Offered Spring)
- CHE 409 *Instrumental Methods and Materials Evaluation* – 3 hrs. A lecture course designed to expand the student's background in modern analytical techniques such as spectrophotometry, chromatography, electrophoresis, mass spectrometry, FTIR, Proton NMR and Carbon -13 NMR spectroscopy. **Prerequisites:** CHE 201 and CHE 201L or 221 and 221 L; and CHE 301 and CHE 301L. (Offered Fall)
- CHE 409 L *Instrumental Methods and Materials Evaluation Laboratory* – 1 hr. Laboratory to accompany CHE 409. In this course students are taught the usage and operation of modern analytical instruments, analysis of data collected and interpretation of results using a variety of databases available. Emphasis is placed on HPLC, GC. GC/MS, FTIR, TGA, DTA, carbon and proton NMR.
- CHE 411 *Qualitative Organic Analysis* – 3 hrs. A systematic study involving classification reactions and physical properties of organic compounds and their identification. Reactions of various functional groups, along with solubility measurements, are used to elucidate structural features of compounds. Instrumental methods such as infrared, nuclear magnetic resonance spectroscopy, gas chromatography, and mass spectrometry are used as supplementary identification techniques. **Prerequisites:** CHE 221 and CHE 221 L; and CHE 302 and CHE 302L. (Offered as needed)





**DEPARTMENT OF PHYSICS**

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**INTRODUCTION**

The Physics Program was organized as a department at Alabama A&M University in 1979. The M.S. program was initiated in 1981 and the Ph.D. program in 1986. The primary objectives of the physics department are to provide sound training in physics leading to a B.S. degree in physics and to provide service courses which are required by other disciplines. In addition to the following undergraduate programs, the department also offers the M.S. and Ph.D. degrees in applied physics with specializations in optics/lasers and materials science, the details of which are described in the graduate catalog.

**MISSION/OBJECTIVES**

- To give students a good understanding of physics as the foundation of modern technologies.
- To train students to enter graduate programs and/or to enter the research oriented world.
- To provide students with the skills of today's high-tech-related job market.
- To provide service courses for other disciplines.

**PROGRAM OFFERINGS**

There are seven options in the physics/applied physics undergraduate program as listed below. The graduation requirements are: (1) 45 credit hours of general education as required by the university, (2) 20 credit hours of support courses which are: CMP 102, 109, 305; and MTH 126, 227, 238; (3) 45 Credit hours of physics: PHY 105, 106, 201, 252L, 303, 321, 322, 331, 341, 401, 421, 451 and elect two courses from PHY 332, 431, 453, 460 and (4) specified number of credit hours from option areas as listed below:

1. **B.S. IN PHYSICS.** There are seven (7) options.
  - a. Mechanical Option: ME 101, 101L, 231, 301, 360, 360L, 312 and 312L (16 hrs.)
  - b. Electrical Option: EE 201, 201L, 202, 203, 203L, 301, and 3 credit hours of EE free electives (17 hrs.)
  - c. Civil Option:
    - (1) Structural Concentration: EGC 101, 207, CE 306, 308; elect one course from CE 401, 402, or 408; and 3 credit hours of free CE elective. (18 hrs.)
    - (2) Environmental Concentration: EGC 101, CE 304, EGC 305, 404, and 3 credit hours of free CE elective. (18 hrs.)
  - d. Computer Science Option: CMP 309, 311, 329, 485, 490, and 3 credit hours of free CMP elective. (18 hrs.)
  - e. Space Science Option: PHY 440, 441, 442, 443, 444. (18 Hrs.)
  - f. Chemistry Option: CHE 201, 201L, 202, 202L, 301, 301L 302 and 302L, 401 (19 hrs.)
  - g. Mathematics Option: MTH 237, 453, 6 elective credit hours of MTH above 300 level, and 6 credit hours of MTH free electives (18 hrs.)

## 2. **MINOR IN PHYSICS**

Eighteen credit hours in physics courses are required for a physics minor. PHY 105, PHY 106, PHY 201, PHY 303, and PHY 321 are recommended for a minor in physics.

### **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

Students majoring in physics may apply for financial assistance to defray the cost of attendance at Alabama A&M University. There are many work-study and other undergraduate research opportunities available with various professors in the department who are working on research projects funded by NASA, NSF, DOD and other federal agencies.

### **COOPERATIVE EDUCATION/INTERNSHIPS**

The cooperative Education Program (co-op) gives students the opportunity to earn income while gaining experience in jobs related to physics. Students normally work full time during alternate semesters. Generally this arrangement is recommended during their junior and senior years.

### **STUDENT/PROFESSIONAL ORGANIZATIONS**

Physics students are members of a national organization known as the Society of Physics Students (SPS) and attend annually the National Conference of Black Physics Students (NCBPS). We also have a campus chapter of the national Optical Society of America (OSA) and Materials Research Society (MRS).

### **SUGGESTED CURRICULUM**

All students majoring in physics will follow the same curriculum during the freshman and sophomore years. Thereafter they should follow the respective curriculum for the particular option chosen.

**PHYSICS MAJOR (ALL OPTIONS)**

(Freshman and Sophomore)

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	<sup>2</sup> ENG 102	Composition II	3
<sup>1</sup> ENG 101	Composition	3	MTH 126	Calculus II	4
MTH 125	Calculus I	4	CHE 102	General Chemistry II	3
CHE 101	General Chemistry I	3	CHE 102L	Gen. Chem Lab II	1
CHE 101L	General Chemistry Lab I	1	MUS 101	Music Appreciation	3
PHY 105	Physics I	4	PHY 106	Physics II	<u>4</u>
CMP 102	Intro to Programming I	<u>3</u>			18
		19			

<sup>1</sup>ENG 103 may be taken by international students.<sup>2</sup>ENG 104 may be taken by international students.**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
<sup>3</sup> HED 101	Personal & Comm. Health	2	ENG 204	World Literature II	3
PHY 201	Intro to Modern Physics	3	MTH 238	Appl Diff Equations	3
CMP 109	Intro to Programming II	3	PHY 303	Meth. of Math Physics	4
ENG 203	World Literature I	3	CMP 305	Numerical Analysis	3
MTH 227	Calculus III	<u>4</u>	PHY 252L	Modern Physics Lab	<u>3</u>
		15			16

<sup>3</sup>PED 103 or MSC 101 may be taken.**MECHANICAL OPTION**

127 Credit Hours

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ART 101	Art Appreciation	3	HIS 102	World History II	3
HIS 101	World History I	3	PSY 201	Intro to Psychology or	3
ME 101	Intro to Mech. Engr.	1	SOC 201	Intro to Sociology	(3)
ME 101L	Intro to Mech Engr Lab	1	ME 301	Anal & Instru & Phys. Sys.	3
ME 231	Strength of Mat.	3	ME 301L	Anal & Instru & Phys Sys	1
PHY 331	Elec. & Magnetism I	3	PHY 322	Mechanics II	3
PHY 321	Mechanics I	<u>3</u>	PHY	Elective	<u>3</u>
		17			16

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
PHY 421	Intro to Quantum Mech.	3	PHY 341	Heat & Thermodynamics	3
PHY 401	Optics	3	PHY 451	Intro to Solid State Phys	3
ME 360	Fluid Mechanics	3	ECO 200	Basic Economics	3
ME 360L	Fluid Mechanics L	1	ME 312L	Heat & Mass Trans Lab	1
PHY	Elective	<u>3</u>	ME 312	Heat & Mass Transfer	<u>3</u>
		13			13

## ELECTRICAL OPTION

127 Credit Hours

### Junior Year

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
HIS	101	World History I	3	HIS	102	World History II	3
ART	101	Art Appreciation	3	PSY	201	Intro to Psychology <b>or</b>	
EE	201	Linear Circuit Analysis I	3	SOC	201	Intro to Sociology	(3)
EE	201L	Linear Cir Anal I Lab	1	EE	203	Analog Cir. Des & Anal.	3
PHY	321	Mechanics I	3	EE	203L	Analog Cir. Des & Anal.	1
PHY		Elective	<u>3</u>	PHY	331	Elec. & Magnetism I	3
			16	PHY	322	Mechanics II	<u>3</u>
							16

### Senior Year

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
PHY	421	Intro to Quantum Mech	3	PHY	341	Heat & Thermodynamics	3
PHY	401	Optics	3	PHY	451	Intro to Solid State Phys	3
ECO	200	Basic Economics	3	EE	301	Signal and System	3
EE	202	Linear Circuit Analysis I	3	EE		Free Elective	<u>3</u>
PHY		Elective	<u>3</u>				12
			15				

## CIVIL OPTION

128 Credit Hours

### I. Structural Concentration

### Junior Year

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
EGC	101	Enginr Drawg & Graph	3	HIS	102	World History II	3
HIS	101	World History I	3	PSY	201	Intro to Psychology <b>or</b>	
ART	101	Art Appreciation	3	SOC	201	Intro to Sociology	(3)
PHY	321	Mechanics I	3	PHY	322	Mechanics II	3
PHY		Elective	<u>3</u>	PHY	331	Elec. & Magnetism I	3
			15	EGC	207	Strength of Materials	3
				CE	308	Soil Mechanics	<u>3</u>
							18

### Senior Year

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
PHY	421	Intro to Quantum Mech	3	PHY	341	Heat & Thermodynamics	3
PHY	401	Optics	3	PHY	451	Intro to Solid State Phys	3
ECO	200	Basic Economics	3	CE		Elective	3
CE	306	Structural Analysis	3	CE		Elective	<u>3</u>
PHY		Elective	<u>3</u>				12
			15				

**II. Environmental Concentration**

				<b>Junior Year</b>		
<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>	
HIS 101	World History I	3	HIS 102	World History II	3	
ART 101	Art Appreciation	3	PSY 201	Intro to Psychology <b>or</b>	3	
PHY 321	Mechanics I	3	SOC 201	Intro to Sociology	(3)	
EGC 101	Engr Drawing & Graphics	3	PHY 322	Mechanics II	3	
EGC 305	Fluid Mechanics	<u>3</u>	PHY 331	Elec. & Magnetism I	3	
		15	CE 304	Environmental Enginr	<u>3</u>	
					15	

				<b>Senior Year</b>		
<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>	
PHY 421	Intro to Quantum Mech.	3	PHY 341	Heat & Thermodynamics	3	
PHY 401	Optics	3	PHY 451	Intro to Solid State Phys	3	
CE 404	Hydrau Enginr & Design	3	CE 305	Hydrogeology	3	
ECO 200	Basic Economics	<u>3</u>	PHY	Elective	3	
		12	CE	Free Elective	<u>3</u>	
					15	

**COMPUTER SCIENCE OPTION**

128 Credit Hours

				<b>Junior Year</b>		
<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>	
HIS 101	World History I	3	HIS 102	World History II	3	
ART 101	Art Appreciation	3	PSY 201	Intro to Psychology <b>or</b>	3	
PHY 321	Mechanics I	3	SOC 201	Intro to Sociology	(3)	
CMP 329	Object Oriented Design	3	PHY 322	Mechanics II	3	
CMP 309	Computer Graphics	3	PHY 331	Elec. & Magnetism I	3	
PHY	Elective	<u>3</u>	CMP 311	Intro to Simulation	<u>3</u>	
		18			15	

				<b>Senior Year</b>		
<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>	
PHY 421	Intro to Quantum Mech	3	PHY 341	Heat & Thermodynamics	3	
PHY 401	Optics	3	PHY 451	Intro to Solid State Phys	3	
ECO 200	Basic Economics	3	CMP 485	Intro to Data Comm.& Net	3	
CMP 490	High Perform Computing	3	CMP	Elective	<u>3</u>	
PHY	Elective	<u>3</u>			12	
		15				

## CHEMISTRY MINOR

126 Credit Hours

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
HIS 101 World History I	3	HIS 102 World History II	3
ART 101 Art Appreciation	3	PSY 201 Intro to Psychology <b>or</b>	3
PHY 321 Mechanics I	3	SOC 201 Intro to Sociology	(3)
PHY Elective	3	PHY 322 Mechanics II	3
CHE 201 Analytical Chemistry I	3	CHE 202 Analytical Chemistry II	3
CHE 201L Analytical Chem I Lab	<u>1</u>	CHE 202L Analytical Chem II Lab	1
	16	PHY 331 Elec. & Magnetism I	<u>3</u>
			16

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PHY 421 Intro to Quantum Mech	3	PHY 341 Heat & Thermodynamics	3
PHY 401 Optics	3	PHY 451 Intro to Solid State Phys	3
CHE 301 Organic Chemistry I	3	CHE 302 Organic Chemistry II	3
CHE 301L Organic Chemistry I Lab	1	CHE 302L Organic Chemistry II Lab	1
PHY Elective	<u>3</u>	ECO 200 Basic Economics	<u>3</u>
	13		13

## MATHEMATICS MINOR

128 Credit Hours

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
HIS 101 World History I	3	HIS 102 World History II	3
ART 101 Art Appreciation	3	PSY 201 Intro to Psychology <b>or</b>	3
PHY 321 Mechanics I	3	SOC 201 Intro to Sociology	(3)
PHY Elective	3	PHY 322 Mechanics II	3
MTH Elective	<u>3</u>	MTH 237 Intro to Linear Algebra	3
	15	PHY 331 Elec & Magnetism I	<u>3</u>
			15

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PHY 421 Intro to Quantum Mech.	3	PHY 341 Heat & Thermodynamics	3
PHY 401 Optics	3	PHY 451 Intro to Solid State Phys	3
MTH 453 Probability and Statistics	3	MTH Elective	3
ECO 200 Basic Economics	3	MTH Elective	3
PHY Elective	<u>3</u>	MTH Elective	<u>3</u>
	15		15

**SPACE SCIENCE MINOR**

128 Credit Hours

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs.</i>
HIS 101	World History I	3	HIS 102	World History II	3
ECO 200	Basic Economics	3	PSY 201	Intro to Psychology <b>or</b>	(3)
PHY 321	Mechanics I	3		Intro to Sociology	(3)
PHY 421	Intro to Quantum Mech	3	PHY 341	Heat & Thermodynamics	3
ART 101	Art Appreciation	3	PHY 331	Electricity & Magnetism I	3
*PHY	Elective	<u>3</u>	PHY 322	Mechanics I	<u>3</u>
		18			15

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs.</i>
PHY 441	Intro to Atmospheric Phys.	3	PHY 443	Intro to Solar System	4
PHY 442	Intro to Aeronomy	3	PHY 444	Intro to Orbital Mech	4
*PHY	Elective	3	PHY 440	Undergrad Res Opp Proj	4
CMP	Elective	<u>3</u>	*PHY	Elective	<u>3</u>
		12			15

\*Physics Electives can also be taken from the following courses at the University of Alabama in Huntsville (UAH).

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours.</u>
PHY/AST 371	Int. to Astrophysics	3
PHY/AST 471	Stellar Atmospheres and Interiors	3
PHY 531	Int. to Plasma Physics	3

**COURSE DESCRIPTIONS**

While every effort is made to offer courses as indicated in the course descriptions, it sometimes becomes necessary to cancel courses. In the event of course cancellation, students should consult their academic advisors for selection of alternate courses.

PHY 101	<i>Physical Science I</i> – 3 hrs. This course covers force, motion, gravitation, energy, energy in action, electricity and magnetism, waves, the nucleus, and the atom. <b>Prerequisites:</b> <b>MTH 101</b> . (Offered Fall, Spring, and Summer).
PHY 101L	<i>Physical Sciences Lab I</i> – 1 hr. This is the laboratory course to accompany PHY 101, Survey of Physical Sciences I. This hands-on experience illustrates basic principles of measurements, kinematics & dynamics of motion, fluids, heat & thermodynamics, electricity and magnetism, optics, and matter. (Offered Fall, Spring and Summer)
PHY 102	<i>Physical Science II</i> – 3 hr. This course encompasses selected topics in the field of chemistry, geology, meteorology, and astronomy. Topics to be covered include: the periodic law, crystals, ions, solutions, chemical reactions, the atmosphere and hydrosphere, earth materials, the changing crust, earth and the sky, the solar system, the stars, and the structure and evolution of the universe. <b>Prerequisites:</b> <b>PHY 101, MTH 101</b> . (Offered Fall, Spring, and Summer)
PHY 102L	<i>Physical Sciences Lab II</i> – 1 hr. This is the laboratory course to accompany PHY 102 Survey of Physical Sciences. This hands-on experience illustrates basic principles of Chemistry, Geology, Astronomy, and Weather. (Offered Fall, Spring and Summer)



- PHY 103      *General Physics I* – 4 hrs. This is an Algebra based Physics course designed for majors in agriculture, family and consumer sciences, food science, and environmental science. Its emphasis is on particle motion with uniform acceleration, Newtons’s Laws of motion, force, work, power and energy, mechanical energy, collision, laws of conservation of energy, circular motion, angular velocity, angular momentum, centripetal force, Hook’s law, simple harmonic motion, fluid statics, pressure, law of flotation, heat, concept of temperature and heat transfer, specific heat, and gas laws. There will be at least ten experiments to be performed in the laboratory. **Prerequisites: MTH 112 and MTH 113.** (Offered Fall and Summer)
- PHY 104      *General Physics II* – 4 hrs. This is the second part of an algebra based physics course and covers static electricity, Coulomb’s law, potential, electrical field, Gauss’s law, current electricity, Ohm’s law, simple circuits, Kirchoff’s law, heating effect, Joule’s law, magnetic effect, Ampere’s law, induction, magnetic properties of materials, electrolysis, geometrical optics, reflection at plane and spherical boundaries, thin lenses, lens maker’s equation, optical instruments, speed of light, and light as a wave. There will be at least ten experiments to be performed in the laboratory. **Prerequisite: PHY 103.** (Offered in the Spring)
- PHY 105      *Physics I* – 4 hrs. This is the first part of a calculus-based physics course designed for sciences, engineering and technical majors. The goal is to acquaint students with the language, notation, and nature of physics. The approach to the mathematical solution of physics problems is strongly emphasized throughout the course. Topics to be covered will include mechanics, fluid heat, and thermodynamics. At least ten experiments will be performed by the student. **Prerequisite: MTH 125.** (Offered Fall, Spring, and Summer)
- PHY 106      *Physics II* – 4 hrs. This is the second part of a calculus-based physics course designed for sciences, engineering and technical majors. The goal is the same as for Physics I. Topics to be covered will include electricity, magnetism, and light. At least ten experiments will be performed by the student. **Prerequisites: MTH 126 and PHY 105.** (Offered Fall, Spring, and Summer)
- PHY 201      *Introduction to Modern Physics* – 3 hrs. This is a study of space and time; conservation laws; classical relativity; Galilean and Lorentz Transformation; Michelson-Morley Experiment; relativistic mechanics; black-body radiation; photoelectric effect; x-rays; Bragg’s Law and Compton effect ; atomic structure; atomic spectra; Bohr model; hydrogen atom and singly ionized helium atom; Stark effect; and Zeeman effect. **Prerequisites: PHY 105 and PHY 106.** (Offered Fall)
- PHY 252L      *Modern Physics Lab* – 3 hrs. This is an experimental course consisting of at least ten experiments selected from advanced topics in physics. The purpose of this course is to provide general insight into advanced experimental techniques involving refined electronic equipment and other sensitive apparatus. The experiments chosen each time the course is offered will be announced in advance. **Prerequisite: PHY 201.** (Offered Spring)
- PHY 303      (*MTH 303*) *Methods of Mathematical Physics* – 4 hrs. Topics covered will include vector calculus, partial differential equations, boundary value problems, Fourier Series, Laplace transforms, and Green’s function methods. The course is so oriented as to fulfill four-hour minor requirements in math or physics. **Prerequisite: PHY 105, 106, MTH 125 and 126.** (Offered Spring)
- PHY 321      *Mechanics I* – 3 hrs. The first part of the course will cover Galilean invariance, absolute and relative velocity, simple problems in non-realistic dynamics, energy conservation, momentum conservation, rigid body dynamics, rotational and transitional motion, Coriolis force, harmonic oscillator, force oscillations, combinations of harmonic oscillators, central force problems, and gravitation. **Prerequisites: PHY 105, PHY 106.** (Offered Fall)

- PHY 322 *Mechanics II* – 3 hrs. This course is a continuation of PHY 321. It will generally start with general motion of a rigid body and will include matrices for solving rigid body dynamics, inertia tensor, theory of vibrations, Lagrange's equations, generalized co-ordinates and ignorable co-ordinates, applications of Lagrange's equations to simple systems, Hamilton's functions, Hamilton's variational principle, Hamiltonian and Hamilton's equations, Special Theory of relativity, Einstein's postulates, Lorentz transformation, length contraction and time dilation, and elementary relativistic kinematics. **Prerequisite: PHY 321.** (Offered Spring)
- PHY 331 *Electricity and Magnetism I* – 3 hrs. This is an intermediate level course and will cover electric force (Coulomb's Law), electric field (Gauss' Law), electrical potential (Poisson's and Laplace's equation and method of images), electric field in dielectrics, capacitors, electrostatic energy, and electric current (Ohm's Law and Kirchoff Law). Prerequisites: **PHY 105, PHY 106.** (Offered Spring)
- PHY 332 *Electricity and Magnetism II* – 3 hrs. This is the study of magnetic field (Biot's and Savart's Law, Ampere's law), Faraday's Law of Induction, Inductance, and magnetic Energy, A. C. circuit. Maxwell's equations, electromagnetic waves, and electrodynamics. **Prerequisites: PHY 331.** (Offered Fall)
- PHY 341 *Heat and Thermodynamics* – 3 hrs. This is an intermediate course which deals with reversible heat processes accompanying physical and chemical reactions involving gases, liquids, and solids. Topics include calorimetry, thermometry, heat transfer and expansion, specific heat, laws of thermodynamics and applications, and introduction to kinetic theory. **Prerequisites: PHY 105, PHY 106.** (Offered Spring)
- PHY 401 *Optics* – 3 hrs. This is a brief review of geometrical optics; physical optics; introduction to optics and spectroscopy. **Prerequisites: PHY 105, PHY 106.** (Offered Fall)
- PHY 421 *Introduction to Quantum Mechanics* – 3 hrs. This course covers Thomson's electron diffraction experiment; postulates of quantum mechanics; operator concept; expectation values; particle in a box; uncertainty principle; Schrodinger equation and eigenvalue problems: harmonic oscillator; square well potential; and elements of matrix mechanics. **Prerequisites: PHY 201 and PHY 303.** (Offered Fall)
- PHY 431 *Statistical Physics* – 3 hrs. This is a fundamental course to describe macroscopic systems from microscopic point of view. Topics to be covered include characteristic features of macroscopic systems, concepts of probability, postulates of the statistical theory, fundamental concepts of entropy, of absolute temperature, and of the canonical distribution. Relations between microscopic theory and macroscopic measurements, Applications of statistical physics: equipartition theorem of solids, Gibbs free energy, phase equilibrium, and kinetic theory of transport process. Applications to diatomic molecules, magnetization. Fermi-Dirac and Bose-Einstein statistics. **Prerequisites: PHY 105, PHY 106, PHY 341.** (Offered as needed)
- PHY 440 *Undergraduate Research Opportunity Program (UROP)* – 4 hrs. Invites undergraduates to participate with AAMU Physics faculty and staff members in a wide variety of research activities and many interdisciplinary laboratories and research centers. UROP will cultivate and support research partnerships between undergraduates and AAMU faculty members. **Prerequisites: PHY 105 & PHY 106.**
- PHY 441 *Introduction to the Lower Atmosphere* – 3 hrs. The neutral atmosphere and its layers. Atmospheric composition. Altitudinal variation of density. The hydrostatic equation and the perfect gas law. The scale height and geopotential height. Kinetic theory and velocity distribution. Atmospheric water. Atmospheric electricity and lightning discharge. Rotation of the Earth and Coriolis force. Atmospheric motion and general circulation of the atmosphere. Weather and climate. Solar radiation and the effects of the solar cycle on atmospheric parameters.

Atmospheric trace gases and anthropogenic effects. Atmospheric models. **Prerequisite: PHY 105.**

- PHY 442 *Introduction to Aeronomy* – 3 hrs. The neutral atmosphere and its layers. The hydrostatic equation and the perfect gas law. Diffusive separation. Thermosphere and exosphere. Atmospheric drag and orbital decay of satellites. Atmospheric models. Formation of the ionosphere by solar extreme ultraviolet radiation. The Chapman layer. Morphology of the ionosphere. Ionospheric measurements. Ground based measurements and measurements using rockets and satellites. Far ultraviolet remote sensing techniques. Transport processes in the ionosphere. Geomagnetic control of the ionosphere. The "fountain effect" and equatorial anomaly. Solar flare effects on the ionosphere. **Prerequisite: PHY 105.**
- PHY 443 *Introduction to the Solar System* – 4 hrs. Historical perspective. Bode's law. General description of the members of the solar system: The sun, the planets, satellites, asteroids and comets. Detailed description of the physical properties of the planets and planetary orbits. Terrestrial and Jovian planets. Planetary satellites. Origin of the moon. Asteroids and comets. The sun and its stellar classification. Features of the Sun's surface. The sunspot cycle. The solar wind. Filament eruptions and coronal mass ejections. **Prerequisite: PHY 105.**
- PHY 444 *Introduction to Orbital Mechanics* – 4 hrs. Historical perspective. Kepler's laws of planetary motion. Minimum launch velocity to orbit, escape velocity and time to reach the moon. Low Earth orbit; Geo-synchronous orbit; Geo-stationary orbit; and Sun-synchronous orbit. The central force problem. The two-body problem and reduced mass. Orbital maneuvers: In-plane and out-of-plane orbital changes. Perturbations of orbits. The orbital elements. Orbit determination. The three-body problem and Lagrange libration points. Orbital decay due to atmospheric drag. **Prerequisite: PHY 321 or PHY 105.**
- PHY 451 *Introduction to Solid State Physics* – 3 hrs. This course includes crystal structure; lattice dynamics; electron states in periodic potential; semiconductor; magnetism; magnetic resonance; superconductivity; and point defects in solids. **Prerequisites: PHY 421.** (Offered as needed)
- PHY 453 *Introduction to Nuclear Physics* – 3 hrs. This course includes radioactivity; half life, passage of radiation through matter; isotopes; chart of nuclides; nucleus; mass charge; radii; alpha emission; beta decay theory; Fermi's theory; internal conversion; Electron capture; Deuteron problem; neutron; slowing down; chain reacting pile; and elementary particles. **Prerequisites: PHY 201 and PHY 421.** (Offered as needed)
- PHY 460 *Selected Topics in Physics* – 3 hrs. This course is designed to provide students an opportunity to study applied courses that are not offered in other existing physics courses. When it is offered, the particular topic to be studied will be reflected in the course title. **Prerequisites: PHY 105, 106 & 201.** (Offered as needed)
- PHY 490 *The Physics of Sports* – 3 hrs. The subject area covers many popular sports events in the Olympics including Track and Field events and popular American ball games. Special topics: Kinematics of sports projectiles; Kinematics of the 100 m and 200 m dash; Physics of the long jump; high jump; pole vault; triple jump; shot put; discuss and javelin. Physics of Basketball shooting, dribbling, passing and rebounding. Baseball pitching and hitting; the fly ball trajectory. Throwing the football. Athletic performance trends in the Olympics. Probability and statistics in sports. Other topics may be covered depending on demand. **Prerequisites: PHY 321 Mechanics I; or PHY 105 and a Mechanics course such as ME 206 Dynamics; or approval of the instructor for special cases.**

## SCHOOL OF BUSINESS

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## MISSION/OBJECTIVES

The mission of the Alabama A&M University School of Business is to provide a high quality management education that promotes the development of students' potentials as managers, entrepreneurs, leaders, productive employees and socially responsible individuals. Consistent with the University's history and contemporary mission, the School concentrates on instruction while seeking to combine the classic goal of intellectual development with the land-grant tradition of service. Applied and interactive educational experiences are emphasized in both the graduate and undergraduate programs. While the School of Business and the University are committed to graduate education, the School emphasizes undergraduate education as its first responsibility. In addition to the coverage of basic business principles, all programs develop students' computer, communications, interpersonal relations, and leadership skills, thereby preparing graduates for success in local, state, national, and global business environments. The AAMU School of Business builds on its historic mission of providing education for African-Americans to an expanded mission of educating a student body that is diverse in terms of ethnicity, national origin, and socio-economic background.

The School of Business, established September 1, 1968, will achieve its mission by meeting the following objectives:

- To promote intellectual development and traditional education of students
- To guide students' understanding of the environment in which businesses operate in the U.S. and around the world as well as specific techniques and principles of the primary business disciplines
- To provide an in-depth study of a specific business discipline that includes how specialists in that field interact with specialists from other disciplines to make decisions
- To offer students experiences in and out of the classroom that promote professionalism, ethical behavior, and leadership skills
- To provide the University community an opportunity to study various aspects of the business environment and different business operations

## PROGRAM OFFERINGS

The School of Business has three departments—Accounting; Economics, Finance and Office Systems Management; and Management and Marketing. They offer the bachelor of science degree in **accounting, economics, finance, management, and marketing**. They also offer the bachelor of science degree in business administration with concentrations in **international business, logistics, management information systems and office systems management**. The School offers minors in accounting, business administration, economics, management and marketing.

The Center for Entrepreneurship and Economic Development (CEED), whose mission is to reduce failures among small business and enhance their effectiveness, is housed in the School of Business. It provides management counseling and conducts training workshops free of charge. In addition, the School of Business, along with the School of Administrative Sciences at UAH and the Huntsville Madison County Chamber of Commerce, sponsor the North East Alabama Regional Small Business Development Center (NEAR-SBDC).

Information about our two graduate programs in business, the master of business administration (MBA) degree and the master of science degree with a major in economics, is in the [AAMU Graduate Bulletin](#).

While every effort is made to offer courses as indicated in the course descriptions, it sometimes becomes necessary to cancel courses. In the event of course cancellation, students should consult their academic advisors for selection of alternate courses.

## SCHOOL OF BUSINESS GRADUATION REQUIREMENTS

Undergraduate degree candidates in the School of Business must satisfy each of the following requirements:

- Complete the University General Education Curriculum (44 semester credit hours)

ENG 101	Composition I*	ECO 231	Principles of Macroeconomics
ENG 102	Composition II*	ECO 232	Principles of Microeconomics
ENG	Literature sequence I		Science Elective
ENG	Literature sequence II		Science Elective Lab
ENG 205	General Speech		Science Elective
	Fine Arts Elective		Science Elective Lab
MTH 112	Pre-Calculus Algebra*	ORI 101	Survival Skills
	Social Science Elective		Physical Education (2) or
HIS	History Elective		Health or Military Science

\*Must earn grade of C or better. ENG 103/104 may be substituted for international students.

- Complete the School of Business Core Curriculum (42 semester credit hours)

ACC 203	Introduction to Accounting I	MGT 315	Principles of Management
ACC 204	Introduction to Accounting II	MGT 413	Production Operation Management
ECO 271	Business Statistics I	MGT 442	Strategic Management/Policy
FIN 315	Principles of Finance	MKT 315	Principles of Marketing
MGT 207	Legal Environment and Ethics	OSM 310	Business Communications
MGT 213	Computer Applications in Business	OSM 315	Business and Professional Writing
MGT 308	Management Information Systems		International Business Course

- Complete all major requirements  
(Listed for each major program in the department sections of the [Bulletin](#))
- Complete the minimum number of semester credit hours required for graduation

Accounting		Economics	122
Financial Option	125	Finance	122
Managerial Option	124	Management	122
Business Administration		Marketing	122
International Business	122		
Logistics	122		
Management Information Systems	122		
Office System Management	122		

- Maintain a cumulative grade point average of 2.0 or above for all courses attempted at Alabama A&M University
- Maintain a cumulative grade point average of 2.0 or above for all business courses attempted at Alabama A&M University
- Maintain a cumulative grade point average of 2.0 or above for all courses in major attempted at Alabama A&M University
- Maintain a cumulative grade point average of 2.0 or above for all courses in area of concentration at Alabama A&M University

Transfer students pursuing a baccalaureate degree in the School of Business must earn at least 50 percent of the business credit hours required for the degree at Alabama A&M University.

**Requirements for Minor in Business Administration** (18 semester credit hours): ACC 203, ACC 204, FIN 315, MGT 315, MKT 315; and economics. If the student has completed ECO 200, or ECO 231 and ECO 232, no more

economics is required. If the student has completed ECO 231 only, he/she must complete ECO 232. If the student has completed ECO 232 only, he/she must complete ECO 231. If no more economics is required, the student must choose one approved business elective. All business electives must be 300- or 400-level courses.

## FINANCIAL ASSISTANCE/SCHOLARSHIPS

The preponderance of scholarships and financial assistance for students pursuing degrees in the School of Business is administered by the University Scholarship Program and the Office of Financial Aid. There are, however, some funds for business scholarships funded by corporations such as Daimler Chrysler for logistics students, Follmer Rudzweicz PLC for accounting students, Yedla K. Rao for economics students, Edward L. Lowder Colonial Bank for finance students and Gold Kist for all business majors. These are competitive scholarships that are awarded depending on availability of funds. Other corporate and organizational scholarships may become available throughout the academic year. Information on such programs is available through the appropriate departmental office and in the Office of the Dean.

Internships and cooperative education opportunities are available for students in the School of Business. They are available with and without academic credit. Most are paid positions, but some internships that provide excellent opportunities to gain valuable work experience in a student's field of study are not paid. The Kauffman Entrepreneurial Internship Program administered by the Department of Management and Marketing is available to all business majors. The Center for Entrepreneurship and Economic Development also places business interns in the Huntsville area. Other positions are available with businesses throughout the United States. Information on many positions is available through the Office of Career Planning and Development. Advisors and departmental chairs are good sources of information about internship and co-op opportunities for business majors.

## STUDENT/PROFESSIONAL ORGANIZATIONS

Discipline specific student organizations are available for students in each department in the School of Business. In addition, business students from all programs can be considered for membership in Phi Beta Lambda Business Fraternity and Delta Mu Delta Honor Society in Business. The discipline specific organizations are discussed in the department sections of the [Bulletin](#).

**Phi Beta Lambda, Inc.** is an organization with chapters on more than 600 college campuses across the United States. Its mission is to bring business and education together in a positive working relationship through innovative leadership and career development programs. Business students who have completed 30 semester credit hours or more with a 2.5 grade point average or higher are encouraged to seek membership in this organization.

**Delta Mu Delta** is a national honor society in business open to all business majors at both the graduate and undergraduate levels. Undergraduate members must:

- be candidates for the baccalaureate degree,
- have completed at least half of the work required for the degree,
- have a cumulative grade point of 3.2 or above,
- be in the top 20 percent of their class, and
- be of good character.



## **DEPARTMENT OF ACCOUNTING**

201 New School of Business

Voice: (256)-372-4767

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### **INTRODUCTION**

The role of the accountant has been transformed in recent years. Technological advances have created an environment of rapid growth, and in response, accounting has evolved in complexity. Accountants are more than financial historians who simply record and communicate financial data; they have become a critical part of management. Today's accountants are moving out of the corporate shadows to take center stage in their companies, handling greater responsibility and participating in broader business issues. The accounting profession is one of the most rapidly growing professions in the country.

### **MISSION/OBJECTIVES**

To meet the rapidly increasing demand, the curriculum provides a thorough education in the accounting discipline. The program develops and enhances a student's critical thinking, judgment, and communication skills, while providing a sound technical foundation. This specialized accounting knowledge, along with a broad liberal arts, mathematics, sciences, and business background, is designed to prepare students:

1. to enter the accounting profession in public accounting, industry, or the private sector;
2. for future growth and development within the accounting profession;
3. for advanced studies in accounting and other business fields, and
4. to provide the educational foundation for future advancement to administrative and leadership positions.

Students who wish to sit for the Uniform Certified Public Accountant (CPA) examination in Alabama and 44 other jurisdictions must meet a 150 semester-credit hour requirement. At AAMU, this can be accomplished through taking additional coursework at the undergraduate level or by pursuing a master's degree through our master of business administration (MBA) program with an accounting concentration.

### **PROGRAM OFFERINGS**

The Department of Accounting offers a four-year accounting program leading to the bachelor of science (B.S.) degree. The Department offers a choice of two concentrations, viz., financial and managerial to provide greater flexibility to students.

### **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

Please refer to the School of Business Scholarship section for more information on scholarships available to all business majors.

### **STUDENT/PROFESSIONAL ORGANIZATIONS**

**National Association of Black Accountants (NABA)** is a national organization whose primary purpose is to develop, encourage, and serve as a resource for greater participation by African-Americans and other minorities in the accounting profession. NABA's major thrust and its programs are designed to strengthen the skills base for its student members, provide support to those professionals seeking higher levels of accomplishment, identify



opportunities for minority students and professionals in the accounting profession, and encourage a greater number of African-American students to select accounting as their chosen field of study.

## SPECIAL PROGRAMS/AWARDS/RECOGNITIONS

The Department of Accounting honors two graduating accounting seniors with the highest undergraduate GPA each academic year with the “**Outstanding Academic Achievement in Accounting**” award.

## GRADUATION/PROGRAM REQUIREMENTS

- **University General Education Curriculum** (44 semester credit hours): ENG 101, ENG 102, ENG 205, ECO 231, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs, physical education (2) or health or military science.
- **School of Business Core Requirements** (45 semester credit hours): ACC 203, ACC 204, ACC 461, ECO 271, FIN 313, MGT 207, MGT 213, MGT 308 (ACC 472 for accounting majors), MGT 315, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315.
- **Major Requirements for Accounting, Financial Concentration** (39 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, ACC 351, ACC 421, ACC 441, ACC 450, ACC 460, ACC 461, MGT 318, six credit hours of free electives all of which must be outside of business.
- **Major Requirements for Accounting, Managerial Concentration** (38 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, ACC 351, ACC 403, ACC 441, ACC 460, ACC 461, ACC 466, eight credit hours of free electives of which six must be outside of business.
- **Requirements for Minor in Accounting, Financial Concentration** (18 semester credit hours): ACC 301, ACC 302, ACC 306, ACC 351, ACC 441, and any one of the following courses: ACC 421, ACC 442, ACC 450, ACC 451, ACC 461, ACC 472. Students pursuing the accounting minor will have to complete the pre-requisites for ACC 301, viz, ACC 203 and ACC 204.
- **Requirements for Minor in Accounting, Managerial Concentration** (18 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, ACC 466, and any one of the following courses: ACC 403 or ACC 461 or ACC 472. Students pursuing the accounting minor will have to complete the pre-requisites for ACC 301, viz., ACC 203 and ACC 204.

## ACCOUNTING MAJOR – FINANCIAL CONCENTRATION

125 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 120 Calculus and its App's <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>1,2</sup>	3	Science Elective	3
Science Elective	3	Science Elective Lab <sup>3</sup>	1
Science Elective Lab <sup>3</sup>	1	Fine Arts Elective	3
History Elective	3	MGT 213 Computer App's. in Business	<u>3</u>
PED Physical Education <sup>4</sup>	<u>3</u>		16
	15		

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
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ENG	Literature Sequence I	3	ENG	Literature Sequence II	3
ACC 203	Intro. to Accounting I	3	ACC 204	Intro. to Accounting II	3
ENG 205	General Speech	3	MGT 207	Legal Environment and Ethics	3
	Social Science Elective	3	ECO 271	Business Statistics I	3
ECO 231	Prin. Of Macroeconomics	3	ECO 232	Prin. Of Microeconomics	<u>3</u>
PED	Physical Education <sup>4</sup>	<u>1</u>			15
		16			

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ACC 301	Intermediate Accounting I	3	ACC 302	Intermediate Accounting II	3
ACC 303	Cost Accounting	3	MGT 318	Business Law	3
ACC 351	Federal Tax Accounting I	3	MGT 413	Production Operations Mgt.	3
FIN 315	Principles of Finance	3	MKT 315	Principles of Marketing	3
MGT 315	Principles of Management	3		Non Business Free Elective	<u>3</u>
OSM 310	Business Communication	<u>3</u>			15
		18			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ACC 306	Intermediate Accounting III	3	ACC 450	Government Accounting	3
ACC 421	Advanced Accounting	3	ACC 460	Seminar in Accounting Theory	3
ACC 441	Auditing I	3	ACC 472	Accounting Info. Systems	3
ACC 461	Seminar in Int'l. Accounting	3	MGT 442	Strategic Mgt. And Policy	3
	Non Business Free Elective	<u>3</u>	OSM 315	Professional Writing	<u>3</u>
		15			15

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>Science elective lab must correspond to the science elective.

<sup>4</sup>Health or military science may be taken instead of physical education.

## ACCOUNTING MAJOR – MANAGERIAL CONCENTRATION

124 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 120 Calculus and its App's <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>1,2</sup>	3	Science Elective	3
Science Elective	3	Science Elective Lab <sup>3</sup>	1
Science Elective Lab <sup>3</sup>	1	Fine Arts Elective	3
History Elective	3	MGT 213 Computer App's. in Business	<u>3</u>
PED Physical Education <sup>4</sup>	<u>3</u>		16
	15		

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG Literature Sequence I	3	ENG Literature Sequence II	3
ACC 203 Intro. to Accounting I	3	ACC 204 Intro. to Accounting II	3
ENG 205 General Speech	3	MGT 207 Legal Environment and Ethics	3
Social Science Elective	3	ECO 271 Business Statistics I	3
ECO 231 Prin. Of Macroeconomics	3	ECO 232 Prin. Of Macroeconomics	<u>3</u>
PED Physical Education <sup>4</sup>	<u>1</u>		15
	16		

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ACC 301 Intermediate Accounting I	3	ACC 302 Intermediate Accounting II	3
ACC 303 Cost Accounting	3	ACC 351 Federal Tax Accounting I	3
FIN 315 Principles of Finance	3	ACC 403 Advanced Cost Accounting	3
MGT 315 Principles of Management	3	MGT 413 Production Operations Mgt.	3
OSM 310 Business Communication	<u>3</u>	MKT 315 Principles of Marketing	3
	15	Free Elective	<u>2</u>
			17

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ACC 306 Intermediate Accounting III	3	ACC 460 Seminar in Accounting Theory	3
ACC 441 Auditing I	3	ACC 472 Accounting Info. Systems	3
ACC 461 Seminar in Int'l. Accounting	3	MGT 442 Strategic Mgt. And Policy	3
ACC 466 Controllership	3	OSM 315 Professional Writing	3
Non Business Free Elective	<u>3</u>	Non Business Free Elective	<u>3</u>
	15		15

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>Science elective lab must correspond to the science elective.

<sup>4</sup>Health or military science may be taken instead of physical education.

## COURSE DESCRIPTIONS

- ACC 203      *Introduction to Accounting I* – 3 hrs. Basic concepts with a focus on how accounting events affect financial statements. Emphasizes both preparation and use of external financial reports. Topics include accrual versus cash, receivables, payables, inventory, long-term operational assets, long-term liabilities, stockholder’s equity, recording procedures, and financial statement analysis. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- ACC 204      *Introduction to Accounting II* – 3 hrs. Accounting II is a continuation of ACC 203. Basic concepts associated with managerial accounting. Emphasizes the use of relevant information for planning, control and decision-making. Topics include cost behavior, cost allocation, product costing, budgeting, responsibility accounting, and capital budgeting. **Prerequisite: ACC 203.** (Offered Fall, Spring, and Summer)
- ACC 219      *Managerial Accounting* – 3 hrs. A study of the uses of accounting information for planning and control in an enterprise area of study, including budgeting, financial analysis, basic cost accounting reports, and capital budgeting. **Not for accounting majors. Prerequisite: ACC 204.** (Offered Fall, Spring, and Summer)
- ACC 301      *Intermediate Accounting I* – 3 hrs. A study of financial reporting theory and process. Each major asset category is analyzed in balance sheet order. **Prerequisite: ACC 204.** (Offered Fall, Spring, and Summer)
- ACC 302      *Intermediate Accounting II* – 3 hrs. A continuation of accounting financial theory through more balance sheet analysis, and study of special-purpose statements. **Prerequisite: ACC 301.** (Offered Fall, Spring, and Summer)
- ACC 303      *Cost Accounting* – 3 hrs. Cost accounting is an analysis of the principles of cost accounting for various manufacturing and /or service businesses, especially the use of cost data under job order, process, and standard –cost systems. **Prerequisite: ACC 204.** (Offered Fall and Spring)
- ACC 306      *Intermediate Accounting II* – 3 hrs. To provide students with a “cutting edge” understanding of financial accounting with respect to the following topics: revenue recognition, income taxes, pensions and post retirement benefits, leases, accounting changes and error analysis, cash flow statement, financial statement analysis, interim reporting, segment reporting, and disclosures. **Prerequisite: ACC 302.** (Offered Fall and Spring)
- ACC 351      *Federal Tax Accounting I* – 3 hrs. An analysis of the Federal Income Tax Law as it applies to individuals and a study of the law applicable to new regulations, cases, and tax issues. **Prerequisite: ACC 204.** (Offered Spring)
- ACC 401      *Independent Study* – 3 hrs. This course entails the completion of a research project to be accomplished under the supervision of a member of the accounting faculty. The project will involve a detailed study of a topic of particular interest to the accounting profession. The results of the study will be documented by a research report. **Prerequisite: ACC 302, senior standing, and permission of the instructor.** (Offered Fall and Spring)
- ACC 403      *Advanced Cost Accounting* – 3 hrs. A study of the application of cost accounting data to managerial planning and control, emphasizing special purpose cost accounting statement and recent developments in the use of quantitative tools in management decision—making. **Recommended for accounting majors. Prerequisite: ACC 303.** (Offered Spring)
- ACC 421      *Advanced Accounting* – 3 hrs. A detailed study of the accounting principles and problems related to partnerships and business combinations. A substantial part of the course is devoted to student's reports on other advanced accounting topics. **Prerequisite: ACC 302.** (Offered Fall)

- ACC 431 *Ethics and the Accountant* – 3 hrs. This course is an in-depth study of concepts of professional ethics and responsibilities for the accountant. Emphasis is placed on the study of codes of ethical conduct promulgated by various accounting organizations/regulatory agencies of local, state and federal government. **Recommended for accounting majors. Prerequisite: ACC 302.** (Offered Fall and Spring)
- ACC 441 *Auditing I* – 3 hrs. The study of generally accepted auditing standards and procedures underlying the certification of financial statements by certified public accountants. Through problems and cases, the student is introduced to the methodology used by an independent auditor in verifying the books and records of a business entity. **Prerequisite: ACC 302.** (Offered Fall)
- ACC 442 *Auditing II* – 3 hrs. This is a second course in the study of auditing theory and practice. Emphasis is on integrating concepts of analysis, deductive logic, risk, assessment, judgment, and clear expression. Auditing with computers will also be emphasized. At least one comprehensive audit case study will be included. **Recommended for accounting majors. Prerequisite: ACC 441.** (Offered Spring)
- ACC 450 *Governmental Accounting* – 3 hrs. A study of the systems of fund accounting used by government units, charitable organizations, and educational institutions. Special emphasis will be placed on the accountability/stewardship function accomplished by the accounting system of a non-profit organization. **Prerequisite: ACC 302.** (Offered Spring)
- ACC 451 *Federal Tax Accounting II* – 3 hrs. This course is an analysis of partnership and corporate tax laws and an introduction to tax research and planning, as a means of gaining an understanding of the role of the tax practitioner. **Prerequisite: ACC 351.** (Offered Fall)
- ACC 460 *Seminar in Accounting Theory* – 3 hrs. An analysis of the body of generally accepted accounting principles as interpreted by decisions of the Accounting Principles Board and the Financial Accounting Standards Board. Extensive use will be made of case studies where outcomes have been influenced by recent pronouncement. **Prerequisite: ACC 302.** (Offered Spring)
- ACC 461 *Seminar in International Aspects of Accounting* – 3 hrs. This course will emphasize an understanding of a global economy, multinational business activity on accounting. Emphasis will be placed on comparative accounting and reporting activities, as well as regulatory requirements of various countries. **Recommended for accounting majors. Prerequisite: Senior standing.** (Offered Fall)
- ACC 466 *Controllership* – 3 hrs. This course focuses on interrelationships of managerial accounting and analytical, behavioral, and technological considerations in the analysis and design of planning and control systems. The goals of firms and organizational structures for specifying system requirements will be investigated. Discussion and evaluation of the component elements of these systems against system requirements and the present. Future roles of management accounting within the scope of management information and control system. Case studies will be used. **Prerequisite: ACC 303.** (Offered Fall)
- ACC 472 *Accounting Information Systems* – 3 hrs. This course covers the subject matter of information systems such as feasibility study, systems design and implementation. Modern accounting information systems are computer-based; hence, more emphasis is placed on computer based systems and their control. **Prerequisite: ACC 302.** (Offered Spring)

**DEPARTMENT OF ECONOMICS, FINANCE AND OFFICE SYSTEMS  
MANAGEMENT**

215 New School of Business  
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**INTRODUCTION**

The analytical and general knowledge acquired through programs in economics, finance and office systems management prepares students for a large array of careers in public, not-for-profit, and private organizations. Studies in economics and finance are particularly relevant for policy analysis and policy making. Students who graduate from these programs are prepared to pursue graduate studies in economics, business, law, public policy, public administration, urban planning and other fields. The concentration in office systems management with a bachelor of science in business administration provides the practical knowledge of running daily activities of a business. The graduates of this program can assume supervisory and administrative duties in an electronic office environment.

**MISSION/OBJECTIVES**

The primary objective of the Department is to provide sound knowledge of economics, finance and office systems management taking into consideration the changing nature of the economy and business operations in the United States and other countries. Understanding of the business and economic environment requires a foundation in the analytical techniques used in economics and finance. The program in office systems management (OSM) has two goals: (1) To prepare competent office personnel for careers in today's high technology office as administrative assistants, office managers, and other related occupations in business, industry, and government; and (2) To prepare business education teachers at the secondary and post-secondary levels through business education courses. The curriculum in business and office education are listed under the Department of Secondary Education, School of Education.

**PROGRAM OFFERINGS**

The Department of Economics, Finance and Office Systems Management offers majors leading to a bachelor of science degree in economics, a bachelor of science degree in finance; and a bachelor of science degree in business with a concentration in office systems management. While majors, concentration and minors are designed for students who aim toward careers in the respective or related fields, knowledge of economics, finance and office systems management is essential to every educated person. Therefore, the Department offers a variety of courses that are designed to meet the needs of students majoring in business education and other fields inside and outside of the School of Business. In particular, ECO 200, Basic Economics, a one semester introductory course covers general economic concepts and theory. It is an extraction from the two-semester sequence ECO 231 and ECO 232, which emphasizes macro- and micro-economics. ECO 300, Engineering Economics, is a required course for some programs in the School of Engineering and Technology. Other courses in economics, finance, and statistics are offered to meet the needs of business students as well as students in other schools.

Courses offered through the area of Office Systems Management, in addition to major courses, are service courses to the School of Business and content courses for business education majors. OSM 310, Business Communications, OSM 315, Business and Professional Writing, and OSM 302, Desktop Publishing are offered to meet the needs of business students as well as students in other schools.

## COURSE SCHEDULING

While every effort is made to offer courses as indicated in the course descriptions, it sometimes becomes necessary to cancel courses. In the event of course cancellation, students should consult their academic advisors for selection of alternate courses.

## FINANCIAL ASSISTANCE/SCHOLARSHIPS

The Department offers two annual scholarships, one in economics, named for Dr. Yedla K. Rao, the former Chairman of the Department; and the other in finance, named for Edward L. Lowder Colonial Bank of Huntsville. Other scholarships are described under the School of Business “Financial Assistance/ Scholarship” section.

## COOPERATIVE EDUCATION/INTERNSHIPS

*ECO 490/ FIN 490, Internship in Economics/ Finance:* The students in the Department of Economics, Finance and Office Systems Management may take this course, if internship placement is approved.

*OSM 406 Internship and Seminar* is a program requirement for office systems management majors. Students spend one semester working in a business office while attending in-school seminars related to the course.

For a discussion on other internship opportunities for business students, see the opening of the School of Business section of the [Bulletin](#).

## STUDENT/PROFESSIONAL ORGANIZATIONS

**Economics and Finance Club** promotes and encourages students’ achievement through academic and extra-curricular activities. Particularly, through visiting different business and public organizations, inviting guest lecturers to the School of Business, and enhancing internship opportunities for students, the club offers a variety of professional development experiences related to alternative careers for graduates of programs in the economics and finance. Membership in the Club is open to all students interested in its activities.

**The Office Systems Management Club** is the organization for students with concentrations in Office Systems Management and majors in Business Education. Its purpose is to assist career-oriented business students in developing a better understanding of office professions and the business world; to stimulate interest in and provide insight regarding lifetime careers and advancement opportunities as administrative support personnel; to promote the exchange of ideas and experiences and a spirit of fellowship among business students with similar career interest; to provide opportunities for interaction among students, educator, and business professionals; and to provide an opportunity for teacher trainees in business education to expand their understanding of office professions. Membership is open to all business education and office system management students.

**TVA Investment Challenge Program:** Tennessee Valley Authority (TVA) made available \$100,000 out of its decommissioning funds for each of the nineteen universities in its service zone. Alabama A&M University is one of those nineteen universities. The students of the Economics, Finance and OSM Department of AAMU are given the opportunity to invest the fund in the stock market. No monetary benefit will come from this investment fund for the school, department, faculty or students. The sole purpose of this program is to provide the students an opportunity to manage real money. It is a valuable learning experience that is rare.

## SPECIAL PROGRAMS/AWARDS/RECOGNITIONS

The Department of Economics, Finance and Office Systems Management recognizes three students for **“Outstanding Academic Achievement” in economics, finance and office systems management** in the Spring semester of each year.

The outstanding business education student receives a one-year membership in the National Business Education Association.

## **GRADUATION/PROGRAM REQUIREMENTS**

- **University General Education Curriculum** (44 semester credit hours): ORI 101, ENG 101, ENG 102, ENG 205, ECO 231, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs, physical education (2) or health or military science.
- **School of Business Core Requirements** (45 semester credit hours): ACC 203, ACC 204, ECO 271, ECO 446, FIN 315, MGT 207, MGT 213, MGT 308, MGT 315, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315. International business course is listed with major requirements.
- **Major Requirements for Economics** (36 semester credit hours): ECO 272, ECO 401, ECO 402, ECO 411, ECO 413, ECO 414, ECO 444, ECO 446, six credit hours of upper division economics courses, six credit hours of free electives of which three must be outside of business. All business electives must be 300- or 400-level courses.
- **Major Requirements for Finance** (36 semester credit hours): ECO 272, ECO 446, FIN 316, FIN 317, FIN 432, FIN 449, FIN 487, FIN 489, six credit hours of upper division finance courses, six credit hours of free electives of which three must be outside of business. All business electives must be 300- or 400-level courses.
- **Major Requirements for Business Administration, Office Systems Management Concentration** (36 semester credit hours): OSM 202, OSM 204, OSM 215, OSM 302, OSM 309, OSM 312, OSM 406, MKT 464, twelve credit hours of free electives including at least three credit hours outside School of Business. All business electives must be 300- or 400-level courses.
- **Requirements for Minor in Economics, Business Majors** (18 semester credit hours): ECO 272, ECO 401 or ECO 402, and 12 semester credit hours of approved economics electives, excluding ECO 200, ECO 231, and ECO 232. All business electives must be 300- or 400-level courses.
- **Requirements for Minor in Economics, Non-Business Majors** (18 semester credit hours): ECO 231, ECO 232 (ECO 200 may be taken instead of ECO 231 and ECO 232 sequence), ECO 271, ECO 401 or ECO 402 and 6 to 9 credit hours of approved economics or business electives, to complete 18 semester credit hours. All business electives must be 300- or 400-level courses.
- **Requirements for Minor in Finance, Business Majors** (18 semester credit hours): ECO 272, FIN 316 and 12 credit hours of approved finance electives. All business electives must be 300- or 400-level courses.
- **Requirements for Minor in Finance, Non-Business Majors** (18 semester credit hours): ACC 203, ECO 231 and ECO 232 (students may substitute ECO 200 plus an economics elective at 300-400 level), FIN 315 and 6 credit hours of approved finance electives.



## ECONOMICS MAJOR

122 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 120 Calculus and its App's <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>1,2</sup>	3	Science Elective	3
Science Elective	3	Science Elective Lab <sup>3</sup>	1
Science Elective Lab <sup>3</sup>	1	Fine Arts Elective	3
History Elective	3	Social Science Elective	<u>3</u>
PED Physical Education <sup>4</sup>	<u>3</u>		16
	15		

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG Literature Sequence I	3	ENG Literature Sequence II	3
ACC 203 Intro. to Accounting I	3	ACC 204 Intro. to Accounting II	3
ENG 205 General Speech	3	MGT 207 Legal Environment and Ethics	3
MGT 213 Computer App's. in Business	3	ECO 271 Business Statistics I	3
ECO 231 Prin. Of Macroeconomics	3	ECO 232 Prin. Of Microeconomics	<u>3</u>
PED Physical Education <sup>4</sup>	<u>1</u>		15
	16		

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 272 Business Statistics II	3	MGT 308 Management Info. Systems	3
FIN 315 Principles of Finance	3	OSM 315 Professional Writing	3
MGT 315 Principles of Management	3	ECO 402 Intermediate Microeconomics	3
OSM 310 Business Communication	3	ECO 413 Money and Banking	3
ECO 401 Intermediate Macroeconomics	<u>3</u>	MKT 315 Principles of Marketing	3
	15		15

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 414 Managerial Economics	3	MGT 442 Strategic Mgt. And Policy	3
ECO 446 International Trade & Policy	3	ECO 411 Contemp. Issues in Economics	3
MGT 413 Production Operations Mgt.	3	ECO 444 Public Sector Economics	3
Economics Elective	3	Economics Elective	3
Free Elective <sup>5</sup>	<u>3</u>	Free Elective <sup>5</sup>	<u>3</u>
	15		15

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted by international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>Science elective lab must correspond to the science elective.

<sup>4</sup>Health or military science may be taken instead of physical education.

<sup>5</sup>At least 3 hours of electives outside of School of Business.

## COURSE DESCRIPTIONS

- ECO 200      *Basic Economics* – 3 hrs. A study of the fundamentals of macro- and microeconomics in a market economy; economic systems; money and banking, economic conditions and government policies. **Prerequisite: none.** (Offered Fall, Spring, and Summer)
- ECO 231      *Principles of Macroeconomics* – 3 hrs. A study of the measurement and determination of GNP and related measures; money and banking; inflation; unemployment; Keynesian, monetarist and other macroeconomics theories; the economic role of the government; the U.S. economy; monetary and fiscal policies; economic growth; and international issues. **Prerequisite: MTH 112.** (Offered Fall, Spring, and Summer)
- ECO 232      *Principles of Microeconomics* – 3 hrs. Elements of supply and demand; elasticity; consumer behavior; theory of the firm; production, cost analysis and profit optimization; product markets and market structures; resource markets and resource allocation; and taxation and government expenditures. **Prerequisite: MTH 112.** (Offered Fall, Spring, and Summer)
- ECO 271      *Business Statistics I* – 3 hrs. An introduction to descriptive and analytical statistical techniques; collection, organization and graphical presentation of data; probability theory and probability distributions; elementary estimation and hypothesis testing; simple linear regression and correlation; time series; and index numbers. **Prerequisite: MTH 112.** (Offered Fall, Spring, and Summer)
- ECO 272      *Business Statistics II* – 3 hrs. Review of probability; normal and t distributions; statistical inference about means and proportions; inferences about population variances; test of goodness of fit and independence; analysis of variance and experimental design; time series and index numbers; regression and correlation analysis. **Prerequisite: ECO 271 or equivalent.** (Offered Fall, Spring, and Summer)
- ECO 300      *Engineering Economics* – 3 hrs. Economic evaluation of private and public projects; time value of money; compound interest; present and future values; uniform series of costs and benefits; effects of depreciation, inflation and taxes on the valuation of projects; risk and uncertainty; investment criteria; internal rate of return, net present value and cost-benefit analysis. **Prerequisite: One MATH course or sophomore/junior standing in engineering or technology.** (Offered Fall and Summer)
- ECO 301/FIN 301      *Consumer Finance and Economics* – 3 hrs. Managing personal finances in a market economy, including cash and credit management, income and asset protection, and investment planning. Major topics of consumer economics such as purchasing decisions, consumer income and welfare, and the mass consumption effect on the environment. **Prerequisite: None.** (Offered as needed)
- ECO 326      *Labor Management Relation* – 3 hrs. Study of the labor union movement, labor management relations, collective bargaining, and labor legislation. **Prerequisite: ECO 200, ECO 231 or ECO 232.** (Offered Fall)
- ECO 401      *Intermediate Macroeconomics* – 3 hrs. Aggregate economic analyses; measurement and determination of national income, including the price level, unemployment and economic growth; international aspects of macroeconomics; fiscal and monetary policies; classical, Keynesian and post-Keynesian theories. **Prerequisite: ECO 231.** (Offered Fall)
- ECO 402      *Intermediate Microeconomics* – 3 hrs. The theories of consumer behavior; production and cost theories; behavior of the firm in the product and resource markets under different types market structures; supply and demand; elasticity; resource allocation; analysis of the impact of economic policies on firms and industries, including taxation, quotas and price fixing; welfare economics. **Prerequisite: ECO 232.** (Offered Spring)
- ECO 411      *Contemporary Issues in Economics* – 3 hrs. Current economic problems and issues such as the

debt and the deficit, health care, environmental economics, crisis in financial institutions, social security, and the U. S. trade deficit. **Prerequisite: ECO 231.** (Offered Spring)

- ECO 413 *Money and Banking* – 3 hrs. The monetary system; functions, properties and types of money; evolution of money, commercial banks and other depository institutions; origins and current role of the Federal Reserve System and other public monetary institutions; measurement and control of the stock of money; the role of money in the macroeconomy; monetary policy. **Prerequisite ECO 231.** (Offered Fall, Spring, and Summer)
- ECO 414 *Managerial Economics* – 3 hrs. Application of economic concepts to business decision-making; analysis and forecasting of demand; cost analysis; pricing behavior; and optimizing techniques. **Prerequisite: ECO 232.** (Offered Fall)
- ECO 415 *Environmental Economics* – 3 hrs. Economic analysis of environmental issues, problem, and solution; analysis of benefits and costs of improving the environment; the global dimensions of the environmental problems resulting from resource extraction and utilization and industrial production. **Prerequisite: ECO 200 or ECO 232.** (Offered Fall)
- ECO 433/434/435 (FIN 433/434/435) *Investment in Practice* – 1 hr. Students manage an investment portfolio. They trade stocks through a broker. This is not a game, but the management of real money. Students apply their knowledge of portfolio management and investment theory in making these decisions. **Student may repeat the course one or two times.**
- ECO444/FIN 444 *Public Sector Economics* – 3 hrs. Effects of spending public funds, collecting taxes and other revenues; government borrowing and debt payment; government expenditures, revenues, and public credit. **Prerequisite: ECO 200 or ECO 231.** (Offered Spring)
- ECO 445 *History of Economic Thought* – 3 hrs. A study of the historical development of economic thought from ancient times to the present. **Prerequisite: ECO 200, ECO 231 or ECO 232.** (Offered as needed, consult your advisor)
- ECO 446 *International Trade and Policy* – 3 hrs. Principles underlying international trade; free trade and the effects of barriers to trade; the effects of mobility of factors of production; macroeconomics of international exchange of goods, services, and financial assets. **Prerequisite: ECO 231.** (Offered Fall)
- ECO 490/FIN 490 *Internship in Economics/Finance* – 3 hrs. This course integrates the theoretical knowledge in economics and finance with practical application of that knowledge. **Interested students with approved placements are eligible to take this course for credit.**

**FINANCE MAJOR**

122 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ORI 101	Survival Skills	1	ENG 102	Composition II <sup>1</sup>	3
ENG 101	Composition I <sup>1</sup>	3	MTH 120	Calculus and its App's <sup>2</sup>	3
MTH 112	Pre-Calculus Algebra <sup>1,2</sup>	3		Science Elective	3
	Science Elective	3		Science Elective Lab <sup>3</sup>	1
	Science Elective Lab <sup>3</sup>	1		Fine Arts Elective	3
	History Elective	3		Social Science Elective	<u>3</u>
PED	Physical Education <sup>4</sup>	<u>3</u>			16
		15			

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ENG	Literature Sequence I	3	ENG	Literature Sequence II	3
ACC 203	Intro. to Accounting I	3	ACC 204	Intro. to Accounting II	3
ENG 205	General Speech	3	MGT 207	Legal Environment and Ethics	3
MGT 213	Computer App's. in Business	3	ECO 271	Business Statistics I	3
ECO 231	Prin. Of Macroeconomics	3	ECO 232	Prin. Of Microeconomics	<u>3</u>
PED	Physical Education <sup>4</sup>	<u>1</u>			15
		16			

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ECO 272	Business Statistics II	3	MGT 308	Management Info. Systems	3
FIN 315	Principles of Finance	3	OSM 315	Professional Writing	3
MGT 315	Principles of Management	3	FIN 316	Managerial Finance	3
OSM 310	Business Communication	3	FIN 317	Computer App's. in Finance	3
MKT 315	Principles of Marketing	<u>3</u>	FIN 432	Investment	<u>3</u>
		15			15

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
FIN 449	Money and Capital Market	3	MGT 442	Strategic Mgt. And Policy	3
ECO 446	International Trade & Policy	3	FIN 487	International Financial Mgt.	3
MGT 413	Production Operations Mgt.	3	FIN 489	Special Topics in Finance	3
	Finance Elective	3		Finance Elective	3
	Free Elective <sup>5</sup>	<u>3</u>		Free Elective <sup>5</sup>	<u>3</u>
		15			15

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.<sup>3</sup>Science elective lab must correspond to the science elective.<sup>4</sup>Health or military science may be taken instead of physical education.<sup>5</sup>At least 3 hours of electives outside of School of Business.

## COURSE DESCRIPTIONS

- FIN 301/ECO 301 *Consumer Finance and Economics* – 3 hrs. Managing personal finances in a market economy, including cash and credit management, income and asset protection, and investment planning. Major topics in consumer economics include purchasing decisions, consumer income and welfare, and the mass consumption effect on the environment. **Prerequisite: None.**
- FIN 315 *Principles of Finance* – 3 hrs. A study of how corporations raise and utilize funds, the kinds of securities and principles involved in the above processes, and the analytical techniques employed by financial managers to appraise the capital-raising and fund-allocation activities. **Prerequisite: ECO 271.** (Offered Fall, Spring and Summer)
- FIN 316 *Managerial Finance* – 3 hrs. The financial manager's responsibilities for determining optimal policies and procedures for capital budgeting under conditions of uncertainty; long term financing, dividend distribution, mergers and acquisitions and working capital management. A problem solving and/or case study approach is used but not to the exclusion of probing theoretical questions. **Prerequisites: FIN 315 and ECO 271 Co-requisite: ECO 272.** (Offered Spring)
- FIN 317 *Computer Analysis in Finance* – 3 hrs. The use of different software packages in analyzing decision making by financial managers. Emphasis will be placed on problem solving in the areas of risk and return, capital budgeting, cost of capital, capital structure, loan amortization, and time value of money. **Prerequisite: FIN 315.** (Offered Spring)
- FIN 412 *Risk and Insurance* – 3 hrs. Basic ideas, problems, and principles found in all types of modern-day insurance and other methods of handling risks as well as risk management as it directly affects the family, businesses, and society as a whole. (Offered as needed, consult your advisor).
- FIN 432 *Investment* – 3 hrs. Public and corporate securities, capital markets, and analytical skills used to evaluate stocks, bonds, and many other types of investments in terms of their income and growth prospects from the standpoint of individual and institutional investors. **Prerequisite: FIN 315.** (Offered Spring)
- FIN 433/434/435 (ECO 433/434/435) *Investment in Practice* – 1 hr. Students manage an investment portfolio. They trade stocks through a broker. This is not a game, but the management of real money. Students apply their knowledge of portfolio management and investment theory in making these decisions. **Student may repeat the course one or two times.**
- FIN 444/ECO 444 *Public Sector Finance* – 3 hrs. Effects of spending public funds, collecting taxes and other revenues; government borrowing and debt payment; government expenditures, revenues, and public credit. **Prerequisite: ECO 200 or ECO 231.** (Offered Spring)
- FIN 449 *Money and Capital Market* – 3 hrs. Financing process and the role of the financial markets, aggregate investment and savings, money and capital markets, and the flow of funds; determination of asset prices and interrelationships among them; role of financial intermediaries and the impact of their portfolio policy. **Prerequisite: FIN 315.** (Offered Fall)
- FIN 479 *Derivative Markets* – 3 hrs. Functions, techniques, and the valuation of derivative securities, such as futures, forward and options markets. Primary emphasis is on pricing and methods of trading. **Prerequisite: FIN 316.** (Offered Spring)
- FIN 484 *Bank Management* – 3 hrs. The financial management of banks. Emphasis is placed on deposits, loans, bond portfolios, credit analysis, analysis and interpretation of federal reserve regulations and publications. **Prerequisite: FIN 316.** (Offered Fall and Summer, if needed)
- FIN 487 *International Financial Management* – 3 hrs. Optimum decision making in a global business environment. The course is multidimensional, requiring considerations of social, economic and

political factors in addition to traditional (intrafirm) managerial concerns. **Prerequisite:** FIN 316. (Offered Fall)

FIN 489 *Special Topics in Finance* – 3 hrs. Current issues and problem relating to corporate finance along with computer-assisted techniques and methods used to select, administer and change the financial decisions. **Prerequisite:** FIN 316. (Offered Spring)

FIN 490/ECO 490 *Internship in Economics/Finance* – 3 hrs. This course integrates the theoretical knowledge in economics and finance with practical application of that knowledge. **Interested students with approved placements are eligible to take this course for credit.**

**BUSINESS**  
**Office Systems Management Concentration**  
122 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 120 Calculus and its App's <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>1,2</sup>	3	Science Elective	3
Science Elective	3	Science Elective Lab <sup>3</sup>	1
Science Elective Lab <sup>3</sup>	1	HIS History Elective	3
Fine Arts Elective	3	ENG Literature Sequence I	<u>3</u>
PED Physical Education <sup>4</sup>	<u>3</u>		16
	15		

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG Literature Sequence II	3	ENG 205 General Speech	3
ECO 231 Prin. Of Macroeconomics	3	ECO 232 Prin. Of Microeconomics	3
ACC 203 Intro. to Accounting I	3	ACC 204 Intro. to Accounting II	3
Social Science Elective	3	MGT 207 Legal Environment and Ethics	3
OSM 215 Business Mathematics	3	MGT 213 Computer App's. in Business	<u>3</u>
PED Physical Education <sup>4</sup>	<u>1</u>		15
	16		

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
OSM 202 Word Processing	3	OSM 302 Desktop Publish. & Info. Tech.	3
ECO 271 Business Statistics I	3	OSM 309 Records Management	3
OSM 310 Business Communication	3	MKT 315 Principles of Marketing	3
MGT 308 Mgt. Information Systems	3	FIN 315 Principles of Finance	3
MGT 315 Principles of Management	<u>3</u>	OSM 204 Office Procedures	<u>3</u>
	15		15

## Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
OSM 315 Professional Writing	3	OSM 312 Office Management	3
MGT 413 Production Operations Mgt.	3	MKT 464 Global Marketing	3
MGT 442 Strategic Mgt. And Policy	3	OSM 406 Office Internship	3
Free Elective <sup>5</sup>	3	Free Elective <sup>5</sup>	3
Free Elective <sup>5</sup>	<u>3</u>	Free Elective <sup>5</sup>	<u>3</u>
	15		15

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>Science elective lab must correspond to the science elective.

<sup>4</sup>Health or military science may be taken instead of physical education.

<sup>5</sup>At least 3 hours of electives outside of School of Business.

## COURSE DESCRIPTIONS

- BED 305      *Office Practicum* – 3 hrs. This course is designed to give the prospective business education teacher coordinated and supervised office work experience. **Prerequisites: OSM 202, OSM 204, and OSM 302.** (Offered Spring)
- BED 425      *Materials and Methods of Teaching Business Subjects* – 3 hrs. This course includes a study of basic methods, strategies, instructional materials, and media that relate to the effective teaching of business education subjects. **Prerequisites: OSM 202, OSM 204, ACC 204, OSM 302, EDU 102, EDU 307, and senior classification.** (Offered Fall)
- BED 426      *Directed Teaching and Seminar* – 9 hrs. This course includes guided observation, participation and teaching in cooperating public secondary schools. Also included are conferences with cooperating teachers and one class hour per week at the University for twelve weeks. **Prerequisites: BED 425, and all courses prescribed for BS in business education up to the second semester of the senior year.** (Offered Fall and Spring)
- OSM 202      *Word Processing* – 3 hrs. This course is an introduction to word processing and information concepts. It includes the fundamentals of word processing, its applications in business, and web page design. (Offered Fall)
- OSM 204      *Office Procedures* – 3 hrs. This course focuses on the changing nature of work in the 21<sup>st</sup> Century. It emphasizes technology, the global economy, and the skills required for the changing work environment. Emphasis is placed on the development of skills to manage diversity in the work force, ethical considerations, and time and stress management. (Offered Spring)
- OSM 215      *Business Mathematics* – 3 hrs. This course emphasizes mathematics applied to business and involves percentages, interests, comparative statements, ratios, annuities, and discounts. (Offered Spring)
- OSM 302      *Desktop Publishing and Information Technology* – 3 hrs. This course is designed to provide hands-on experience in using advanced formatting features to produce brochures, newsletters, and reports. The latest information technology will be covered including scanners, printers, and LCD panels and/or projectors, as well as configuring the desktop, managing files, and using the Internet. (Offered Spring)
- OSM 309      *Records Management* – 3 hrs. This course is designed to provide study in the functions and analysis of records management in organizations. Emphasis is placed on filing procedures and systems design. Manual filing and basic computer database management applications are included. (Offered Spring-even numbered years)

- OSM 310      *Business Communications* – 3 hrs. This course is designed to help students perfect their ability to communicate accurately and effectively in both oral and written business communications. Special emphasis is placed on writing business documents and communication for seeking employment.
- OSM 312      *Office Management* – 3 hrs. This course emphasizes on planning and scheduling work: employment procedures; supervision of employees, including training and promotion; and maintaining office equipment. (Offered Spring-odd numbered years)
- OSM 315      *Professional Writing* – 3 hrs. This course is specifically designed to meet the needs of students who will perform research and write business and technical reports and proposals pertinent to any area of business, industry, or government.
- OSM 406      *Office Internship and Seminar* – 3 hrs. This course is designed to give the student work-related experiences in office management. Work experiences, guided observations, participation, and conferences will be arranged with cooperative enterprises for ten weeks. (Offered Spring)





## **DEPARTMENT OF MANAGEMENT AND MARKETING**

316 New School of Business

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### **INTRODUCTION**

In today's increasingly competitive environment, organizations in both the private and public sectors are interested in individuals that would provide effective leadership at all levels of their organizations. The Department of Management and Marketing offers bachelor of science programs in management, marketing, and business administration designed to provide students with a broad-based education for managerial success. This broad-based education prepares students for excellent employment and entrepreneurial opportunities in business, government and the not-for-profit sector.

### **MISSION/OBJECTIVES**

The objective of the Department of Management and Marketing is to provide high quality education that prepares students for leadership positions in their chosen professions and to meet the challenges of personal development. Consistent with the mission of the School of Business, the Department focuses on providing students with the knowledge to develop the skills to analyze problems, communicate solutions, and understand the impact of their decisions.

### **PROGRAM OFFERINGS**

The Department of Management and Marketing offers majors leading to the bachelor of science degree in **management, marketing, and business administration with concentrations in international business, logistics, and management information systems**. The department also offers minors in management and marketing. These programs are designed to develop students' understanding and application of knowledge in accounting, economics, information systems, finance, international business, logistics, legal environment and ethics, management, marketing, and quantitative methods.

### **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

Some scholarships and financial assistance for students pursuing programs in the Department are available through the Office of Admissions, and the Office of Student Financial Aid. There are some scholarships funded by Daimler Chrysler for students pursuing the logistics concentration. Also there are other corporate and organizational scholarships that may become available throughout the academic year. Information on such scholarships is available through the departmental office and in the Office of the Dean of the School of Business.

### **COOPERATIVE EDUCATION/INTERNSHIPS**

The Department offers internship courses that provide students the opportunity to acquire some practical experience and enhance their personal and professional development. Students may participate in paid internships through the Kauffman Entrepreneurial Internship Program, which is administered by the Department. The Center for Entrepreneurship and Economic Development in the School of Business also places students in paid internships in the Huntsville area. Also, other internship opportunities are available locally and throughout the country.

## STUDENT/PROFESSIONAL ORGANIZATIONS

**American Production and Inventory Control Society (APICS)** – The Educational Society for Resource Management is an international organization offering education and materials in support of the effective use of resources in the manufacturing and service organizations. Our student chapter was established in 1994.

**American Marketing Association** is a chapter of the International Collegiate American Marketing Association. This organization is most committed to providing a forum for students' professional growth and development, and actively encourages their involvement. Membership benefits include the opportunity to participate in valuable business seminars and workshops offered by top marketing professionals and a one-year subscription to *Marketing News*, a publication dedicated to the discussion of the latest topics and issues in the field, and written especially for members.

**Mu Kappa Tau National Honor Society** was chartered in the Spring of 1986 for the purpose of recognizing junior and senior marketing students with an over GPA of 3.25 and above. In addition to promoting and stimulating interest in the area of Marketing, the organization fosters a relationship among its honor students, marketing faculty, and marketing professionals.

**Society for Human Resource Management (SHRM)** - The Society for Human Resource Management is the leading voice of the human resource profession, representing the interests of over 65,000 professional and 6,000 student members from around the world. SHRM provides its membership with services that equip human resource professionals to become leaders and decision-makers within their organizations. The society is a founding member and Secretariat of the World Federation of Personnel Management Association (WFPMA), which links human resource associations in 55 nations.

**Society of Logistics Engineers (SOLE)** is an international organization dedicated to the development and maintenance of professional personnel in the field of logistics. This organization is open to all majors without regard to grade point average. Through this organization, student members are introduced to business leaders in a variety of disciplines prior to graduation.

**Students in Free Enterprise (SIFE)** is a non-profit organization that provides college students the opportunity to learn about the free enterprise system. It also offers students the opportunity to develop leadership, teamwork, and communication skills through learning, practicing, and teaching the principles of the free enterprise system.

## SPECIAL PROGRAMS/AWARDS/RECOGNITIONS

Each academic year, the Department of Management and Marketing recognizes the graduating senior with highest academic achievement in management, marketing, international business, logistics, and management information systems.

## GRADUATION/PROGRAM REQUIREMENTS

- **University General Education Curriculum** (44 semester credit hours): ENG 101, ENG 102, ENG 205, ECO 231, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs, physical education (2) or health or military science.
- **School of Business Core Requirements** (42 semester credit hours): ACC 203, ACC 204, ECO 271, FIN 315, MGT 207, MGT 213, MGT 308, MGT 315, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315. International business course is listed with major requirements.

- **Major Requirements for Business Administration, International Business Concentration** (36 semester credit hours): ACC 219, ACC 461, ECO 446, FIN 487, MGT 332, MGT 458, MGT 465, MKT 464, three hours of non-business electives and nine hours of foreign language.
- **Major Requirements for Business Administration, Logistics Concentration** (36 semester credit hours): LOG 201, LOG 305, LOG 323, LOG 335, LOG 409, LOG 427, two of the following six courses: LOG 407, LOG 422, LOG 424, LOG 426, LOG 428, MGT 397, six hours of business electives, and six hours of non-business electives. All business electives must be 300- or 400-level courses.
- **Major Requirements for Business Administration, Management Information Systems Concentration** (36 semester credit hours): ACC 219, MGT 331, MGT 332, MGT 345, MGT 356, MGT 458, MGT 479, two management information systems electives, three hours of business electives and six hours of free electives outside of business. All business electives must be 300- or 400-level courses.
- **Major Requirements for Management** (36 semester credit hours): ACC 219, MGT 332, MGT 352, MGT 397, MGT 433, MGT 458, two management electives, six hours of upper level business electives and six hours non-business electives. All business electives must be 300- or 400-level courses.
- **Major Requirements for Marketing** (36 semester credit hours): MKT 316, MKT 323, MKT 410, MKT 411, MKT 464, MKT 477, MKT 487, two upper division marketing courses, nine hours of non-business electives. All business electives must be 300- or 400-level courses.
- **Requirements for a Minor in Management, Non-Business Majors** (18 semester credit hours) MGT 207, MGT 315, MGT 332, MGT 413, MGT 433, three hours of non-management business electives approved by the Chair of Management and Marketing. All business electives must be 300- or 400-level courses.
- **Requirements for a Minor in Management, Business Majors** (18 semester credit hours): MGT 332, MGT 352, MGT 397, MGT 433, MGT 458, three hours of management electives. All business electives must be 300- or 400-level courses.
- **Requirements for a Minor in Marketing, Non-Business Majors** (18 semester credit hours): MKT 315, MKT 316, MKT 410, MKT 477, MKT 487, non-marketing business elective approved by the Chair of Management and Marketing. All business electives must be 300- or 400-level courses.
- **Requirements for a Minor in Marketing, Business Majors** (18 semester credit hours): MKT 316, MKT 323, MKT 410, MKT 464, MKT 477, MKT 487.

**BUSINESS ADMINISTRATION**  
**International Business Concentration**  
 122 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>		<i>Second Semester</i>		<i>Sem. Hrs.</i>	
ORI	101	Survival Skills	1	ENG	102	Composition II <sup>1</sup>	3
ENG	101	Composition I <sup>1</sup>	3	MTH	120	Calculus and its App's <sup>2</sup>	3
MTH	112	Pre-Calculus Algebra <sup>1,2</sup>	3			Science Elective	3
		Science Elective	3			Science Elective Lab <sup>3</sup>	1
		Science Elective Lab <sup>3</sup>	1			Fine Arts Elective	3
HIS		History Elective	3			Foreign Language Elective	3
PED		Golf or Tennis	$\frac{1}{2}$			Physical Education <sup>4</sup>	$\frac{1}{2}$
			15				17

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ACC 203 Intro. to Accounting I	3	ACC 204 Intro. to Accounting II	3
ECO 231 Prin. Of Macroeconomics	3	ECO 232 Prin. Of Microeconomics	3
ENG Literature Sequence I	3	ECO 271 Business Statistics I	3
ENG 205 General Speech	3	MGT 207 Legal Environment and Ethis	3
MGT 213 Computer App's. in Business	3	ENG Literature Sequence II	3
Social Science Elective	<u>3</u>	Foreign Language Elective	<u>3</u>
	18		18

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ACC 219 Managerial Accounting	3	MGT 308 Management Info. Systems	3
FIN 315 Principles of Finance	3	MKT 315 Principles of Marketing	3
MGT 315 Principles of Management	3	MGT 332 Org. Behavior and Theory	3
OSM 310 Business Communications	3	OSM 315 Professional Writing	3
Foreign Language Elective	<u>3</u>	Business Elective	<u>3</u>
	15		15

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MGT 413 Production Operations Mgt.	3	MKT 442 Strategic Mgt. And Policy	3
ECO 446 International Trade and Policy	3	MGT 458 International Business	3
MGT 465 International Management	3	ACC 461 Seminar in Int'l. Accounting	3
Non-Business Elective	<u>3</u>	FIN 487 Int'l. Financial Management	<u>3</u>
	12		12

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>Science elective lab must correspond to the science elective.

<sup>4</sup>Health or military science may be taken instead of physical education.

## BUSINESS ADMINISTRATION

### Logistics Concentration

122 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 120 Calculus and its App's <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>1,2</sup>	3	Science Elective	3
Science Elective	3	Science Elective Lab <sup>3</sup>	1
Science Elective Lab <sup>3</sup>	1	Fine Arts Elective	3
History Elective	3	Social Science Elective	<u>3</u>
PED Golf or Tennis	<u>1</u>		16
	15		

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG	Literature Sequence I	3	ENG	Literature Sequence II	3
ACC 203	Intro. to Accounting I	3	ACC 204	Intro. to Accounting II	3
ENG 205	General Speech	3	MGT 207	Legal Environment and Ethics	3
MGT 213	Computer App's. in Business	3	ECO 271	Business Statistics I	3
ECO 231	Prin. Of Macroeconomics	3	ECO 232	Prin. Of Microeconomics	3
PED	Physical Education <sup>4</sup>	<u>1</u>	LOG 201	Introduction to Logistics	<u>3</u>
		16			18

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
LOG 305	Purchasing and Supply Mgt.	3	MGT 308	Management Info. Systems	3
FIN 315	Principles of Finance	3	OSM 315	Professional Writing	3
MGT 315	Principles of Management	3	LOG 323	Transportation Management	3
OSM 310	Business Communication	3	LOG 335	Configuration and Tech. Mgt.	3
MKT 315	Principles of Marketing	<u>3</u>		Business Elective	<u>3</u>
		15			15

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
LOG 409	International Logistics <b>or</b>	3	MGT 442	Strategic Mgt. And Policy	3
MGT 458	International Business	(3)		Logistics Elective	3
MGT 413	Production Operations Mgt	3		Business Elective	3
LOG 427	Quality Management	3		Non-Business Elective	<u>3</u>
	Non-Business Elective	<u>3</u>			12
		15			

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.<sup>3</sup>Science elective lab must correspond to the science elective.<sup>4</sup>Health or military science may be taken instead of physical education.**COURSE DESCRIPTIONS**

- LOG 201      *Introduction to Logistics* – 3 hrs. An introduction to the fundamentals of logistics. The main areas of focus include role of materials management and physical distribution, activities such as customer service, order processing and information flow, transportation alternatives, warehousing, purchasing, inventory, system design and organization, flow of raw materials, work-in-process, facility location, and packaging. **Prerequisite: Sophomore standing.** (Offered Fall and Spring)
- LOG 301      *Provisioning* – 3 hrs. A study of the provisioning aspects of research and engineering, cataloging, requirements determination, acquisition, and physical distribution, along with the most up-to-date concepts, policies, and procedures applicable to provisioning. **Prerequisite: LOG 201.** (Offered Fall)
- LOG 305      *Purchasing and Supply Management* – 3 hrs. A detailed analysis of the interrelationships of military and industrial supply with other major logistics functions of maintenance, procurement, transportation, and marketing. **Prerequisite: LOG 201.** (Offered Spring)
- LOG 322      *Federal Accounting/Budget Cycle/Defense Procurement* – 3 hrs. A study of the principles of underlying fund accounting as they evolve in the federal government and program budgeting in the Department of Defense as implemented by the United States Military Departments. **Prerequisite: LOG 201.** (Offered Spring)

- LOG 323      *Transportation Management* – 3 hrs. An overview of transportation, emphasizing its role, environmental and sociological aspects, economic characteristics, carrier services, regulations and policy goals. **Prerequisite:** LOG 201. (Offered Fall)
- LOG 324      *Contract Law* – 3 hrs. A course on federal contracting, as well as commercial contracting which is essential to employees engaged in contracting activities. This course is designed to provide knowledge and application of the legal principles governing government contracts as they evolved from common law, statutes, regulations, and court and board decisions. Application of law to each step of the federal procurement and federal assistance process, to include: formal advertising procurement by negotiation, inspection, acceptance, delivery, warranties, modification of contracts, equitable adjustment, government furnished property, and disputes. **Prerequisite: None.** (Offered Spring)
- LOG 333      *Configuration Management* – 3 hrs. A study of the process by which the complete physical and functional characteristics of a manufactured item are identified. The establishment of a configuration baseline and how all changes and modifications to item characteristics can be controlled and documented are included. It also addresses total system configuration to include support sub-system equipment. **Prerequisite:** LOG 201. (Offered Fall)
- LOG 334      *Maintenance Management/Engineering Design* – 3 hrs. A detailed analysis of the interrelationships of military and industrial supply with other major logistics functions of maintenance, procurement, transportation, and marketing. This course also covers all aspects of design of maintenance systems and concurrent engineering systems. Additionally, it evaluates plans, programs, and budgets as they relate to maintenance, maintenance control systems and techniques, and the relationship of maintenance to other logistics functions. **Prerequisite:** LOG 201. (Offered Fall)
- LOG 335      *Configuration and Technology Management* – 3 hrs. A study of the process by which the complete and functional characteristics of a manufactured item are identified. A detail analysis of the interrelationships of military and industry supply with other major logistics functions of maintenance, procurement, transportation, and personnel. **Prerequisite:** LOG 201. (Offered Fall)
- LOG 407      *Advanced Procurement* – 3 hrs. A course to provide students with knowledge in contract terminations, extension of delivery times, and management of contracts on default. **Prerequisite: None.** (Offered Fall or Spring)
- LOG 409      *International Logistic* – 3 hrs. This course rigorously examines how to use logistics and transportation to attain a competitive edge in the global environment. It focuses on adding value with effective and efficient use of logistics and transportation in a multi-national firm and multi-cultural environment. Logistics strategy in the multi-national firm: materials management, international sourcing decisions and distribution, international carrier management, port selection, insurance, and freight forwarders. **Prerequisite:** LOG 201. (Offered Fall or Spring)
- LOG 411      *Procurement and Contract Management* – 3 hrs. An exploration of the primary aspects of the procurement and management of material resources necessary for government or business operations. Introduction will be made to broad concepts of procurement and material management to include the generation of a requirement, forecasting, funding, the procurement cycle through award of contract, inventory management and distribution. **Prerequisite: LOG 201 or Co-requisite: LOG 305.** (Offered Fall or Spring)
- LOG 415      *Logistics Support Analysis and Material Acquisition Life Cycle Cost Analysis RCM* – 3 hrs. Engineering management as it applies to the development, direction, and control of the design, performance, and reliability of a system. Concentration on life cycle cost modeling and logistics support analysis. **Prerequisite:** LOG 335. (Offered Fall or Spring)
- LOG 422      *Negotiation Techniques* – 3 hrs. A course designed to develop principles, skills and techniques

necessary for effective negotiation of procurement actions. To be included are verbal and non-verbal mannerisms, communication tools, team approach, buyer's preparation for negotiation, and various tactics and strategies for negotiating. **Prerequisite: None.** (Offered Spring)

- LOG 424      *Contract Administration* – 3 hrs. An intensive review of contract administration functions and responsibilities, beginning when a contract is awarded and continuing until the contract is terminated or delivery is made and all aspects of the contract have been performed. It includes consideration of the roles of small businesses and sub-contractors. **Prerequisite: LOG 407.** (Offered Spring)
  
- LOG 426      *Contract Cost and Price Analysis* – 3 hrs. A course to present the tools and techniques available to the student for cost-price estimating, cost/price analysis, projection techniques, factors affecting profits or fees, the weighted guidelines technique of profit analysis, and application of the learning curve theory. After cost/price analysis has been performed, negotiation strategies and techniques are developed. **Prerequisite: LOG 201.** (Offered Fall)
  
- LOG 427      *Quality Management* – 3 hrs. An overview of the total quality management function, including organization, management, process control, and product reliability and maintainability. **Prerequisites: LOG 201 and LOG 335.** (Offered Spring)
  
- LOG 428      *Integrated Logistics Support and Material Acquisition* – 3 hrs. A capstone course covering all aspects of project/product management of major, non-major, and low value items/systems. Emphasis in on ILS management and planning, systems engineering approach to logistics support management, acquisition strategy, management milestones and scheduling, and life cycle costs. This is a policy course. **Prerequisites: LOG 201, LOG 322, LOG 333, and LOG 427.** (Offered Spring)
  
- LOG 451      *Inventory Management and Production Control* – 3 hrs. A study of the management techniques associated with material management as an element of integrated logistics support in the system/product life cycle management concept. Management of assets from acquisitions through final disposition is considered from cost effectiveness and customer satisfaction viewpoints. **Prerequisite: LOG 305.** (Offered Fall)

**BUSINESS ADMINISTRATION**  
**Management Information System Concentration**  
 122 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 120 Calculus and its App's <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>1,2</sup>	3	Science Elective	3
Science Elective	3	Science Elective Lab <sup>3</sup>	1
Science Elective Lab <sup>3</sup>	1	Fine Arts Elective	3
History Elective	3	Social Science Elective	<u>3</u>
PED Golf or Tennis	<u>1</u>		16
	15		



## Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG Literature Sequence I	3	ENG Literature Sequence II	3
ACC 203 Intro. to Accounting I	3	ACC 204 Intro. to Accounting II	3
ENG 205 General Speech	3	MGT 207 Legal Environment and Ethics	3
MGT 213 Computer App's. in Business	3	ECO 271 Business Statistics I	3
ECO 231 Prin. Of Macroeconomics	3	ECO 232 Prin. Of Microeconomics	<u>3</u>
PED Physical Education <sup>4</sup>	<u>1</u>		15
	16		

## Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ACC 219 Managerial Accounting	3	MGT 345 Database Management Systems	3
FIN 315 Principles of Finance	3	OSM 315 Professional Writing	3
MGT 315 Principles of Management	3	MGT 332 Org. Behavior and Theory	3
OSM 310 Business Communications	3	MGT 331 Info. Syst. Analysis and Design	3
MGT 308 Management Info. Systems	3	MGT 356 Data Comm. And Networking	3
Non-Business Elective	<u>3</u>	MKT 315 Principles of Marketing	<u>3</u>
	18		18

## Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MGT 413 Production Operations Mgt	3	MGT 442 Strategic Mgt. And Policy	3
Mgt. Info. Systems Elective	3	MGT 458 International Business	3
Business Elective	3	MGT 479 Intro. to Object Oriented Prog.	3
Non-Business Elective	<u>3</u>	Mgt. Info. Systems Elective <sup>5</sup>	<u>3</u>
	12		12

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>Science elective lab must correspond to the science elective.

<sup>4</sup>Health or military science may be taken instead of physical education.

<sup>5</sup>Management Information Systems Elective: Approved computer science or management information systems courses.

## MANAGEMENT

122 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 120 Calculus and its App's <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>1,2</sup>	3	Science Elective	3
Science Elective	3	Science Elective Lab <sup>3</sup>	1
Science Elective Lab <sup>3</sup>	1	Fine Arts Elective	3
History Elective	3	Social Science Elective	<u>3</u>
PED Golf or Tennis	<u>1</u>		16
	15		

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG	Literature Sequence I	3	ENG	Literature Sequence II	3
ACC 203	Intro. to Accounting I	3	ACC 204	Intro. to Accounting II	3
ENG 205	General Speech	3	MGT 207	Legal Environment and Ethics	3
MGT 213	Computer App's. in Business	3	ECO 271	Business Statistics I	3
ECO 231	Prin. Of Macroeconomics	3	ECO 232	Prin. Of Microeconomics	<u>3</u>
PED	Physical Education <sup>4</sup>	<u>1</u>			15
		16			

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ACC 219	Managerial Accounting	3	MKT 315	Principles of Marketing	3
FIN 315	Principles of Finance	3	OSM 315	Professional Writing	3
MGT 315	Principles of Management	3	MGT 332	Org. Behavior and Theory	3
OSM 310	Business Communications	3	MGT 397	Management Service	3
MGT 308	Management Info. Systems	<u>3</u>	MGT 352	Entrepreneurship	<u>3</u>
		15			15

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
MGT 413	Production Operations Mgt	3	MGT 442	Strategic Mgt. And Policy	3
MGT 433	Human Resource Management	3	MGT 458	International Business	3
	Business Elective	3		Management Elective <sup>5</sup>	3
	Non-Business Elective	3		Business Elective	3
	Management Elective <sup>4</sup>	<u>3</u>		Non-Business Elective	<u>3</u>
		15			15

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.  
<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.  
<sup>3</sup>Science elective lab must correspond to the science elective.  
<sup>4</sup>Health or military science may be taken instead of physical education.  
<sup>5</sup>Management Electives: Upper-level management courses.

**COURSE DESCRIPTIONS**

- MGT 207      *Legal Environment and Ethics* – 3 hrs. A study of the legal environment as it pertains to profit and/or nonprofit organizations, along with ethical considerations, including social and political influence, as they affect such organization. **Prerequisite: None.** (Offered Fall and Spring)
- MGT 213      *Computer Applications in Business* – 3 hrs. A practical application of user-friendly software packages in processing personal and business documents using microcomputers. Using application programs in word processing, electronic spreadsheet, database management, personal information management, presentation graphics and multimedia. Students will create, manipulate and hyperlink documents. This course also explores basic computer concepts and techniques. **Prerequisite: None.** (Offered Fall and Spring)
- MGT 308      *Management Information Systems* – 3 hrs. A language-independent, introductory course on management information systems. It involves design and development of business systems. Students are exposed to an overview of a process, or a structured approach to the definition of needs, creation of specification, and implementation of new systems. This process overview encompasses an historic summary of the traditional life cycle methodology used for system development. **Prerequisite: MGT 213 or consent of instructor.** (Offered Fall and Spring)

- MGT 315 *Principles of Management* – 3 hrs. A study of the functions of management, which includes planning, organizing, leading and controlling, and the application of management principles in organizations. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- MGT 318 *Business Law* – 3 hrs. This course is designed to cover the following subject matter: professional ethics and legal responsibility of accountants; debtor-creditor relations; government regulation of business; (UCC) uniform commercial code; business organizations, contracts and property. **Prerequisite: MGT 207.** (Offered Fall)
- MGT 331 *Information Systems Analysis and Design* – 3 hrs. Techniques and philosophies of systems analysis are addressed. Included are: traditional versus structured design methods, computer-based tools for systems analysis, workbenches, design and analysis of database systems, maintenance of existing information systems, human/machine interfaces, and security and control. System design, implementation, and methods of systems installation and operation are presented. A system development project is required. **Prerequisite: MGT 213.** (Offered Spring)
- MGT 332 *Organizational Behavior and Theory* – 3 hrs. A study of the behavior of individuals and groups within organizations. The course also examines organizational design and processes. **Prerequisite: MGT 315.** (Offered Fall and Spring)
- MGT 345 *Database Management Systems* – 3 hrs. This course provides an introduction to the design and use of databases in meeting business information needs. Topics include database planning conceptual design, and data administration. The concepts are studied with projects involving the use of a current database management system. **Prerequisites: MGT 213 and MGT 308.** (Offered Fall)
- MGT 352 *Entrepreneurship* – 3 hrs. An overview of entrepreneurship, primarily focusing on the creation and management of small businesses. Several critical functions necessary for their operations such as planning, organizing, directing, controlling, purchasing, production, marketing, and finance are examined. **Prerequisites: MGT 315, FIN 315, and MKT 315.** (Offered Fall)
- MGT 356 *Data Communications and Networking* – 3 hrs. The technical and managerial aspects of telecommunications as they apply to the business environment are discussed. Issues include: communications components and services, local area network architecture, managerial implementations, organizations issues and cost/benefits analysis. **Prerequisite: MGT 213.** (Offered Fall)
- MGT 397 *Management Science* – 3 hrs. This course introduces the students to quantitative techniques in management sciences that are applicable to business. Topics include: Decision Analysis, Linear Programming, Transportation & Assignment Models, Network Models, Integer Programming, Goal Programming, and Project Management. **Prerequisites: ECO 271, MTH 112 and MTH 120.** (Offered Fall and Spring)
- MGT 402 *Independent Study* – 1-3 hrs. A research project accomplished under the supervision of a member of the School of Business faculty. Such projects will involve the detailed study of a topic of particular interest to the business profession, and the results of the study will be documented by a research report. **Prerequisite: Senior standing and permission of the instructor.** (Offered Fall and Spring)
- MGT 410 *Seminar in Management Information Systems* – 3 hrs. An in-depth coverage of a variety of contemporary issues in management information systems. **Prerequisites: MGT 308 and permission of the instructor.** (Offered Spring)
- MGT 412 *Principles of Insurance* – 3 hrs. A survey of basic principles, problems and terminology associated with individual, group and organizational risk management as it relates to the following: the legal aspects of insurance, the risk management process, types of coverage, the insurance market, operating an insurance business and governmental regulation of the profession. **Prerequisite: MGT 315.** (Offered Fall)

- MGT 413 *Production Operations Management* – 3 hrs. An examination of tools and theory of production/operations management. Focus is on the issues related to planning, controlling and designing of production/operations systems. **Prerequisites: MTH 112, MTH 120, and ECO 271.** (Offered Fall and Spring)
- MGT 430 *Advanced Management Seminar* – 3 hrs. An in-depth exploration of current issues and special topics in management. Contents will vary depending on the current status of management practices and methods, and the needs of the students. **Prerequisites: MGT 315 and consent of instructor.** (Offered Fall or Spring)
- MGT 433 *Human Resource Management* – 3 hrs. An examination of the activities and practices related to effective and efficient utilization of human resources in organizations. **Prerequisite: MGT 315.** (Offered Fall and Spring)
- MGT 442 *Strategic Management and Policy* – 3 hrs. A study in developing an understanding of policy formation and decision-making as related to the current business environment. The course objectives are attained through integrating business fundamentals (marketing, production, finance, economics, statistics, etc.) into methods of resolving business problems. The instructional methods including lectures, discussions, and case analysis. **Prerequisites: ACC 204, FIN 315, MKT 315, and MGT 315.** (Offered Fall and Spring)
- MGT 450 *Principles of Real Estate* – 3 hrs. A study of the economic and legal environment within which real estate is transferred and used. Includes the real estate market; contracts; property ownership; financing; brokerage, valuation and government operations. **Prerequisite: None.** (Offered Spring)
- MGT 458 *International Business* – 3 hrs. This course examines the organizational, administrative, marketing, and financial aspects of business-based operations; political, and the legal and economic factors influencing international business, including community relations, business climate, and human resource management issues. **Prerequisite: MGT 315 or MGT 332.** (Offered Fall and Spring)
- MGT 465 *International Management* – 3 hrs. This course examines the international dimensions of management. Includes internationalization of the firm, globalization of industry, international strategy frameworks, strategy implementation requirements, management of relationships with host nations, cross-cultural management and international human resource management. **Prerequisite: MGT 315.** (Offered Spring)
- MGT 473 *Small Business Counseling* – 3 hrs. A practical exposure to the problems and opportunities of small business firms. Student teams are assigned as a counseling unit to assist local business managers in the identification of problems and the formulation of alternative solutions, as well as the identification of areas of opportunity within the participating organizations. **Prerequisites: Senior standing and permission of the instructor: completion of MGT 352 is highly recommended.** (Offered Fall or Spring)
- MGT 479 *Introduction to Object Oriented Programming* – 3 hrs. This course provides a study of the C++ programming language as they pertain to managerial applications. In addition, the course will introduce the use of object-oriented programming methodologies. **Prerequisites: MGT 213 and MGT 308.** (Offered Spring)
- MGT 489 *Systems Development Project* – 3 hrs. This course provides the student with an opportunity to apply the knowledge and skills acquired in other MIS courses towards the development of effective and efficient management information systems. **Prerequisite: Senior standing and permission of the instructor.** (Offered Fall or Spring)

MGT 490 *Management Internship* – 3 hrs. A practical course in integrating classroom theories with actual business practices. **Prerequisite: consent of the instructor.** (Offered Fall and Spring)

## MARKETING

122 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 120 Calculus and its App's <sup>2</sup>	3
MTH 112 Pre-Calculus Algebra <sup>1,2</sup>	3	Science Elective	3
Science Elective	3	Science Elective Lab <sup>3</sup>	1
Science Elective Lab <sup>3</sup>	1	Fine Arts Elective	3
History Elective	3	Social Science Elective	<u>3</u>
PED Golf or Tennis	<u>1</u>		16
	15		

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG Literature Sequence I	3	ENG Literature Sequence II	3
ACC 203 Intro. to Accounting I	3	ACC 204 Intro. to Accounting II	3
ENG 205 General Speech	3	MGT 207 Legal Environment and Ethics	3
MGT 213 Computer App's. in Business	3	ECO 271 Business Statistics I	3
ECO 231 Prin. Of Macroeconomics	3	ECO 232 Prin. Of Microeconomics	<u>3</u>
PED Physical Education <sup>4</sup>	<u>1</u>		15
	16		

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MGT 315 Principles of Management	3	MKT 316 Buyer Behavior	3
FIN 315 Principles of Finance	3	OSM 315 Professional Writing	3
MKT 315 Principles of Marketing	3	MKT 323 Promotions Management	3
OSM 310 Business Communications	3	Marketing Elective	3
MGT 308 Management Info. Systems	<u>3</u>	Non-Business Elective	<u>3</u>
	15		15

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MGT 413 Production Operations Mgt	3	MGT 442 Strategic Mgt. And Policy	3
MGT 477 Marketing Management	3	MGT 411 Advanced Marketing Research	3
MKT 410 Marketing Research	3	MKT 464 Global Marketing	3
Non-Business Elective	3	MKT 487 Strategic Marketing	3
Marketing Elective	<u>3</u>	Non-Business Elective	<u>3</u>
	15		15

<sup>1</sup>Must earn grade of C or better. ENG 103/104 may be substituted for international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>Science elective lab must correspond to the science elective.

<sup>4</sup>Health or military science may be taken instead of physical education.

## COURSE DESCRIPTIONS

- MKT 315 *Principles of Marketing* – 3 hrs. General survey of interactive business activities related to planning product/service offer, price, promotion, and distribution in domestic and global market. **Prerequisite: ECO 200 or 232.** (Offered Fall, Spring and Summer)
- MKT 316 *Buyer Behavior* – 3 hrs. Interdisciplinary approach to the analysis and interpretation of the buying process as it relates to the development of market strategies. **Prerequisite: MKT 315.** (Offered Fall)
- MKT 317 *Retail Management* – 3 hrs. Essential principles and practices used in retail management involving environmental analysis, store location, layout, buying, pricing, and merchandising. **Prerequisite: MKT 315.** (Offered Fall)
- MKT 323 *Promotion Management* – 3 hrs. Analysis of strategic promotional decisions through integrated marketing communication activities and tools. **Prerequisite: MKT 315.** (Offered Spring)
- MKT 324 *Personal Selling* – 3 hrs. Analysis of the principles and practices of selling, the sales process, and sales management. **Prerequisite: MKT 315.** (Offered Fall)
- MKT 325 *Product and Pricing Management* – 3 hrs. Intensive and analytical approach to product management, price determination, and profit models. **Prerequisites: MKT 315 and MTH 112.** (Offered Fall)
- MKT 330 *Principles of Electronic Commerce* – 3 hrs. An introduction and basic overview of e-commerce, including building and maintaining the electronic store front and business interface, electronic shopping, electronic distribution, order processing, payment, and customer relationship maintenance. **Prerequisite: MGT 213 or its equivalent.** (Offered Spring)
- MKT 332 *Merchandising Techniques* – 3 hrs. Analysis of the principles and practices of retail buying and selling operations. **Prerequisites: MKT 315, MKT 317, ACC 203, and MTH 112.** (Offered Spring)
- MKT 341 *Business-to-Business Marketing* – 3 hrs. Analysis of the principles and practices used in industrial markets with emphasis on the purchasing function and business-to-business relationships. **Prerequisite: MKT 315.** (Offered Fall)
- MKT 351 *Marketing Channels* – 3 hrs. Analysis of the principles and practices used in the management of marketing intermediaries with emphasis on physical distribution, storage, and handling of finished goods. **Prerequisite: MKT 315.** (Offered Fall)
- MKT 410 *Marketing Research* – 3 hrs. Principles of scientific research methods in marketing and their application to problem solving and decision-making. **Prerequisites: MKT 315, MTH 112, and ECO 271.** (Offered Fall)
- MKT 411 *Advanced Marketing Research* – 3 hrs. A continuation of MKT 410; focuses on the implementation of the marketing research proposal, measurement instrument selection/design, data collection and analysis, and preparation of the research report. **Prerequisite: MKT 410.** (Offered Spring)
- MKT 423 *Public Relations* – 3 hrs. Study of PR principles used in marketing to enhance brand equity and protect corporate image. Focus on crisis management. **Prerequisites: MKT 315, and MKT 323.** (Offered Spring)
- MKT 441 *Marketing Internship* – 3 hrs. Students are selected for assignment in approved business or public sector organizations under the supervision of marketing faculty. **Prerequisites: Marketing major/minor and instructor approval.** (Offered Fall and Spring)



## SCHOOL OF EDUCATION

Dr. John Vickers, Jr., Interim Dean  
307 Patton Hall  
256-372-5500

### MISSION

Within the context of other units of the University, the School of Education views its mission as that of preparing P-12 teacher candidates and other school personnel to be effective educators as service professionals who can help all students learn. Through its programs of teaching, research, and service, the School of Education's mission is consistent with the land-grant mission of Alabama A&M University.

**Teaching Mission:** To provide P-12 undergraduate and graduate teacher candidates and other school personnel with professional and disciplined-based knowledge, abilities, and dispositions to help all children learn and that lead to a State of Alabama Professional Educator's Certificate.

**Research Mission:** To promote and facilitate the development and dissemination of high-quality knowledge, abilities, and dispositions relating to effective teaching and learning.

**Service Mission:** To establish and maintain collaboration and partnerships that facilitate changes to improve education.

Each teaching, research, and service mission is supported by a set of objectives that give meaning and direction for its attainment.

### OBJECTIVES

#### Teaching Objectives:

1. To create, select, and organize high-quality knowledge, abilities, and dispositions to be transmitted to candidates.
2. To create and maintain a positive and supportive learning environment in which candidates will desire to acquire and process knowledge, abilities, and dispositions presented by the faculty.
3. To engage candidates in a series of supervised teaching acts to develop the requisite proficiencies of an educational service professional.
4. To use a variety of assessment strategies for determining candidate proficiencies and unit effectiveness.

#### Research Objectives:

1. To create and maintain an environment to support the engagement in research and other scholarly pursuits that result in newer and more effective approaches to teaching and learning.
2. To maintain a high level of familiarity with current research and scholarly activity within the field of education.
3. To disseminate up-to-date knowledge, abilities, and dispositions through classroom teaching, professional writing, and through presentations to professional associations and other community groups.
4. To conduct assessments for the improvement of programs and operations of the School of Education.



## **Service Objectives:**

1. To establish and maintain internal and external groups to provide advice and counsel relating to improving educational services.
2. To establish and maintain partnerships with accredited pre-school, elementary, middle, and high schools to improve the quality of teacher preparation.
3. To form alliances with business, cultural, and other community groups in support of public education.

Graduates of the School of Education are Educators as Service Professionals who (1) are proficient and effective communicators, (2) have current professional knowledge and abilities, (3) are able to create and maintain a positive and supportive learning environment, (4) can facilitate learning by all students, (5) can effectively assess student learning, (6) engage in continual professional development, and (7) exhibit professional dispositions at all times.

## **TEACHER EDUCATION OR CERTIFICATION CURRICULA**

A student who is interested in teaching in Alabama public schools should enroll in the curriculum that will prepare him/her for the area or areas he/she wishes to teach. The following information explains the curricula and the type of certificate for which each curriculum prepares the student.

A teacher candidate who satisfactorily completes the curriculum in Agriscience Education, Family and Consumer Sciences Education, Business and Office Education, Technology Education or Technical Education and who meets all other requirements of the University will receive a Bachelor of Science degree and will be eligible to apply for a Class B Secondary Professional Education Certificate, which qualifies him/her to teach in a single major field of concentration.

A teacher candidate who successfully pursues a major in an academic discipline along with a major in Secondary Education curricula and meets all other requirements of the University will receive a Bachelor of Science degree and will be eligible to apply for a Class B Secondary Professional Education Certificate.

The University offers curricula in early childhood, elementary education, middle school education endorsements, special education and N-12 programs in art, music and physical education, each of which is approved by the Alabama State Board of Education for certification of teachers for the particular level. Upon completion of a specific curriculum and all other requirements of the University, the teacher candidate is eligible for a Bachelor of Science degree and may apply for a Class B Professional Education Certificate in the respective area for which he/she has prepared.

## **POLICY STATEMENT**

Teacher Education Programs are approved by the Alabama State Board of Education. Because of the necessity to remain current and the changes that may occur in Certification by the State Board of Education, the School of Education reserves the right to change the requirements in each Teacher Education program as necessary. **It is the sole responsibility of the student to be aware of and to follow his/her State-Approved Teacher Education Program as shown on the appropriate State-Approved Checklist.**

## **WARRANTY STATEMENT**

### *First-Year Teacher Quality Assurance Program*

The School of Education will provide assistance at no cost to teacher candidates who it recommends for certification and who are deemed to be unsatisfactory based on performance evaluations established and approved by the Alabama State Board of Education. A local education agency must report individuals whose performance is judged to be unsatisfactory to the Dean, School of Education within two years after program completion.

### *Stipulations*

The First-Year Teacher Quality Assurance Program is designed to assist those who teach in the State of Alabama and who:

- have successfully completed an approved program of study in Teacher Education;
- have been recommended for certification by Alabama A&M University, and
- have been judged to be performing unsatisfactorily in the classroom through the Professional Education Personnel Evaluation Program of Alabama (PEPE), within two years after program completion.

First year teachers who have met the above criteria are eligible for supervisory assistance and/or remediation from the School of Education faculty. In situations where the Dean of Education or his designee has determined that the assurance program applies, there should not be any cost to either the teacher or the employing school system. The assurance program does not apply in situations where the teacher has been given an out-of-field teaching assignment. If assistance is requested and agreed upon by the School of Education, the school system personnel, and the teacher, assistance will be provided throughout the first two years of teaching.

### *Procedure for Initiating Requests for Assistance*

To initiate a request for assistance when the teacher's performance has been assessed as being unsatisfactory, the school principal or the central office supervisory personnel should contact the Dean of the School of Education at (256) 372-5500.

The Dean, his designees, and the appropriate department chair will determine the nature and extent of the faculty's involvement.

The school principal and/or the supervisory personnel must be willing to share all information pertinent to the first-year teacher's classroom performance.

### *Service to School Systems*

- **Beginning Teacher Assistance Information:** No cost or low cost ways to assist beginning teachers to adjust to their new jobs and to enhance their professional growth.
- **Request for Assistance:** Investigation and assistance in addressing verified performance problems of graduates from the School of Education.
- **Quick Response:** Immediate access to the First-Year Teacher Quality Assurance Program through the Dean's Office of the School of Education.

### *Service to Beginning Teachers*

First-year teachers will have the opportunity to share common concerns and problems, as well as to gather sound, practical and research-based information on topics of concern from their experiences and from knowledgeable professional educators.

## **PROGRAM OFFERINGS AND DEGREES**

Through its program areas, the School of Education provides a variety of programs leading to the Bachelor of Science degree. Teacher certification at the Class B level is offered, along with special courses, conferences, workshops and consultant services for the continuing development of educational programs in the state, region and community.

Teacher candidates may select their areas of concentration from the broad fields of early childhood education endorsements, special education, N-12 programs in art, music, and physical education, and secondary education. Teacher candidates who complete these programs are eligible to receive the Alabama Class B Professional Education Certificate.

The University's Teacher Education programs are approved by the Alabama State Board of Education and are fully accredited by the Southern Association of Colleges and Schools (SACS), and the National Council for the Accreditation of Teacher Education (NCATE).

## **SUBJECT AREA MAJORS**

Under the rules of the Alabama State Department of Education, teachers are licensed to teach only in academic areas endorsed on the professional certificate.

Agriscience Education (6-12)	English Language Arts Education (6-12)
Art Education (P-12)	Mathematics (6-12)
Business/Office Education (6-12)	Music Education (P-12)
Early Childhood Education (P-3)	Special Education
Elementary Education (K-6)	Instrumental
Physical Education (P-12)	Chemistry Education (6-12)
Family and Consumer Sciences (6-12)	General Social Science Education (6-12)
Technology Education (6-12)	Technical Education (6-12)
Physics Education (6-12)	Biology Education (6-12)

### Middle School Endorsement on Elementary Certification (4-8 added to K-6)

Mathematics	General Social Science
English Language Arts	

### Middle School Endorsement on Secondary Certification (4-8 added to 6-12)

English Language Arts	General Social Science
Mathematics	

## PROCEDURE FOR CALCULATING GRADE POINT AVERAGE (GPA) FOR ADMISSION TO A TEACHER EDUCATION PROGRAM

The overall grade point average must be calculated using the following components for each of the following areas:

1. General Studies – **All work used** to meet the general studies requirements in the approved program;
2. Professional Studies – **All work used** in professional studies of the approved program at the recommending institution and all transferred work in the professional studies used to meet program requirements.

### GUIDELINES FOR ADMISSION

Admission to Alabama A&M University does not qualify a student for admission to a Teacher Education Program. Eligibility for admission to a Teacher Education Program is determined after completion of the sophomore year at the University. Admission to the Teacher Education Program serves as the first level of assessment under the conceptual framework, **The Teacher as a Service Professional**. The University has clearly defined criteria for admitting students to a Teacher Education Program. These include the following:

1. The teacher candidate must make formal application for admission to a teacher education program during enrollment in FED 200. The requirements specified on the application must be completed by the end of the sophomore year.
  - A. The teacher candidate must complete the general studies program in their program area and required professional studies with a minimum GPA of 2.50. A grade of “C” or better must be earned in English 101 and 102, Composition I & II.
  - B. The teacher candidate must satisfactorily complete a speech language hearing examination administered by the Communicative Sciences Disorders Program. A nominal fee will be charged.
  - C. The teacher candidate must submit a completed health form from a licensed physician or from the University’s Student Health Center.
  - D. The teacher candidate must satisfactorily complete a grammar test.
  - E. The teacher candidate must be interviewed by a panel of faculty members. Consult your program area for additional and specific requirements.
2. The teacher candidate who transferred from another institution to Alabama A&M University during the Fall semester of 1997, or thereafter, who officially declares teacher education as a major, and who is awarded the sophomore classification shall submit an application and complete the requirements for admission to teacher education by the end of one year of academic course work or by completion of a minimum of 30 semester hours at the university.

Teacher candidates that have not been admitted are restricted to the following courses:

FED	200	Introduction to Teacher Education
HDF	211	Child Growth and Development
FED	212	Human Growth and Development
FED	215	Instructional Technology
SPE	201	Introduction to the Study of Students with Disabilities

3. The teacher candidate who transfers from another institution to Alabama A&M University who officially declares teacher education as a major, and who is awarded junior classification shall submit an application for admission, and complete the requirements for admission to teacher education by the end of one year of academic course work or by completion of a minimum of 30 semester hours at the university. Application must be made.

The latter is designed primarily to assist students in making wise decisions concerning admission to a Teacher Education Program and the selection of a teaching field.

**In no case may a student earn credit or credits in more than the identified semester hours of professional education. Additional credits may be earned after a student has met all of the admission requirements. A departmental advisor and the Teacher Service Center monitor all requirements for admission into a program.**

### **ELIGIBILITY FOR INTERNSHIP**

Teacher candidates desiring to participate in internship (student teaching) shall meet all the Teacher Education Program admission criteria described in the Alabama Administrative Code and be admitted to a program no later than the first day of the internship (student teaching). The internship semester is defined as the semester in which the student is *enrolled* in an internship (student teaching).

Teacher candidates who have a minimum of 2.50 grade point average (GPA) in general studies (**all work used**), in the teaching field (**all work used**), in professional studies (**all work used**) and overall will be eligible for internship.

#### **Prerequisites:**

1. The teacher candidate must have been admitted to a Teacher Education program.
2. The teacher candidate must have completed **100%** of course work.
3. The teacher candidate **must have obtained and** maintained a minimum 2.50 grade point average in general studies, professional studies, the teaching field and overall.\*
4. The teacher candidate must have completed all methods courses and teaching field courses with a minimum grade point average of 2.50 or better.
5. The teacher candidate must have removed all grades of “Incomplete.”
6. The teacher candidate must have repeated all courses in professional studies and the teaching field with grades of “D” and “F.”

**\*A passing grade of “C” or better is required in Eng 101 and 102 Composition I and II, all teaching field and professional education courses. In addition, the Grade Point Average (GPA) in each of these areas must be 2.50 or better.**

### **ALABAMA TEACHERS CERTIFICATE**

This section includes the general minimum requirements of the state for certification. A student who files an application must complete the curriculum approved by the State of Alabama for the University. The completion of the curriculum approved for certification and all other requirements for graduation with a Bachelor’s of Science Degree will qualify a person for a Class B Professional Education Certificate. The area of certification offered by the State (Early Childhood, Elementary, Middle School endorsements, Secondary, or Special Education) is determined by a program pursued to completion.

- a. The teacher candidate must have completed all course requirements that are on the **applicable** State-Approved Checklist for his/her particular major area or areas.
- b. The teacher candidate must have passed the Alabama Prospective Professional Teaching (APPT) test required by the School of Education with a score of 80% or better.
- c. The teacher candidate must have passed his/her area of concentration exit examination required by the School of Education with a score of 75% or better.

**A \$20 nonrefundable application fee in the form of a cashier's check or money order made payable to the State Department of Education must accompany each application for a teacher's certificate.**

**An applicant shall be required to obtain a background clearance to determine any criminal history through a fingerprint review conducted by the Alabama Bureau of Investigation (ABI) and Federal Bureau of Investigation (FBI) prior to the issuance of a certificate or license effective July 1, 1997.**

A separate **\$49 nonrefundable** fingerprint fee in the form of a **cashier's check or money order made payable to the State Department of Education** is required. An applicant who obtains background clearance for issuance of an Alabama certificate and allows the certificate to lapse for more than 90 days (holding no valid Alabama certificate for that 90-day period) will be required to obtain another background clearance for issuance of any certificate or license.

### **CERTIFICATION IN OTHER STATES**

Candidates who are interested in teaching in other states should contact the Teacher Service Center to obtain a listing of the states' requirements for teacher certification. ***All education majors must apply for Alabama certification.***



**DEPARTMENT OF PSYCHOLOGY/COUNSELING, SPECIAL EDUCATION AND  
COMMUNICATIVE SCIENCES AND DISORDERS**

117 Carver Complex North

**MISSION**

The Department of Psychology/Counseling, Special Education and Communicative Sciences and Disorders is committed to provide instruction to undergraduate and graduate teacher candidates, other school personnel, and other university students in the fields of psychology, counseling, special education, and speech and language disorders. In addition to teaching concepts, principles, theories, and methods associated with subject matter content, the faculty places emphasis on integrating technology into teaching. Candidates are prepared for delivering professional educational services to a diverse population of students and clients. The faculty also engages in research and service to a wide range of university, community, and professional organizations.

**PSYCHOLOGY AND COUNSELING PROGRAM AREA**

219 Carver Complex North

256-372-4764

**Orientation and Objectives**

The Program in Psychology and Counseling is committed to providing the undergraduate psychology major with broad-based academic and experiential exposure to the science of behavior. While concerned with the assimilation of knowledge such as theories, principles, and concepts of psychology, competency development in the methodology and application of Social Science is stressed. With a perspective on research and application skills, the program incorporates use of human learning, animal behavior, and psycho-physiological laboratory experiences. The department is committed to the total development of students in their quest to learn psychology and to further the frontiers of the science either as paraprofessionals or through pursuit of graduate training.

The educational/training objectives of the department include:

1. establishing an awareness and appreciation of the historical development of psychology as the science of behavior;
2. developing an understanding of and competency in scientific methodology and research design;
3. developing an understanding of and the ability to competently use appropriate statistical tools of data description, analyses, and interpretation;
4. creating an awareness and understanding of the psychological substrates of behavior and associated research techniques;
5. providing a solid background in understanding the theories, research, and processes of human development, adjustment, and deviancy;
6. developing skills in the use of laboratory instrumentation and techniques, and awareness of concerns involved with human and animal research;
7. instituting an appreciation for and understanding of the principles of learning and motivation, emphasizing both the processes and techniques of maximizing acquisition, retention, and recall;
8. creating an appreciation for the derivation, substrates, lawfulness, maintenance, and modification of behavior;
9. developing an understanding of human behavior in a multicultural global society; and
10. developing skills in using technology.



## Program Offering and Degrees

The program in Psychology and Counseling offers an undergraduate major leading to the Bachelor of Arts Degree in Psychology, a minor in Psychology, and graduate programs leading to the Master of Science Degree in Clinical Psychology, Counseling Psychology, Counseling Psychology (Rehabilitation Concentration), and Guidance and Counseling.

### Special Information

It is desirable that entering undergraduates have a strong background in science, math, English, history, social studies, and a foreign language. Graduation from the psychology program requires a minimum grade of "C" in all psychology classes taken. The Psychology major must also choose a minor subject area.

A departmentally sponsored and student-governed Psychology Club for interested students exists, and Psychology majors and minors are encouraged to participate. The Program also has charter membership in the National Honor Society in Psychology (PSI-CHI).

Information on available financial assistance is provided through the Office of Financial Aid, and jobs or further education information is available through both the program area and the Office of Career Development Services and Placement.

Advisement services are available through the program area and from the University Academic Advising Center.

## PSYCHOLOGY (NON-TEACHING)

127 Semester Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills I	1	ENG 102 Communication Skills II	3
ENG 101 Communication Skills I	3	HIS 102 World History	3
HIS 101 World History	3	CMP 101 Fund of Computers	3
MUS 101 Music Appreciation	3	ART 101 Art Appreciation	3
BIO 101 General Biology	3	BIO 102 General Biology	3
BIO 101L General Biology	1	BIO 102L General Biology Lab	<u>1</u>
PED 101 Fitness for Life & PE Activity <b>or</b>	2		16
HED 101 Personal/Comm Hlth	<u>(2)</u>		
	16		

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I	3	ENG 204 World Literature II	3
PSY 201 General Psychology	3	SOC 201 Intro to Sociology	3
101 <sup>1</sup> Elem Foreign Lang I	3	PHL 201 Intro to Philosophy	3
MTH 112 Pre-Calculus	3	102 <sup>1</sup> Elem Foreign Lang II	3
ENG 205 General Speech	3	PSY 301 Elementary Behavioral Statistics	<u>3</u>
General Elective	<u>3</u>		15
	18		

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ECO 200	Basic of Economics	3	202	<sup>1</sup> Interm Foreign Lang II	3
201	<sup>1</sup> Interm Foreign Lang I	3	PSY 416	Experimental Psychology	3
PSY 202	Hist & Sys of Psychology	3	PSY 416L	Experimental Psychology Lab	1
PSY 307	Intro to Research	3	PSY	Psychology Elective	3
PSY	Psychology Elective	<u>3</u>		Minor Courses	<u>6</u>
		15			16

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
PSY 415	Physiological Psychology	3	PSY 404	Seminar in Psychology	3
PSY 415L	Physiological Psych Lab	1	PSY 471	Abnormal Psychology	3
PSY	Electives	6	PSY	Elective	3
	Minor Courses	<u>6</u>		Minor Courses	<u>6</u>
		16			15

<sup>1</sup>French, German, or Spanish

**Psychology Electives**

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
PSY 303	Applied Psychology	3
PSY 304	Developmental Psychology	3
PSY 320	Cognitive Psychology	3
PSY 330	Social Psychology	3
PSY 340	Principles of Learning	3
PSY 360	Personality Theories	3
PSY 402	Psychology of Adjustment	3
PSY 403	Educational Psychology	3
PSY 405	<sup>1</sup> Individual Study in Psychology	3
PSY 406	Industrial Psychology	3
PSY 410	Helping Skills and Techniques	3
PSY 421	<sup>2</sup> Psychology Internship	3
PSY 422	<sup>2</sup> Psychology Internship	3
PSY 423	Adolescent Psychology	3
PSY 482	Human Sexuality	3
SOC 330	Social Psychology	3

<sup>1</sup>With permission of Instructor

<sup>2</sup>Open only to senior psychology majors with permission of Instructor

**IMPORTANT NOTES**

- Any assigned remedial courses (e.g., reading, mathematics, or English) are in addition to the required psychology curriculum. Credit hours earned in these courses can not be applied toward the total hours needed to fulfill degree requirements.
- Grades lower than "C" will not be counted toward the major requirements.
- All Psychology majors must have a minor area of concentration.
- A minimum total of 127 semester hours is required for graduation.
- The Psychology major requires 38 semester hours in psychology—excluding General Psychology (PSY 201). Fifteen of these 38 semester hours will be psychology electives.

6. Individual Study (PSY 405) and Psychology Internship (PSY 421, PSY 422) require the permission of the student's advisor prior to enrollment.
7. Seminar in Psychology (PSY 404) is open only to junior and senior psychology majors

### **COURSE DESCRIPTION**

- PSY 201      *General Psychology* – 3 hrs. A survey course designed to introduce basic concepts, principles, and phenomena in the science of behavior. Basic topics of psychological measurement, scientific methodology, human growth and development, sensory systems, motivation, emotion, perception, learning, and behavioral deviancy are presented. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- PSY 202      *History and Systems of Psychology* – 3 hrs. A study of the historical origins of psychology and the development and content of systematic philosophical and scientific bases. Primary schools of psychological thought are considered in terms of content and contribution to contemporary psychology. **Prerequisite: PSY 201.** (Offered Fall)
- PSY 301      *Elementary Behavioral Statistics* – 3 hrs. Basic and essential statistical concepts are introduced and applied to behavior measurements. Descriptive tools of central tendency, variability, and standard scores are considered, as well as correlation and basic inferential tools of the t-test and simple analysis of variance. **Prerequisite: PSY 201.** (Offered Fall, Spring, and Summer)
- PSY 303      *Applied Psychology* – 3 hrs. A survey course emphasizing the application of basic principles of behavior to life situations. Of specific concern in such application is consideration of business, industry, advertising, public relations, consumer, and educational situations. **Prerequisite: PSY 201.** (Offered Summer and Fall)
- PSY 304      *Developmental Psychology* – 3 hrs. An introduction to child behavior and development from birth to old age. Primary emphasis is placed upon development of learning, motor behavior, neural growth, language, perception, cognition, and socialization relative to both biological and environmental influences. **Prerequisite: PSY 201.** (Offered Fall and Spring)
- PSY 307      *Introduction to Research* – 3 hrs. This course is an introduction to basic concepts of scientific research methodology and statistical analysis. Individualized research projects allow students to collect and analyze data, using relevant methodological and statistical concepts. Students will deal with general procedural problems and the writing of research reports. **Prerequisites: PSY 201 and PSY 301.** (Offered Fall)
- PSY 320      *Cognitive Psychology* – 3 hrs. This course is an introduction to the study of the relationship between mental processes. Major topics discussed include information processing, perception, thought and memory. (Offered Fall)
- PSY 330      *Social Psychology (SOC 330)* – 3 hrs. A survey of group phenomena and the influence of groups on individual behavior. Key topics reviewed will include the self, interpersonal communication, attitudes and aggression. The dynamics of group behavior will also be explored. **Prerequisite: PSY 201.** (Offered Spring)
- PSY 340      *Principles of Learning* – 3 hrs. An empirical and theoretical study of the basic principles of conditioning and phenomena of the learning process. Emphasis is placed on classical conditioning, operant conditioning, and observational practices. Primary phenomena considered include acquisition, consolidation, transfer, extinction, spontaneous recovery, and relearning. Supplementary consideration of theoretical accountability of basic phenomena will be included. **Prerequisite: PSY 201.** (Offered Fall)

- PSY 360 *Personality Theories* – 3 hrs. This course focuses on the major theories of personality in psychology. Emphasis is placed upon the original theorists, as well as the development and application of each major theory. (Offered Fall)
- PSY 402 *Psychology of Adjustment* – 3 hrs. A survey course presenting human behavior as a constant adjustment to internal and external conditions. Basic adjustive processes and responses are discussed with emphasis on reactions to frustration and conflict. Defense mechanisms and behavioral abnormalities are also considered. **Prerequisite: PSY 201.** (Offered Spring)
- PSY 403 *Educational Psychology (EDU 403)* – 3 hrs. An analysis of the principles of classroom learning. The major concepts, theories, and research of the acquisition of knowledge and interpersonal social skills are emphasized, with attention given to measurement and evaluation. Educational application of learning principles is stressed. **Prerequisite: PSY 201.** (Offered Fall, Spring, and Summer)
- PSY 404 *Seminar in Psychology* – 3 hrs. A life-oriented consideration of problems and issues in contemporary psychology. Discussion areas include graduate school opportunities, career opportunities, overviews of specific areas of psychology, trends in research and applications, historical significant contributions to psychological knowledge, and topics of student-specified interest. **Required of majors and open only to juniors and seniors. Prerequisite: PSY 201 and junior or senior standing.** (Offered Spring)
- PSY 405 *Individual Study in Psychology* – 3 hrs. A course designed to encourage, facilitate, and guide individual research in specific interest areas dictated by the advanced psychology student. A one-to-one student-faculty ratio is provided to allow individual attention. **Open only to senior majors with the permission of Instructor. Prerequisite: PSY 201.** (Offered Fall and Spring)
- PSY 406 *Industrial Psychology* – 3 hrs. This course emphasizes the role of human factors in the industrial world. It addresses the problems of training personnel and improving working conditions. **Prerequisite: PSY 201.** (Offered Fall and Spring)
- PSY 410 *Helping Skills and Techniques* – 3 hrs. This is a fundamental course which teaches basic helping skills to students who will be working with others in some "helping" capacity. Students learn how and when to apply listening and communication skills, action skills, helping strategies, and intervention strategies. (Offered Spring)
- PSY 415 *Physiological Psychology* – 3 hrs. A functional analysis of the internal systems with process sensory input. Specific attention will be given the CNS and PNS processing of information and the endocrine system as it influences behavior. Topics include the composition and functions of neural systems and the relationship of motivation, emotions, and personality to internal processes. **Prerequisite: PSY 201 Co-requisite: PSY 415L.** (Offered Fall)
- PSY 415L *Physiological Psychology Lab* – 1 hr. Various laboratory exercises on the various topics covered. **Prerequisite: PSY 201; Co-requisite: PSY 415.** (Offered Fall)
- PSY 416 *Experimental Psychology* – 3 hrs. An application of scientific methodology to investigation of basic behavioral phenomena and principles. Controlled laboratory experiences are designed to illustrate the derivation, testing, and evaluation of psychological knowledge. Empiricism is stressed in laboratory investigation of motor learning, verbal learning, psychophysics, parapsychology, and individual differences. Various research designs and techniques are considered. **Prerequisites: PSY 201 and PSY 307; Co-requisite: PSY 416L.** (Offered Spring)
- PSY 416L *Experimental Psychology Lab* – 1 hr. Laboratory investigation of verbal learning, psychophysics, parapsychology, and individual differences. **Prerequisite: PSY 201; Corequisite: PSY 416.** (Offered Spring)

- PSY 421      *Psychology Internship I* – 3 hrs. Field placement of advanced standing psychology majors. This course is designed to provide supervised practical experience on a paraprofessional level in a clinical, education, or research setting of relevance to psychology. Open only to senior majors with permission of advisor. **Prerequisite: PSY 201.** (Offered Fall, Spring and Summer)
- PSY 422      *Psychology Internship II* – 3 hrs. Same as PSY 421, but allows additional hours credit. **Prerequisite: PSY 201.** (Offered Fall, Spring and Summer)
- PSY 423      *Adolescent Psychology* – 3 hrs. This course is designed to study the developmental changes between 12 and 19 years of age. Topics include physical, mental, emotional, social, and moral aspects of development as well as factors that influence development. Various technological orientations will be discussed and integrated. **Prerequisite: PSY 201.** (Offered Spring)
- PSY 471      *Abnormal Psychology* – 3 hrs. An introduction to deviant behavioral patterns. Primary attention is devoted to etiology, dynamics, incidence, prognosis, and treatment of human psychopathology. The concept of normality is considered in terms of social norms, socioeconomic, and group pressures. Conventional therapeutic measures are discussed, as well as contemporary movement in mental health and outpatient treatment. **Prerequisite: PSY 201.** (Offered Spring and Summer)
- PSY 482      *Human Sexuality* – 3 hrs. This is an intense study of the physiological, psychological, sociological, and ethical considerations of human sexuality. **Prerequisite: PSY 201.** (Offered Spring)

### SPECIAL EDUCATION PROGRAM AREA

117 Carver Complex North  
(256) 372-5544

Throughout the United States there is a great demand for teachers who have had academic training and professional experience with exceptional children. **The certification provides a four-year course of study leading to a baccalaureate degree in Special Education with eligibility to apply for Alabama Class B certification in Early Childhood Special Education, Collaborative Teacher (K-6) and Collaborative Teacher (6-12).**

This curriculum is designed to prepare future teachers of exceptional children. These teacher preparation programs provide opportunity for development of the following:

- A. an understanding of the conditions which make children exceptional, and the associated behavioral problems;
- B. basic knowledge of methods of organization, curriculum development, and instructional procedures for exceptional children; and
- C. experience with exceptional children through a variety of practicum activities.

A score of 300 on the Alabama Basic Skills Test, a speech language-hearing test, and an interview are required prior to a student's full admission to all programs. In addition to teacher education programs, there is a non-certification program in Speech-Language Pathology. This program will prepare a student for graduate study and for work in a clinical setting but will not qualify him or her for a teaching certificate in the State of Alabama.

Requirements for majors in Special Education are as follows:

- A. Students following a curriculum designed to prepare them for careers in Special Education must make a minimum grade of 2.5 in all courses in special education, professional education, and general education.
- B. Students majoring in Special Education are responsible for providing their own transportation as related to their particular field experience.
- C. Formal admission to a teacher education program and permission of instructor are not required for registration.

**EARLY CHILDHOOD SPECIAL EDUCATION**

128 Semester Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs</i>
ORI 101	Survival Skills I	0-1	ENG 102	Composition II	3
ENG 101	Composition I	3	MTH 113	Pre-Calculus Trig <b>and/or</b>	3
MTH 110	Finite Math	3	MTH 307	Geometry <b>and/or</b>	(3)
MTH 112	Pre-Calculus Algebra	3	MTH 304	Math for Elem Tchrs <b>and/or</b>	(3)
BIO 101	General Biology I/Lab I	4	MTH 107	Modern Math	(3)
HED 101	Personal & Comm Hlth <b>or</b>	2	ART 101	Art Appreciation <b>or</b>	3
PED	PE Activity <b>or</b>	(2)	MUS 101	Music Appreciation	(3)
MSC 101	Military Science	(2)	BIO 102	General Biology II/Lab II	4
HIS 101	World History I	<u>3</u>	HIS 203	Fnd. of Amer. History & Govt.	<u>3</u>
		19			16

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
ENG 203	World Literature I	3	ENG 204	World Literature II	3
PHY 101	Physical Science I/Lab I	4	PHY 102	Physical Science II/Lab II	4
FED 200	Introduction to Education	2	ECO 200	Basic of Economics	3
SOC 102	Intro to Sociology <b>or</b>	3	HDF 211	Human Growth/Development	3
PHL 201	Intro. to Philosophy <b>or</b>	(3)	SPE 209	Introduction to ECSE	3
PSY 201	General Psychology	(3)	SPE 205	Language Development	<u>3</u>
SPE 201	Intro to Study Excep. Child	<u>3</u>			19
		15			

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
ECH 303	M/M of Early Childhood	3	SPE 426	Collaborative Consultation	3
FED 215	Instructional Technology	3	SPE 306	M/M of Early Child. Special Ed.	3
ENG 205	General Speech	3	SPE 326	Mgt of Classroom Behavior	3
PSY 403	Educational Psychology	3	FED 300	Foundations of Education	2
SPE 304	Parent and Family Assessment	<u>3</u>	ECH 303	M/M in Early Childhood	3
		15	ECH 300	Artistic Expression through Art, Music & Movement	<u>3</u>
					17

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
FED 401	Tests and Measurements	3	SPE 495	Internship	<u>12</u>
SPE 309	Adapt Tech & Meth	3			12
SPE 327	Assessment in ECSE	3			
SPE 328	Learning Strategies	3			
SPE 403	IEP/IFSP Writing	<u>3</u>			
		15			

## COLLABORATIVE (K-6)

128 Semester Hours

### Freshman Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs</i>
ORI 101	Survival Skills I	1	ENG 102	Communication Skills II	3
ENG 101	Communication Skills I	3	MTH 113	Pre-Calculus Trig <b>and/or</b>	3
MTH 110	Finite Math	3	MTH 107	Modern Math <b>and/or</b>	(3)
MTH 112	Pre-Calculus Algebra	3	MTH 305	Math for Elem Tchrs <b>and/or</b>	(3)
BIO 101	General Biology I/Lab I	4	MTH 307	Geometry	(3)
HED 101	Personal & Com Hlth <b>or</b>	2	ART 101	Art Appreciation <b>or</b>	3
PED	PE Activity <b>or</b>	(2)	MUS 101	Music Appreciation	(3)
MSC 101	Military Science	<u>(2)</u>	BIO 102	General Biology II/Lab II	<u>4</u>
		16			16

### Sophomore Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
ENG 203	World Literature I	3	ENG 204	World Literature II	3
PHY 101	Physical Science I/Lab I	4	HIS 203	Fnd. of American Hist & Govt	3
HIS 101	World History I	3	FED 215	Instructional Technology	3
SOC 201	Intro to Sociology <b>or</b>	3	HDF 211	Human Growth/Development	3
PHL 201	Introduction to Philosophy <b>or</b>	(3)	PHY 102	Physical Science II/Lab II	<u>4</u>
PSY 201	General Psychology	(3)			16
FED 200	Introduction to Education	2			
SPE 201	Intro to Except Children	<u>3</u>			
		18			

### Junior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
EDU 305	M/M of Tchg Mathematics	3	CSD 421	Multicultural Issues	3
FED 300	Foundations of Education	2	FED 404	Tests & Measurements	3
ELE 303	M/M of Teaching Science/Hlth	3	ECO 200	Basic Economics	3
ENG 205	General Speech	3	SPE 303	Assessment of Child K-6	3
ELE 302	Methods of Social Studies	3	SPE 426	Collaborative Consultation	3
SPE 328	Learning Strategies	<u>3</u>	SPE 326	Mgt of Classroom Behavior	<u>3</u>
		17			18

### Senior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
SPE 410	Counseling Parents	3	SPE 495	Internship (K-6)	<u>12</u>
PSY 403	Educational Psychology	3			12
SPE 403	IEP/IFSP Writing	3			
SPE 405	M/M Tchg Child w/Dis	3			
SPE 401	Corrective Reading	<u>3</u>			
		15			

**COLLABORATIVE TEACHER (6-12)**

126 Semester Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs</i>
ORI 101	Survival Skills I	0-1	ENG 102	Communication Skills II	3
ENG 101	Communication Skills I	3	MTH 112	Pre-Calculus Algebra	3
ENG 203	World Literature I	3	HIS 203	Fnd of Amer. History & Govt.	3
BIO 101	General Biology I/Lab I	4	ART 101	Art Appreciation OR	3
HED 101	Personal & Comm Health OR	2	MUS 101	Music Appreciation	<u>(3)</u>
PED	PE Activity OR	(2)			12
MSC 101	Military Science	(2)			
HIS 101	World History I	<u>3</u>			
		16			

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
SPE 201	Intro to Study Except Child	3	ENG 204	World Literature II	3
PHY 101	Physical Science I/Lab I	4	PSY 201	General Psychology	3
FED 200	Introduction to Education	2	ECO 200	Basic of Economics	3
FED 215	Instructional Technology	3	FED 212	Human Growth/Development	3
SED 307	Principles of Teaching	<u>3</u>	SED 422	M/M Tchng Math in Sec Schs	3
		15	SOC 201	Intro to Sociology	<u>3</u>
					18

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
SED 409	Reading in Content Area	3	FED 404	Tests & Measurements	3
FED 300	Foundations of Education	3	SED 424	Tchng Science in Sec Schools	3
SED 423	M/M of Teaching Social Studies	3	SED 421	M/M Tchng Eng in Sec. Sch.	3
ENG 205	General Speech	3	SPE 436	Assessment in Sec. Sch	3
SPE 319	Transitioning Across the Grades	2	SPE 426	Collaborative Consultation	3
SPE 435	Learning Strategies for Adoles	<u>3</u>	SPE 431	Behavior Mgt for Sec Tchrs	<u>3</u>
		17			18

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
SPE 430	M/M of Content Area Inst	3	SPE 495	Internship (6-12)	<u>12</u>
PSY 403	Educational Psychology	3			12
SPE 403	IEP/IFSP Writing	3			
SPE 432	M/M Functional Curriculum	3			
AGB 401	Methods of Tchng Agriscience	3			
CSD 421	Multicultural Issues	<u>3</u>			
		15			



## COURSE DESCRIPTIONS

- SPE 201 *Introduction to the Study of Exceptional Children* – 3 hrs. An overview of the various exceptionalities and an introduction to basic special education services and procedures. **Practicum is required. Prerequisite: None.** (Offered Fall, Spring and Summer)
- SPE 205 *Language Development* – 3 hrs. A course emphasizing the study of normal language development with emphasis on the development of the phonological, syntactic, and semantic systems in children. **Prerequisite: None.** (Offered Spring)
- SPE 209 *Introduction to Early Childhood Special Education (ECSE)* – 3 hrs. Covers the rationale for ECSE and provides a comprehensive overview of major principles and practices relating to the provision of services to young children with disabilities. Procedures for screening, diagnosis, and educational assessment are included. Transdisciplinary and interdisciplinary team processes are emphasized throughout the course. **Prerequisite: None.** (Offered Fall)
- SPE 303 *Administration and Interpretation of Diagnostic Techniques* – 3 hrs. Development of the essential skills required to diagnose skills deficits, and to plan and implement educational strategies to remediate deficits experienced by exceptional learners. Practical experiences using assessment techniques will be stressed. **Practicum required. Prerequisite: SPE 201.** (Offered Fall)
- SPE 304 *Parent and Family Assessment* – 3 hrs. Methods in family assessment and evaluation as well as methods in parent counseling and support are included. Techniques and programs of parent training and education are important aspects of this course. **Prerequisite: None.** (Offered Spring)
- SPE 306 *Methods and Materials in ECSE* – 3 hrs. Designed to give beginning teachers requisite skills in designing, developing, implementing, and evaluating methods and materials to be used with preschool children with disabilities. **Practicum required. Prerequisite: SPE209.** (Offered Spring)
- SPE 309 *Adaptive Techniques and Methods in ECSE* – 3 hrs. A study of techniques which are necessary to adapt early childhood education curricula to the specialized needs of the birth to five-year old with disabilities. Course content includes the development of skills in the areas of technological adaptations, working with aides and volunteers, transdisciplinary teaming, behavior management techniques, task analysis, and concept analysis. **Practicum required. Prerequisite: SPE 209.** (Offered Fall)
- SPE 319 *Transitioning Planning for Students with Special Needs* – 3 hrs. The historical development of lifespan planning, model programs for the handicapped, techniques for developing and implementing a program and instructional strategies. **Prerequisite: None.** (Offered Fall)
- SPE 326 *Management of Classroom Behavior* – 3 hrs. A study of the application and skills in the use of behavior management skills, including direct observations, behavioral interventions, analysis, and subsequent program modification based upon analysis. **Prerequisite: None.** (Offered Spring and Fall)
- SPE 328 *Learning Strategies* – 3 hrs. This course is designed to provide teachers of students with mild disabilities with current strategies for assessing student learning styles and modifying instructional methods for optimal learning. **Prerequisite: None.** (Offered Fall)
- SPE 401 *Corrective Reading* – 3 hrs. Several approaches to the teaching of reading to slow learning children are covered. Students will prepare and implement individual reading plans, develop teacher-made materials, and select and purchase reading materials. **Prerequisite: None.** (Offered Fall)
- SPE 403 *IEP/IFSP Writing* – 3 hrs. A course which focuses on the legal requirements and the procedures and techniques for developing IEPs from referral to implementation. **Prerequisite: None.** (Offered Fall)

- SPE 495 *Directed Teaching in Special Education* – 12 hrs. A course consisting of twelve weeks of full-time teaching under direct supervision of certified experienced teachers in Special Education classes in off-campus public schools. Weekly meetings are held on campus with university supervisors. **Prerequisite: Admission to the Teacher Education Program.** (Offered Fall and Spring)
- SPE 410 *Counseling with Parents of Exceptional Children* – 3 hrs. Discussion and application of the rationale for positive communication and interaction with parents and techniques of facilitation. **Prerequisite: None.** (Offered Spring)
- SPE 426 Collaborative Consultation – 3 hrs. This course is designed to provide prospective teachers (ECSE, Collaborative K-6 and Collaborative 1-6) knowledge and skills required to successfully facilitate intervention strategies with regular classroom teachers and other support personnel in meeting the needs of students with disabilities. This course also serves as a professional elective for prospective teachers of early childhood, elementary, and secondary students. (Offered Spring)
- SPE 430 Materials and Methods of Content-Area Instruction – 3 hrs. This course is designed to give beginning teachers requisite skills in designing, developing, implementing and evaluating methods and materials of content area instruction for children and adolescents with disabilities in grades 6-12. (Offered Fall)
- SPE 431 Behavior Management for Secondary Teachers – 3 hrs. A study of the application and skills in the use of behavior management skills, including direct observations, behavioral interventions, analysis, and subsequent program modification based upon analysis. **Prerequisite: None.** (Offered Spring and Fall)
- SPE 432 Material and Methods of Functional Curricula – 3 hrs. This course is designed to give beginning teachers requisite skills in designing, developing, implementing and evaluating methods and materials of functional curricula for children and adolescents with disabilities in grades 6-12. (Offered Spring)
- SPE 435 Learning Strategies for Adolescents (Grades K-6) – 3 hrs. This course is designed to provide teachers of children and adolescents with disabilities with current strategies for assessing student learning styles and modifying instructional methods for optimal learning. (Offered Fall)
- SPE 436 Assessment of Secondary Students – 3 hrs. Development of the essential skills required to diagnose skills deficits, and to plan and implement educational strategies to remediate deficits experienced by exceptional learners. Practical experiences using assessment techniques will be stressed. **Prerequisite: SPE 201.** (Offered Fall)

## COMMUNICATIVE SCIENCES & DISORDERS

22 Old Council Training Building  
(256) 372-5541

The field of Speech-Language Pathology involves the identification, assessment and treatment of a wide variety of communication disorders (congenital, developmental, and acquired) in both children and adults. Such disorders may include phonological (articulation), language, voice, fluency (stuttering) and hearing problems. Speech-Language Pathologists also participate in the assessment and management of clients with swallowing difficulties. Speech-Language Pathologists work in a variety of locations including hospitals, community health centers, schools, universities, other special institutions, and in private practice.

The Communicative Sciences and Disorders (CSD) undergraduate program at Alabama A&M University is a pre-professional program designed to prepare the student for entry into graduate program study. The undergraduate program in CSD leads to the Bachelor of Science degree through the School of Education. The student must complete no fewer than 126 semester hours of work. As admission to graduate programs in the field of speech-language pathology is very competitive, students are required to maintain a minimum 3.0 grade point average on a 4.0 scale in the major area of study, with a minimum 2.5 grade point average overall. Upon completion of the sophomore year, students will be evaluated for permission to take upper division courses. Completion of this program provides the required course work and practicum experiences needed for entering a graduate training program in speech-language pathology.

### COMMUNICATIVE SCIENCES AND DISORDERS CURRICULUM

126 Semester Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills I	1	BIO 102 General Biology II	3
BIO 101 General Biology I	3	BIO 102L General Biology Lab II	1
BIO 101L General Biology Lab I	1	PHY 101 Physical Science	3
ENG 101 Composition I	3	PHY 101L Physical Science Lab	1
HED 101 Personal & Comm. Health	2	ENG 102 Composition II	3
HIS 101 World History I	3	MUS 101 Music Appreciation	3
MTH 112 Pre-Calculus Algebra <b>or</b> Higher Math	3 (3)	PED 103 Fitness for Life <b>and</b> PE Elective <b>or</b>	1 1
	16	MSC 101 Military Science	(2)
			16

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
CSD 202 Survey Comm. Disorders	3	CSD 205 Language Dev. for SLP	3
CSD 203 Phonetics	3	CSD 207 Speech & Hearing Science	2
CSD 204 Anat. & Phys. Speech Mech.	3	CSD 215 Articulation	3
ENG 203 World Lit I	3	ENG 204 World Lit II	3
SOC 201 Intro. to Sociology	3	ENG 205 General Speech	3
	15	HDF 211 Child Growth & Dev. <b>or</b> Any 100, 200, or 300 level Human/Child Growth & Development	3 (3)
			17

**Junior Year**

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
ART 101	Art Appreciation	3	CSD 219	Computer in Comm Dis	3		
CSD 307	Principles of Diagnostics	3	CSD 310	Clinical Procedures	3		
CSD 308	Basic Audiology	3	CSD 312	Language Intervention	2		
CSD 324	Lang. & Audio Perception	3	CSD 323	Comm. for Hearing Impaired	3		
PSY 201	General Psychology	<u>3</u>	CSD 332	Augmentative Comm.	3		
		15	CSD 414	Advanced Speech Pathology	<u>3</u>		
					17		

**Senior Year**

<i>First Semester</i>			<i>Sem. Hrs.</i>	<i>Second Semester</i>			<i>Sem. Hrs.</i>
CSD 321	Practicum I	3	CSD 406	Practicum II	3		
CSD 402	Manual Communication	3	CSD 421	Multicultural Issues in Com.	3		
CSD 417	Methods/Material SLP	3	CSD 423	Sp. & Lang. Problems in Aged	3		
CSD 420	Speech & Language Assess.	3	ENG 304	Advanced Composition	3		
ECO 200	Basic Economics	<u>3</u>	SPE 326	Mgmt Classrm. Behavior	<u>3</u>		
		15			15		

**COURSE DESCRIPTIONS**

- CSD 202     *Survey of Communication Disorders* – 3 hrs. A broad survey of the field of speech-language pathology and audiology. **Practicum is required. Prerequisite: None.** (Offered Fall)
- CSD 203     *Phonetics* – 3 hrs. A study of speech sounds in the English language and development of skills using the International phonetic alphabet. **Prerequisite: None.** (Offered Fall)
- CSD 204     *Anatomy and Physiology of Speech Mechanism* – 3 hrs. A study of the structure and functioning of organs, muscles, and nerves of speech and the mechanisms involved in normal speech and language production. **Prerequisite: None.** (Offered Fall)
- CSD 205     *Language Development* – 3 hrs. A course emphasizing the study of normal language development with emphasis on the development of the phonological, syntactic, and semantic systems in children. **Prerequisite: None.** (Offered Spring)
- CSD 207     *Speech and Hearing Science* – 2 hrs. An overview of the physiology, acoustics, and perception of speech. **Prerequisite: None.** (Offered Spring)
- CSD 215     *Articulation and Phonological Disorders* – 3 hrs. Professional terminology, classifying problems, etiologies, appropriate diagnostic and therapeutic procedures, and associated problems. **Prerequisites: CSD 202, CSD 203, and CSD 204.** (Offered Spring)
- CSD 219     *Computers in Communication Disorders* – 3 hrs. A course designed to acquaint the student with the elements of PC operating system as well as software applications such as word processing, database and spreadsheets. It will emphasize traditional, current and emerging instructional technology in the therapy room. Students will learn various techniques for designing clinical therapy instructional materials, applying and integrating technology in therapy, and using microcomputer and software applications to promote effective therapy management. This course offers the opportunity to design lessons, select appropriate media formats, and conduct informal and formal evaluation of the effectiveness of selected media on the learning process. **Prerequisite: None.** (Offered Spring)
- CSD 307     *Principles of Diagnostic Assessment in Communication Disorders* – 3 hrs. Methods of classifying communication disorders for assessment purposes. Utilization of diagnostic tests, test interpretation,

and report writing of test results on speech and language disorders. **Prerequisites: CSD 203, CSD 205, and CSD 215.** (Offered Fall)

- CSD 308 *Basic Audiolog* – 3 hrs. A study of the anatomy and physiology of the ear, description of types of hearing losses, and basic tests in pure tone and speech audiometry. A practicum is required. **Prerequisites: CSD 203, CSD 204, CSD 205, and CSD 215.** (Offered Fall)
- CSD 310 *Clinical Procedures in Communication Disorder* – 3 hrs. A course in the construction of therapy plans, clinical methods, materials, and applications of remedial techniques for communication disorders. Twenty-five observation hours are required. **Prerequisites: CSD 203, CSD 204, CSD 205, CSD 215, and CSD 307.** (Offered Fall, Spring, and Summer)
- CSD 312 *Language Intervention and Communication Skills for the Moderately and Severely Disabled Individual* – 2 hrs. A course involving the study of language remediation and intervention for developing communication skills in severely and profoundly disabled individuals. **Prerequisite: None.** (Offered Spring)
- CSD 321 *Supervised Clinical Practicum I* – 3 hrs. Clinical experiences with children and adults who have communication disorders. **Prerequisite: CSD 310.** (Offered Fall, Spring, and Summer)
- CSD 323 *Communication for the Hearing Impaired* – 3 hrs. A study of the theories and methods of working with the hearing impaired. Emphasis will be placed on communication disabilities related to hearing losses. **Prerequisite: CSD 308.** (Offered Spring)
- CSD 324 *Principles of Teaching Language and Auditory Perception* – 3 hrs. In this course, emphasis is placed on language disabilities and auditory perceptual disorders due to a variety of physiological and/or environmental differences. **Prerequisite: CSD 205.** (Offered Fall)
- CSD 332 *Augmentative and Alternative Communication* – 3 hrs. This course is designed to increase the student's awareness and functional knowledge of augmentative and alternative communication (AAC) devices. AAC is the supplementation and/or replacement of natural speech and/or writing using aided and/or unaided symbols (e.g., Blissymbols, fingerspelling, gestures, ideographs, logographs, manual signs, pictographs) and the related means of selection and transmission of such symbols. This course offers a survey of the issues that address the individual needs and requirements of those that utilize AAC devices. The student will be exposed to those issues that must be addressed in order to provide appropriate and efficacious services. **Prerequisites: CSD 307, CSD 308, and permission to take upper division courses.** (Offered Spring)
- CSD 402 *Manual Communication* – 3 hrs. This course is designed to give the student knowledge and skills in providing supportive and substantive help through non-auditory cues to persons having communicative problems associated with hearing impairment and to persons with neurological impairments extending beyond the peripheral hearing organs which make it difficult to acquire language using primary auditory input. **Prerequisite: None.** (Offered Fall)
- CSD 406 *Supervised Clinical Practicum II* – 3 hrs. Clinical experience with children and adults who have communication disorders. Enrollment limited to 10. **Prerequisite: CSD 321.** (Offered Fall, Spring, and Summer)
- CSD 414 *Advanced Speech Pathology* – 3 hrs. A study of professional terminology, classification, etiologies, symptomologies, and appropriate therapy procedures used with individuals having specific communication disorders. **Prerequisite: CSD 307.** (Offered Spring)
- CSD 417 *Methods and Materials in Communicative Disorders* – 3 hrs. A study of methods and materials for speech-language pathologists including coordination, planning, professional relationships and program structure. Current materials for communication disorders are discussed and utilized. **Prerequisite: None.** (Offered Fall)

- CSD 420 *Speech and Language Assessment* – 3 hrs. This course will address the principles and procedures for assessing and diagnosing speech and language disorders. This course represents a competency-based approach designed to enable the student to develop skills specific to knowledge, comprehension, and application levels of learning which are required. The prescribed sequence of skills and knowledge at the required competency levels is designed to contribute to the development of a skilled, entry-level practitioner. **Prerequisites: CSD 414 and permission to take upper division courses.** (Offered Fall)
- CSD 421 *Multicultural Issues in Communicative Disorders* – 3 hrs. This course is designed to increase the student's awareness of the cultural differences and practices of various ethnic and racial groups. This course offers a survey of the issues that address the individual and collective differences that must be addressed in order to provide appropriate and efficacious services. **Prerequisites: CSD 414 and permission to take upper division courses.** (Offered Spring)
- CSD 423 *Speech and Language Problems in the Aged* – 3 hrs. This course is intended to serve as a source for understanding normal communication changes, communication disorders, and service delivery options from a gerontological perspective. This course will explore the concept of understanding and developing strategies for management of age-related communication deficits. Information is presented within the context of a unified model of communicative functioning in the elderly. Emphasis will be placed on key issues, vocabulary associated with the management of the impaired elderly, and topics of particular interest in considering communicative behavior. **Prerequisites: CSD 414 and permission to take upper division courses.** (Offered Spring)

**DEPARTMENT OF CURRICULUM,  
TEACHING & EDUCATIONAL LEADERSHIP**

207 Carver Complex North  
(256) 372-5520

**Mission Statement**

The Department of Curriculum, Teaching & Educational Leadership seeks to provide instruction for undergraduate and graduate teacher candidates and other school personnel in the areas of educational history, theories, philosophies, and research; methods and materials for teaching in secondary schools; and policies and procedures of administering schools and educational agencies. In addition to teaching subject matter content, the faculty places emphasis on candidate mastery of techniques and strategies of integrating technology into teaching subject matter to a diverse population of students. The department faculty also conducts research and provides professional services to schools, community agencies, and professional organizations and associations.

**Program Goals**

The Secondary Education curriculum provides the opportunity for teacher education candidates to develop an integrated personality, a background of general cultural knowledge, and special proficiency in selected fields of subject matter. The program is organized so the student is given frequent opportunities to observe and to apply educational practices and principles in real school-community situations. The goals of the teacher education program in Secondary Education are as follows:

1. To provide candidates with fundamental knowledge and understanding in the general field of education and the processes of education in American society and the broader community.
2. To provide candidates with competencies in the use of basic tools of education.
3. To provide candidates with the fundamental knowledge for performing in classroom situations in accordance with current professional thinking and research.
4. To provide candidates with opportunities to apply theory to practice in real classroom situations under the direction of a practicing educator.
5. To provide curricula which will enable candidates in secondary education to develop the skills in human relations necessary for working effectively in multi-cultural global settings.
6. To provide curricula experiences for the development of knowledge, understanding, and skills for resolving problems of teaching and learning in inner city and rural schools.
7. To provide candidates with competence in instructional technology and their subject areas (English language arts, general social science, mathematics, etc.)
8. To provide candidates with opportunities to develop professional competence in teaching subject area disciplines.
9. To provide candidates with opportunities to participate in interdisciplinary learning experiences.

**Program Offerings and Degrees**

The Secondary Education program area offers programs leading to the Bachelor of Science degree in Secondary Education with majors in the following academic disciplines: Biology, Chemistry, English, History, Physics, and Mathematics. Each degree program provides a Professional Class B Certificate in the respective

academic discipline in grades 6 -12. The programs in English and History also provide Class B certification in English Language Arts and General Social Science, respectively.

The Secondary Education program area also offers programs leading to certification in the the following Career Technical Education areas: Agriscience Education, Business and Office Education, Family and Consumer Sciences Education, Technical Education and Technology Education. Specific program content and curriculum outlines are listed in the departments of Agribusiness, Family and Consumer Sciences, Economics, Finance and Office Systems Management, and Engineering Technology.

1. Agriscience Education must include courses in animal and agricultural mechanics, poultry and forestry.
2. Business and Office Education must include courses in business communication, office procedures, office machines, applied mathematics, business law, management and supervised laboratory experiences.
3. Family and Consumer Sciences Education must include courses in clothing and textiles, consumer education, housing—living environment, individual and family living, parenthood, and nutrition and family, and supervised laboratory experiences.
4. Technical Education must include courses in occupational information and guidance, human relations in trade and industrial management, applied mathematics, labor relations, labor economics, occupational analysis, history and principles in trade industrial education, organization management and safety in trade industrial education, occupational competency and work experience.
5. Technology Education must include courses in drafting, electricity, graphic arts, organization and administration of industrial arts, manufacturing and construction industries, power and transportation, and other professional technical educational courses.

## SECONDARY EDUCATION

### BIOLOGY

128 Credit Hours

#### Freshman Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
CHE 101	General Chemistry I	3	CHE 102	General Chemistry II	3
CHE 101L	General Chemistry I Lab	1	CHE 102L	General Chemistry II Lab	1
ENG 101	Composition I	3	ENG 102	Composition II	3
HED 101	Personal & Community Health <b>or</b>	2	ART 101	Art Appreciation <b>OR</b>	3
PED	Physical Education Activities <b>or</b>	(2)	MUS 101	Music Appreciation	(3)
MSC 101	Military Science	(2)	HIS 102	World History II	3
HIS 101	World History I	3	BIO201	Invertebrate Zoology	3
ORI 101	Survival Skills	1	BIO201L	Invertebrate Zoology Lab	<u>1</u>
MTH 112	Pre-Calculus Algebra	<u>3</u>			17
		16			



### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 200 Basic Economics	3	BIO 311 Genetics	3
ENG 203 World Literature I <sup>1</sup>	3	BIO 311L Genetics Lab	1
ENG 205 General Speech	3	ENG 204 World Literature II <sup>2</sup>	3
FED 200 Intro. to Teacher Education	2	BIO 203 Botany I	3
FED 212 Human Growth & Development	3	BIO 203L Botany I Lab	1
BIO 103 Principles of Biology	3	FED 215 Instructional Technology	3
BIO 103 Principles of Biology Lab	<u>1</u>	SPE 201 Intro. Excep. Individuals	<u>3</u>
	18		17

<sup>1</sup>ENG 201 or ENG 301; <sup>2</sup>ENG 202 or ENG 302

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FED 300 Foundations of Education	2	FED 404 Tests & Measurements	3
CHE 301 Organic Chemistry I	3	CHE 302 Organic Chemistry II	3
CHE 301L Organic Chemistry I Lab	1	CHE 302L Organic Chemistry II Lab	1
BIO 330 Microbiology	3	BIO 434 Physiology	3
BIO 330L Microbiology Lab	1	BIO 434L Physiology Lab	1
PSY 201 General Psychology	3	CHE 407 Biochemistry	3
SED 307 Mat. & Mtds. Teaching in Sec. Schools	<u>3</u>	CHE 407L Biochemistry Lab	1
	16	SED 409 Reading in Content Area	<u>3</u>
			18

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
BIO 411 Cell Biology	3	SED 495 Directed Teaching	<u>12</u>
BIO 411L Cell Biology Lab	1		12
BIO 412 Molecular Biology	3		
BIO 412L Molecular Biology Lab	1		
PSY 403 Educational Psychology	3		
SED 424 Teaching Science in Secondary Schools	<u>3</u>		
	14		

**SECONDARY EDUCATION**  
**CHEMISTRY**  
128 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
CHE 101 General Chemistry I	3	CHE 102 General Chemistry II	3
CHE 101L General Chemistry I Lab	1	CHE 102L General Chemistry II Lab	1
ENG 101 Composition I	3	ENG 102 Composition II	3
HED 101 Personal & Community Health or PED Physical Education Activities or	2	ART 101 Art Appreciation <b>OR</b> MUS 101 Music Appreciation	(3)
MSC 101 Military Science	(2)	HIS 102 World History II	3
HIS 101 World History I	3	MTH 126 Calculus II	<u>4</u>
ORI 101 Survival Skills	1		17
MTH 125 Calculus I <sup>1</sup>	<u>4</u>		
	17		

<sup>1</sup>Prerequisite: MTH 113 or satisfactory placement test score

<sup>a</sup>Prerequisite: MTH 112 or satisfactory placement test score

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 200 Basic Economics	3	FED 200 Intro. to Education	2
ENG 203 World Literature I <sup>1</sup>	3	FED 212 Hum. Growth & Dev.	3
ENG 205 General Speech	3	ENG 204 World Literature II <sup>2</sup>	3
CHE 201 Analytical Chemistry I	3	CHE 202 Analytical Chem. II	3
CHE 201L Analytical Chemistry I Lab	1	CHE 202L Analytical Chem. II Lab	1
PSY 201 General Psychology	<u>3</u>	FED 215 Instructional Technology	3
	16	SPE 201 Intro. Excep. Individuals	<u>3</u>
			18

<sup>1</sup>ENG 201 or ENG 301; <sup>2</sup>ENG 202 or ENG 302

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FED 300 Foundations of Education	2	FED 404 Tests & Measurements	3
CHE 301 Organic Chemistry I	3	CHE 302 Organic Chemistry II	3
CHE 301L Organic Chemistry I Lab	1	CHE 302L Organic Chemistry II Lab	1
CHE 401 Physical Chemistry I	3	CHE 402 Physical Chemistry II	3
CHE 401L Physical Chemistry I Lab	1	CHE 402L Physical Chemistry II Lab	1
CHE 403 Research I	2	CHE 404 Research II	2
SED 307 Mat. & Mtds. Teaching in Sec. Schools	3	SED 409 Reading in Content Area	<u>3</u>
PSY 403 Educational Psychology	<u>3</u>		16
	18		

**Senior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
CHE 407 Biochemistry I	3	SED 495 Directed Teaching	<u>12</u>
CHE 407L Biochemistry I Lab	1		12
CHE 409 Instrumental Methods	3		
PHY 105 Physics I	4		
SED 424 Teaching Science in Secondary Schools	<u>3</u>		
	14		

## SECONDARY EDUCATION

### ENGLISH

127 Credit Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
BIO 101 General Biology I	3	PHY 101 Physical Science I	3
BIO 101L General Biology I Lab	1	PHY 101L Physical Science I Lab	1
ENG 101 Composition I	3	ENG 102 Composition II	3
HED 101 Personal & Comm. Health <b>or</b>	2	ART 101 Art Appreciation <b>or</b>	3
PED Phys. Ed. Activities <sup>1</sup> <b>or</b>	(2)	MUS 101 Music Appreciation	(3)
MSC 101 Military Science	(2)	SOC 201 Intro. to Sociology	3
HIS 101 World History I	3	HIS 102 World History II	<u>3</u>
MTH 112 Pre-Calculus Algebra	3		16
ORI 101 Survival Skills	<u>1</u>		
	16		

<sup>1</sup>PED 103, PED 105, PED 105, PED 106

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 200 Basic Economics	3	ENG 204 World Literature II	3
ENG 203 World Literature I	3	PHL 201 Intro. to Philosophy	3
ENG 205 General Speech	3	FED 215 Instructional Technology	3
FED 200 Intro. to Teacher Education	2	SPE 201 Intro. Excep. Individuals	3
FED 212 Human Growth & Devel.	3	ENG 202 Surv. of English Lit. II	3
ENG 201 Survey of English Literature I	<u>3</u>	PSY 201 General Psychology	<u>3</u>
	17		18

#### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FED 300 Foundations of Education	2	FED 404 Tests & Measurements	3
ENG 301 Survey of Amer. Lit. I	3	ENG 302 Surv. of Amer. Lit. II	3
ENG 405 Advanced Grammar	3	ENG 307 Shakespeare	3
ENG 404 Black Literature <b>or</b>	(3)	ENG 308 Literary Criticism	3
ENG 306 17 <sup>th</sup> Century English Lit.	(3)	ENG 309 History of English Lang.	3
ENG 310 Journalism Workshop	2	SED 409 Reading in Content Area	<u>3</u>
SED 307 Mat. & Mtds. Teaching in Sec. Schools	<u>3</u>		18
	16		

#### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 401 Romantic Writers <b>or</b>	(3)	SED 495 Directed Teaching	<u>12</u>
ENG 402 Victorian Writers	(3)		12
ENG 403 Play Production	2		
PSY 403 Educational Psychology	3		
SED 421 Teaching E.L.A. in Secondary Schools	3		
TEL 403 Acting for Television & Film	<u>3</u>		
	14		

**SECONDARY EDUCATION**  
**HISTORY**  
128 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
BIO 101	General Biology I	3	PHY 101	Physical Science I	3
BIO 101L	General Biology I Lab	1	PHY 101L	Physical Science I Lab	1
ENG 101	Composition I	3	ENG 102	Composition II	3
HED 101	Personal & Comm. Health <b>or</b>	(2)	ART 101	Art Appreciation <b>or</b>	(3)
PED	Phys. Ed. Activities <sup>1</sup> <b>or</b>	(2)	MUS 101	Music Appreciation	(3)
MSC 101	Military Science	(2)	HIS 104	Intro. History Discipline	3
HIS 101	World History I	3	HIS 102	World History II	<u>3</u>
MTH 112	Pre-Calculus Algebra	3			16
ORI 101	Survival Skills	<u>1</u>			
		16			

<sup>1</sup>PED 103, PED 105, PED 105, PED 106

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ECO 200	Basic Economics	3	SOC 201	Intro. to Sociology	3
ENG 203	World Literature I <sup>2</sup>	3	ENG 204	World Literature II <sup>3</sup>	3
ENG 205	General Speech	3	PHL 201	Intro. to Philosophy	3
FED 200	Intro. to Teacher Education	2	FED 215	Instructional Technology	3
FED 212	Human Growth & Dev.	3	SPE 201	Intro. Excep. Individuals	3
HIS 201	American History I	3	HIS 202	American History II	3
HIS 397	Program Seminar I	<u>0.5</u>	HIS 398	Program Seminar II	<u>0.5</u>
		17.5			18.5

<sup>2</sup>ENG 201 or ENG 301; <sup>3</sup>ENG 202 or ENG 302

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
FED 300	Foundations of Education	2	FED 404	Tests & Measurements	3
HIS 206	Alabama History	3	HIS 304	African-Amer. Hist. <b>or</b>	3
HIS 497	Program Seminar III	0.5	HIS 408	Hist. of South Since 1865	(3)
PSC 205	American Government	3	HIS 305	Modern Asia	3
PSC 206	State & Local Government	3	GEO 214	World Regional Geo.	3
PSY 201	General Psychology	3	HIS 498	Program Seminar II	0.5
SED 307	Mat. & Mtds. Teaching		SED 409	Reading in Content Area	<u>3</u>
	in Sec. Schools	<u>3</u>			17.5
		15.5			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
HIS 402	History of Latin America	3	SED 495	Directed Teaching	<u>12</u>
HIS 403	Modern Europe	3			12
HIS 499	Senior Seminar	3			
PSY 403	Educational Psychology	3			
SED 423	Teaching Social Science				
	in Sec. Schools	<u>3</u>			
		15			

**SECONDARY EDUCATION**  
**MATHEMATICS**  
 126 Credit Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
BIO 101 General Biology I	3	CHE 101 General Chemistry	3
BIO 101L General Biology I Lab	1	CHE 101L General Chemistry Lab	1
ENG 101 Composition I	3	ENG 102 Composition II	3
HED 101 Personal & Comm. Health <b>or</b>	(2)	ART 101 Art Appreciation <b>or</b>	(3)
PED Phys. Ed. Activities <sup>1</sup> <b>or</b>	(2)	MUS 101 Music Appreciation	(3)
MSC 101 Military Science	(2)	MTH 113 Pre-Calculus Trig.	3
HIS 101 World History I	3	HIS 102 World History II	<u>3</u>
MTH 112 Pre-Calculus Algebra	3		16
ORI 101 Survival Skills	<u>1</u>		
	16		

<sup>1</sup>PED 103, PED 105, PED 105, PED 106

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 200 Basic Economics	3	ENG 204 World Literature II	3
ENG 203 World Literature I	3	FED 215 Instructional Technology	3
ENG 205 General Speech	3	SPE 201 Intro. Excep. Individuals	3
FED 200 Intro. to Teacher Education	2	MTH 126 Calculus II	4
FED 212 Human Growth & Devel.	3	PSY 201 General Psychology	<u>3</u>
MTH 125 Calculus I	<u>4</u>		16
	18		

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FED 300 Foundations of Education	2	FED 404 Tests & Measurements	3
MTH 227 Calculus III	4	MTH 307 Geometry	3
MTH 237 Introduction to Linear Algebra	3	MTH 351 Intro. to Real Analysis I	3
MTH 238 Applied Differential Equations	3	MTH 357 Computers/T'ching Mth.	3
MTH 301 Abstract Algebra	3	SED 409 Reading in Content Area	<u>3</u>
SED 307 Mat. & Mtds. Teaching in Sec. Schools	<u>3</u>		15
	18		

**Senior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MTH 401 History of Mathematics	3	SED 495 Directed Teaching	<u>12</u>
MTH 453 Probability & Statistics	3		12
MTH 481 Senior Project	3		
PSY 403 Educational Psychology	3		
SED 422 Teaching Math in Secondary Schools	<u>3</u>		
	15		

**SECONDARY EDUCATION****PHYSICS**

127 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
CHE 101	General Chemistry I	3	CHE 102	General Chemistry II	3
CHE 101L	General Chemistry I Lab	1	CHE 102L	General Chemistry II Lab	1
ENG 101	Composition I	3	ENG 102	Composition II	3
HED 101	Personal & Comm. Health	or (2)	ART 101	Art Appreciation	or (3)
PED	Phys. Ed. Activities <sup>1</sup>	or (2)	MUS 101	Music Appreciation	(3)
MSC 101	Military Science	(2)	HIS 102	World History II	3
HIS 101	World History I	3	MTH 126	Calculus II	<u>4</u>
MTH 125	Calculus I	4			17
ORI 101	Survival Skills	<u>1</u>			
		17			

<sup>1</sup>PED 103, PED 105, PED 105, PED 106**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ECO 200	Basic Economics	3	MTH 238	Applied Diff. Equations	3
ENG 203	World Literature I <sup>2</sup>	3	ENG 204	World Literature II <sup>3</sup>	3
ENG 205	General Speech	3	PHY 106	Physics II	4
FED 200	Intro. to Teacher Education	2	FED 215	Instructional Technology	3
FED 212	Human Growth & Dev.	3	SPE 201	Intro. Excep. Individuals	<u>3</u>
PHY 105	Physics I	<u>4</u>			16
		18			

<sup>2</sup>ENG 201 or ENG 301; <sup>3</sup>ENG 202 or ENG 302**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
FED 300	Foundations of Education	2	FED 404	Tests & Measurements	3
PHY 201	Intro. to Modern Physics	3	PHY 252L	Modern Physics Lab	3
PHY 321	Mechanics I	3	PHY 303	Methods of Math Physics	3
PSY 201	General Psychology	3	PHY 331	Elec. & Magnetism I	3
SED 307	Mat. & Mtds. Teaching in Sec. Schools	<u>3</u>	PHY 451	Intro. to Solid State Phys.	3
		14	SED 409	Reading in Content Area	<u>3</u>
					18

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
PHY 421	Intro. to Quantum Mechanics	3	SED 495	Directed Teaching	<u>12</u>
PHY 341	Heat & Thermodynamics	3			12
PHY 401	Optics	3			
PSY 403	Educational Psychology	3			
SED 424	Teaching Science in Secondary Schools	<u>3</u>			
		15			

## COURSE DESCRIPTIONS

- EDU 100L *Reading with Lab* – 3 hrs. This is a corrective course of individualized reading instruction designed to improve basic reading, study and cognitive skills, which are essential to success at the college level. Freshmen who enter the University with a score between 0 and 11 on the Reading Subtest of the ACT or a score between 0 and 10.8 on the Nelson-Denny Reading Test are required to register for this course. Students who do not pass this course are required to enroll in EDU 100, Reading. **Prerequisite: None.** (Offered Fall and Spring)
- EDU 100 *Reading (General Education)* – 3 hrs. Required of all entering freshmen and transfer students (with fewer than 31 semester hours) scoring below 12.0 on the Nelson-Denny Reading Test (required placement test). A course of individualized instruction designed to improve basic reading, study, and thinking skills which are essential to success at the college level. This course may extend for two semesters commensurate with the need of the student. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- EDU 101 *Laboratory Approach to Concept Development* – 2 hrs. A program designed to aid those students who select to major in education and must pass the Alabama Prospective Professional Teaching (APPT) test as stipulated by the Alabama State Board of Education. Generally, the course gives students an opportunity to improve their performance on standardized and teacher-made tests by allowing them to explore test-taking techniques and to participate in numerous activities related to English usage, mathematics usage, reading and writing. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- FED 200 *Introduction to Teacher Education* – 2 hrs. A general overview of teaching in public schools with a supervised practicum. The course is designed as a personalized exploration of the profession for those students interested in teaching as a possible career and anxious for an accurate picture of what is entailed in teaching in American schools today as well as the qualities and skills required for those who teach. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- FED 212 *Human Growth and Development* – 3 hrs. A study of the ontogenesis of human growth and learning from adolescence to young adulthood. Emphasis is placed on the cause and effect interrelationship between natural growth and maturational processes and environmental forces, influences, and expectations. **Prerequisite: PSY 201.** (Offered Fall, Spring, and Summer)
- FED 215 *Instructional Technology* – 3 hrs. A course designed to emphasize traditional current and emerging instructional technology in the classroom. Students will learn various techniques for designing instructional materials, applying and integrating technology in instruction, and using microcomputer and software applications to promote effective teaching and learning. The course offers pre-service teachers the opportunity to design lessons, select appropriate media formats, and conduct informal and formal evaluations on the effectiveness of selected media on the learning process. Also, students will become knowledgeable of educational applications in both microcomputer platforms Macintosh and Windows. **Prerequisites: None.** (Offered Fall, Spring, and Summer)
- FED 300 *Foundations of Education* – 2 hrs. A study of the growth and development of education in the United States, together with a consideration to the effects of the purpose of education on organization administration curriculum, and teaching procedures. **Prerequisites: None.** (Offered Fall, Spring, and Summer)
- SED 307 *Materials & Methods of Teaching in Secondary Schools* – 3 hrs. A course designed to acquaint the student with fundamental educational principles and practices in secondary schools and current acceptable methods, devices, and techniques of learning that enhance and facilitate the teaching-learning process. The course also provides for supervised practicum. **Prerequisites: FED 200, FED 212, FED 215, and SPE 201.** (Offered Fall and Spring)

- FED 404 *Tests and Measurements* – 3 hrs. A study of the current methods of educational measurement and evaluation; the development of a scientific attitude toward the ideas of statistics and testing; the study and selection of various tests; and the solution of individual problems through the administration and interpretation of illustrative tests. **Prerequisites:** FED 200, FED 212, FED 215, and SPE 201. (Offered Fall, Spring, and Summer)
- SED 409 *Reading in the Content Area* – 3 hrs. A course focusing on the basic reading and study skills that students need, regardless of the content area. It also provides concrete suggestions for ascertaining reading interests and activities of secondary students. The course will be presented in a non technical manner that stresses a practical approach. **Prerequisites:** FED 200, FED 212, FED 215, and SPE 201. (Offered Fall, Spring, and Summer)
- SED 421 *Teaching English in Secondary Schools* – 3 hrs. This course entails an analysis of objectives of the high school curriculum in English and a study of methods and practices effective in the teaching of language and literature. **Prerequisites:** Formal admission to the teacher education program; FED 200, FED 212, FED 215, SPE 201, FED 300, PSY 403, and FED 404. (Offered Fall and Spring)
- SED 422 *Teaching Mathematics in Secondary Schools* – 3 hrs. A methods course designed for persons interested in teaching mathematics in high schools. Emphasis will be given to the logic of arithmetic, algebra, and geometry. The following topics are representative of the areas to be covered: mathematics as a study which contributes to the realization of the general aims of education; the specific aims of mathematics teaching; the proper place of mathematics in the secondary school curriculum; sources of materials and aids in the teaching of mathematics; mathematics organizations (professional and student); mathematics literature (professional and lay); and tests in mathematics. **Prerequisites:** Formal admission to the teacher education program; FED 200, FED 212, FED 215, SPE 201, FED 300, PSY 403 and FED 404. (Offered Fall and Spring)
- SED 423 *Teaching the Social Sciences in Secondary Schools* – 3 hrs. A study of the aims and function of the social sciences in the modern secondary school and the curriculum and methods appropriate to the attainment of these objectives. **Prerequisites:** Formal admission to the teacher education program; FED 200, FED 212, FED 215, SPE 201, FED 300, PSY 403, and FED 404. (Offered Fall and Spring)
- SED 424 *Teaching Science in Secondary Schools* – 3 hrs. A study of the present methods of teaching subjects such as biology, physics, chemistry, and general science; the basic concepts of various sciences, fundamental laws and principles, and the development in study of scientific attitudes. Topics representative of the area to be covered include: the contributions of science to the realization of the aims of education; the aims of science teaching; the use of technology, demonstrations, and experiments; and science materials and their sources. **Prerequisites:** Formal admission to the teacher education program; FED 200, FED 212, FED 215, SPE 201, FED 300, PSY 403, and FED 404. (Offered Fall and Spring)
- SED 495 *Directed Teaching* – 12 hrs. Fourteen weeks of full-time teaching under the immediate direction of supervising teachers in off-campus public schools. Upon return to the campus, students share their experiences, discuss problems, and develop new techniques in a professional seminar. **Prerequisites:** Senior classification; official admission to Teacher Education Program; minimum cumulative average of 2.50 “C” in all coursework completed, with no grade less than a “C” for professional courses; completion of all coursework in the program. (Offered Fall and Spring)



## DEPARTMENT OF ELEMENTARY AND EARLY CHILDHOOD EDUCATION

### MISSION

Elementary Education (K-6), Early Childhood (P-3) or Elementary/Early Childhood (P-6). The Elementary and Early Childhood Department provides instruction for undergraduate teacher candidates in the theories, methods, and materials relating to learning by young children. In addition to teaching subject matter content, the faculty places emphasis on candidate mastery of techniques and strategies for integrating technology into the teaching of language arts, reading, social studies, mathematics, science, movement, and artistic expressions to a diverse population of students. The faculty also conducts research and provides professional services to schools, community agencies, and to professional organizations and associations.

Baccalaureate programs in Elementary Education and Early Childhood Education lead to Class B Certification. Programs are designed to facilitate the development of effective teachers, principals, directors, and supervisors. Curricula are structured to provide students with 1) a thorough understanding of children and how they learn; 2) an interest in guiding youth to higher ideals and standards of living; 3) a deep consciousness of family and community needs; and 4) a motivation and life-long desire to continue to grow professionally and enrich their own lives, while influencing others to achieve optimum growth and development.

Advisors are assigned through the program area. Students are requested to check with advisors at least twice each semester. Majors should follow the latest State Department of Education's approved program because the AAMU *Bulletin* may not reflect recent changes. Regular advisement sessions will assure that students are following an approved program.

Courses offered in the program toward the student's major are considered professional education courses. The plan of study follows a recommended sequence for ultimate progress toward the degree. Students should complete FED 200,, Introduction to Teacher Education; FED 215 Introduction to Instructional Technology; FED 303 Foundation of, Education; FED 404 Tests and Measurement , PSY 403 Educational Psychology and HDF 211, Child Human Growth and Development, before enrolling in any of the materials and methods courses. Candidates must have advisor approval. Materials and methods courses, ECE 300, ECE 301, ECE 302, ECE 303, ECE 304,, ECE 305, ECE 407, ECE 412, ECH 405, ECH 300, ELE 300, require a practicum in area schools.

### ELEMENTARY EDUCATION (K-6)

128 Semester Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II	3
ENG 101 Composition I	3	MTH 307 Geometry <b>or</b>	(3)
MTH 112 Pre-Calculus Algebra	3	MTH 113 Pre-Calculus <b>or</b>	(3)
BIO 101 General Biology I	3	MTH 107 Modern Math <b>or</b>	(3)
BIO 101L General Biology Lab I	1	MTH 110 Finite Math <b>or</b>	(3)
HIS 101 World History I	3	MTH 304 Math for Elem School Teachers	(3)
ART 101 Art Appreciation <b>or</b>	3	BIO 102 General Biology II	3
MUS 101 Music Appreciation	(3)	BIO 102L General Biology Lab II	1
	17	HIS 203 Fnd of Amer His/Govt <b>or</b>	3
		ECO 200 Basic Economics	3
		PED P E Activities <b>or</b>	(2)
		MSC 101 Military Science <b>or</b>	(2)
		HED 101 Personal & Community Health	(2)
			18

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ENG 203	World Literature I	3	ENG 204	World Literature II	3
PHY 101	Physical Science I	3	PHY 102	Physical Science II	3
PHY 101L	Physical Science I Lab	1	PHY 102L	Physical Science II Lab	1
PSY 201	General Psychology <b>or</b>	(3)	HDF 211	Child Human Growth & Develop	3
PHL 201	Intro to Philosophy <b>or</b>	(3)	SPE 201	Intro to Study of Except Children	3
SOC 201	Intro to Sociology <b>or</b>	(3)	ENG 205	General Speech	3
FED 200	Intro to Teacher Educ	3	MTH 307	Geometry <b>or</b>	(3)
MTH 307	Geometry <b>or</b>	(3)	MTH 113	Pre-Calculus <b>or</b>	(3)
MTH 113	Pre-Calculus <b>or</b>	(3)	MTH 107	Modern Math <b>or</b>	(3)
MTH 107	Modern Math <b>or</b>	(3)	MTH 110	Finite Math <b>or</b>	(3)
MTH 110	Finite Math <b>or</b>	(3)	MTH 304	Math for Elem Sch Teach	<u>(3)</u>
MTH 304	Math for Elem Sch Teach	(3)			19
FED 215	Intro to Instru Tech	<u>3</u>			
		19			

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
PSY 403	Educational Psychology	3	ECE 301	M/M of Language Arts	3
FED 404	Tests & Measurement	3	ECE 304	Teach Reading to Young Children	3
FED 401	Foundation of Edu	3	MUS 327	Music for Class Teachers	2
SPE 326	Mgt of Classroom Behav	3	NHM 404	Nutrition for Early/Middle	3
ART 300	Art for Elementary Sch	2	ELE 300	Elem Sch Organization	<u>3</u>
ECE 300	Artistic Expression	<u>3</u>			14
		17			

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. hrs.</i>	
ECE 302	M/M of Social Studies	3	ELE 495	Directed Teaching	<u>12</u>
ECE 412	Children's Literature	3			12
ECE 303	M/M of Science & Hlth	3			
ECE 305	M/M of Mathematics	3			
ECE 407	Intermediate Readers	<u>3</u>			
		15			

**EARLY CHILDHOOD EDUCATION (P-3)**

128 Semester Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>	
ENG 101	Composition I	3	ENG 102	Composition II	3
MTH 112	PreCalculus Algebra	3	MTH	Approved Elective	3
BIO 101	General Biology I	3	BIO 102	General Biology II	3
BIO 101L	General Biology Lab	1	BIO 102L	General Biology Lab	1
HIS 101	Wqrld History	3	HIS 203	Fnds of Amer Hy/Gov't <b>or</b>	3
ART 101	Art Appreciation <b>or</b>	(3)	ECO 200	Basic Economics	(3)
MUS 101	Music Appreciation	(3)	HED 101	Personal/Comm Health <b>or</b>	(2)
ORI 101	Survival Skills	<u>1</u>	PED	Activity Electives <b>or</b>	(2)
		17	MSC 101	Military Science	<u>(2)</u>
					15

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I	3	ENG 204 World Literature II	3
PHY 101 Physical Science I	3	PHY 102 Physical Science II	3
PHY 101L Physical Science Lab	1	PHY 102L Physical Science Lab	1
MTH Approved Elective	3	FED 215 Instructional Techn	3
Approved Social Science Elect	3	SPE 201 Exceptional Children	3
Approved Social Science Elect	3	HDF 211 Child Growth/Dev	<u>3</u>
FED 200 Intro to Teacher Education	<u>2</u>		16
	18		

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 205 General Speech	3	ECH 300 Programs in ECH	3
ECE 300 Artistic Expressions	3	ECE 301 M/M Language Arts	3
SPE 326 Mgmt of Classroom Behavior	3	ECE 304 Teaching Rdg to Young	3
FED 300 Foundations of Education	2	MTH 304 Math for Teachers	3
PSY 403 Educational Psychology	3	NHM 404 Nutrition	3
HDF 304 Parenting	<u>3</u>	ECH 405 Org/Adm ECH	<u>3</u>
	17		18

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FED 404 Tests and Measurement	3	ECH 495 Internship	<u>12</u>
ECE 302 M/M Social Science	3		12
ECE 303 M/M Science/Health	3		
ECE 305 M/M Mathematics	3		
ECE 412 Children's Literature	<u>3</u>		
	15		

## EARLY CHILDHOOD ELEMENTARY EDUCATION (P-6)

128 Semester Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 101 Composition I	3	ENG 102 Composition II	3
MTH 112 PreCalculus Algebra	3	MTH Approved Elective	3
BIO 101 General Biology I	3	BIO 102 General Biology II	3
BIO 101L General Biology Lab	1	BIO 102L General Biology Lab	1
HIS 101 Wqrld History	3	HIS 203 Fnds of Amer Hy/Gov't	3 or
ART 101 Art Appreciation	3 or	ECO 200 Basic Economics	(3)
MUS 101 Music Appreciation	(3)	HED 101 Personal/Comm Health	2 or
ORI 101 Survival Skills	<u>1</u>	PED Activity Electives	(2) or
	17	MSC 101 Military Science	<u>(2)</u>
			15

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 203	World Literature I	3	ENG 204	World Literature II	3
PHY 101	Physical Science I	3	PHY 102	Physical Science II	3
PHY 101L	Physical Science Lab	1	PHY 102L	Physical Science Lab	1
MTH	Approved Elective	3	FED 215	Instructional Techn	3
	Approved Social Science Elect	3	SPE 201	Exceptional Children	3
	Approved Social Science Elect	3	HDF 211	Child Growth/Dev	<u>3</u>
FED 200	Intro to Teacher Education	<u>2</u>			16
		18			

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 205	General Speech	3	ECE 301	M/M Language Arts	3
ART 310	Art for Teachers	2	ELE 300	Elem School Org	3
SPE 326	Mgmt of Classroom Behavior	3	MTH 304	Math for Teachers	3
ECE 304	Rdg to Young Children	3	FED 404	Tests and Measurement	3
FED 300	Foundations of Education	2	MUS	Music for Teachers	2
PSY 403	Educational Psychology	<u>3</u>	NHM 404	Nutrition	<u>3</u>
		16			17

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ECE 302	M/M Social Science	3	ECH or ELE	Internship	<u>12</u>
ECE 303	M/M Science/Health	3			12
ECE 305	M/M Mathematics	3			
HDF 304	Parenting	3			
ECE 412	Children's Literature	3			
PED	Movement	<u>2</u>			
		17			

**COURSE DESCRIPTIONS**

- ECE 300 *Artistic Expression through Art, Music and Movement* – 3 hrs. This course is designed to give candidates an understanding of how art and music is used in the classroom to aid student's artistic expressions. Special emphasis is given to the use of art and music to enhance the physical and motor growth and development of all young children. The content of this course is designed so that candidates are given information and resources about primary students (P-3) and intermediate students (4-6). **A practicum is required. Prerequisite: Admission to Teacher Education.**
- ECE 301 *Materials and Methods of Teaching Language Arts* – 3 hrs. This course is designed to provide candidates with experiences that give them knowledge, skills, and dispositions about methods and materials related to language arts with special emphasis on listening, handwriting, reading, speaking, and children's literature. Emphasis will also be placed on writing compositions. The content of this course is planned around primary students (P-3) and intermediate students (4-6). **A practicum is required. Prerequisite: Admission to Teacher Education.**
- ECE 302 *Materials and Methods of Teaching Science* – 3 hrs. This course is intended to help candidates develop the knowledge, attitudes, and skills needed to teach effectively and to nurture children's curiosity. The curriculum concept will target primary students (P-3) and intermediate students (4-6). The curriculum topics emphasized in this course will include: process of science and scientific inquiry, construction of science knowledge, science teaching strategies, planning for

science instruction and health education and nutrition. **A practicum is required. Prerequisite: Admission to Teacher Education.**

- ECE 303 *Materials and Methods of Teaching Social Studies* – 3 hrs. This course emphasizes the knowledge, skills, and dispositions needed by candidates to become effective classroom social studies teachers. The course will underscore the content taught to primary students (P-3) and intermediate students (4-6). Among topics, the instruction will focus on cooperative learning, multicultural concerns, current issues, inquiry methods and developing map and globe concepts. **A practicum is required. Prerequisite: Admission to Teacher Education.**
- ECE 304 *Teaching Reading to Young Children* – 3 hrs. This course will provide an in-depth study of early literacy development and word identification strategies that will include methods of assessment and instruction in phonemic awareness, phonics, fluency, vocabulary, and text comprehension. Major approaches to reading instruction developmentally appropriated for young children will be investigated. **A practicum is required. Prerequisite: Admission to Teacher Education.**
- ECE 305 *Materials and Methods of Teaching Mathematics* – 3 hrs. This course is designed to provide experiences related to mathematics education for primary students (P-3) and intermediate students (4-6). The emphasis of the first part of the course is on the concept development of young children, early number sense, and concepts and operations for the primary grades. The second part of the course focuses on the nature of mathematical processes, methods of instruction, instructional materials, the evaluation of outcomes, and current research and reform in mathematics education. **A practicum is required. Prerequisite: Admission to Teacher Education.**
- ECE 306 *Word Attack Techniques Skills* – 3 hrs. This course presents the knowledge base of word attack instruction. It also provides principles, methods, and procedures for teaching the pronunciation and meaning of printed text. Candidates will gain experience, through the practicum component, in assessing the teaching of word attack strategies. **A practicum is required. Prerequisite: Admission to Teacher Education.**
- ECE 404 *Problems in Teaching Reading* – 3 hrs. This course involves in-depth study into the reading process with regard to understanding reading comprehension. Candidates will learn to assess the strengths and weaknesses of readers in order to plan a program of accelerated instruction. **A practicum is required. Prerequisite: Admission to Teacher Education.**
- ECE 405 *Seminar: Issues and Problems in Teaching* – 3 hrs. This course provides for an analysis of current trends and problems in teaching. Subjects of contemporary interest will be explored in depth by students. Attention will be given to possible solutions for current problems in education. **A practicum is required. Prerequisite: Admission to Teacher Education**
- ECE 407 *Teaching Intermediate Readers* – 3 hrs. This course provides in-depth study in and application of the process of reading and reading instruction, theoretical approaches, instructional strategies, classroom organization, and the formal/informal assessment of teaching reading in the intermediate grades. Emphases are on acquiring vocabulary, developing comprehension skills, and refining reading processes by modeling metacognitive strategies that promote reading for meaning in a balanced literacy program. **A practicum is required. Prerequisite: Admission to Teacher Education.**
- ECE 412 *Children's Literature* – 3 hrs. This is a survey course of current and traditional literature applicable to diverse populations of children. The components of a well-balanced literature program and related audio-visual media are explored as a means of enriching the basic curriculum and as a source of information and pleasure for children. **Prerequisite: Admission to Teacher Education.**

- ECH 300 *Programs in Early Childhood Education* – 3 hrs. This course is designed to introduce candidates to the field of early childhood education. Topics to include trends and issues in early childhood education, learning theories related to early childhood education and career opportunities in the field. **Prerequisite: Advisor Approval.**
- ECH 303 *Early Childhood Education: Methods & Materials* – 3 hrs. A study of principles and practices which are implemented in early childhood education. **Practicum required. Prerequisite: Advisor Approval.**
- ECH 402 *Creating & Implementing Teaching Materials in Early Childhood Education* – 3 hrs. A course which places emphasis on the designing and laboratory testing of teacher-made materials useful in teaching young children cognitive and social skills. **Prerequisite: Advisor Approval.**
- ECH 405 *Organization and Administration of Early Childhood Education Programs* – 3 hrs. This course is developed to address the administration, organization and supervision of programs for infants and young children. **Prerequisite: Admission to Teacher Education.**
- ECH 407 *Practicum in Groups of Young Children* – 3 hrs. University-supervised practical experiences in working with young children in an on/off-campus public or private state accredited school, grade level P-3. **Prerequisite: Advisor Approval.**
- ECH 411 *Teacher Education Workshops* – 3 hrs. Selected topics related to early childhood programs and activities. **Prerequisite: Advisor Approval.**
- ECH 495 *Internship Seminar* – 12 hrs. This course consists of fourteen weeks of full-time teaching under the immediate direction of supervising teachers in off-campus public (or approved private) schools. Candidates share their experiences, discuss problems, and develop new techniques in a professional seminar for the duration of teaching experience. **Prerequisite: Departmental approval. Weekly seminar is required.**
- ELE 300 *Elementary School Organization* – 3 hrs. This course surveys all aspects of elementary education as a professional career. Candidates will become familiar with dynamics affecting research-based best teaching practices in the elementary school. Special emphasis will be given to integrating the elementary school curriculum to meet the needs of diverse populations, including students from various cultural backgrounds, students with special learning needs, and students who are English language learners. **Prerequisite: Admission to Teacher Education.**
- ELE 495 *Internship Seminar* – 12 hrs. This course consists of fourteen weeks of full-time teaching under the immediate direction of supervising teachers in off-campus public (or approved private) schools. Candidates share their experiences, discuss problems, and develop new techniques in a professional seminar for the duration of teaching experience. **Prerequisite: Departmental approval. Weekly seminar is required.**

## MIDDLE SCHOOL EDUCATION

Middle School Education is designed for students who want to become teachers and who are interested in working with older-elementary school-aged children (or middle school-aged children). Details related to course requirements to complete an endorsement leading to certification in a subject content area are outlined in the latest State-approved program. Middle school endorsements are for students who hold a Class B Professional Certificate in elementary teaching. Endorsements are offered in general science, mathematics, language arts, and social studies. Students should see their advisor to obtain current information.

## Middle School/Junior High School Teaching Fields

General Science  
English Language Arts  
Mathematics  
General Social Sciences

### COURSE DESCRIPTIONS

- EDU 301 *Materials and Methods of Teaching Language Arts* – 3 hrs. This course provides for the study of materials and methods of teaching the language arts, with special emphasis on child growth and development and on innovative methods and methods designed to teach listening, handwriting, phonics, spelling, reading, and children’s literature. Some consideration will also be given to written composition and language usage at the intermediate and middle school levels. **Practicum required. Prerequisite: EDU 102.** (Offered Spring)
- EDU 302 *Materials and Methods of Teaching Social Studies* – 3 hrs. This course provides for the study of materials and methods in the social studies. Emphasis is placed on classroom planning for their use and implementation. This course is intended to cover basic ideas and procedures that constitute sound instructional practices in teaching social studies at the intermediate and middle school levels. **Practicum required. Prerequisite: EDU 102.** (Offered Fall and Spring)
- EDU 305 *Materials and Methods of Teaching Mathematics in the Elementary School and Practicum* – 3 hrs. This course provides experiences in planning, using, and observing methods and materials of teaching number concepts and skills to children. It includes diagnosis of skill weakness, planning for teaching, and the actual tutoring of children. **Practicum required. Prerequisite: EDU 102.** (Offered Fall and Spring)
- MSE 304 *Methods of Teaching Reading in the Middle School and Practicum* – 3 hrs. This course deals with the reading skills needed by the middle school student. It will emphasize techniques for diagnosing reading problems and for prescribing individualized programs for improvement. **Practicum required. Prerequisite: EDU 102.** (Offered Fall and Spring)
- MSE 307 *Principles of Teaching in the Middle School* – 3 hrs. This is an introductory course involving a study and analysis of the major factors and issues which underlie the middle school concept and the movement toward the middle school. It also includes organizational plans and grouping patterns. In addition, a study of the middle school curriculum, with emphasis on arrangement of instructional experiences to meet the educational needs of children representing a wide range of differences in many traits is undertaken as a part of this course. **Prerequisite: EDU 102.** (Offered Fall, Spring, and Summer)
- MSE 308 *Guidance for the Transescent Learner (Ages 10-15)* – 3 hrs. Explores the feelings, overt behaviors, and biological needs of the transescent child. Interpretations, implication, and interventions with each level of behavior are reviewed. Also stressed is how to help the child cope with the myriad of problems confronting him or her in the middle school.
- MSE 412 *Literature for Youth* – 3 hrs. In this course, emphasis is placed on the teacher’s use and selection of books and related materials for children’s pleasure and information. Techniques for building interest for reading, sharing reading, and methods of teaching, using children’s books, are important aspects of the course. (Offered Spring and Summer)
- MSE 422 *Human Relations and Communications Seminar* – 3 hrs. This course provides training for students in interpersonal communication skills, with an emphasis on perceiving and attending to surface and underlying feelings, responding with empathy, warmth, and respect, while integrating

all of these dimensions into an effective life-style. Attention is given to developing strategies for mastering personal difficulties, as well as strategies for use with problem students, and so forth.

### DEPARTMENT OF FINE ARTS

102 Morrison Building  
(256) 372-5513

The Department of Fine Arts is comprised of academic disciplines in music and visual art.

### MISSION AND OBJECTIVES

The mission of the Department is consistent with that of the University. Fine art programs operate in the three-fold function of teaching, creative research and service to the public. Objectives focus on the development and implementation of comprehensive programs in the Fine Arts. These include the preparation of musical and visual artists, teachers of art and music, as well as graphic designers and musicians who are knowledgeable of the music business industry. Further, the Department offers unique and challenging opportunities for creative research to an assembly of faculty and students and provides fine arts experiences to the University community and general public.

### DEGREE OFFERINGS

The department offers the bachelor of arts with three majors: teaching art, graphic design, and studio art. The Art Education major serves those students who pursue a P-12 teaching career. The Graphic Design major serves those students who desire professional careers in graphic design, advertising art, and/or communication graphics. The Studio Art major serves those students pursuing a professional career within the fine arts.

### ART EDUCATION (P-12)

Teaching  
128 Semester Hours

Students in this option must follow all policies and meet all requirements set by the School of Education.

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1		
PED PE Activities	1	PED PE Activities	1
ENG 101 Composition I	3	HIS 101 World History I	3
HED 102 Personal & Com. Health	2	MUS 101 Music Appreciation	3
ART 110 Fundamentals of Drawing	3	ENG 102 Composition II	3
ART 111 Two Dimensional Design	3	ART 121 Three Dimensional Design	3
MTH 112 Pre-Calculus Algebra	<u>3</u>	ART 209 Composition with Drawing	<u>3</u>
	16		16

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PHY 101 Physical Science I	3	BIO 101 General Biology I	3
PHY 101L Physical Science Lab I	1	BIO 101L General Biology Lab I	1
ENG 203 World Literature I	3	FED 215 Instructional Technology	3
HIS 203 Fund of Amer. Hist & Gov	3	FED 212 Human Growth & Development	3
ART 220 History of Art I	3	ENG 204 World Literature II	3
ART 298 Intro to Photography	3	ART 221 History of Art II	<u>3</u>
FED 200 Intro to Teacher Education	<u>2</u>		
	18		16



### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ECO 200 Basic Economics	3	ART Elective (Upper Level)	3
SPE 201 Intro to Study of Excep Child	3	PSY 201 General Psychology	3
ART 410 Teaching Art in Sec School	3	ENG 205 General Speech	3
ART 312 Painting I	3	ART 305 Ceramics I	3
ART 315 Sculpture I	3	SED 307 Principles of Teaching	3
ART 320 Fund of Printmaking	<u>3</u>	ART 310 Teaching Art in Elem School	<u>3</u>
	18		18

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FED 300 Foundations of Edu	2	ART 495 Internship	<u>12</u>
FED 404 Tests and Measurements	3		12
PSY 403 Educational Psychology	3		
SED 409 Reading in Content Area	3		
ART Elective (Upper Level)	<u>3</u>		
	14		

**Electives:** Students majoring in Art Education (P-12) must elect art courses that will total six (6) semester hours. The following courses are options:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ART 202	Beginning Fibers	3
ART 204	Advanced Fibers	3
ART 299	Photography II	3
ART 306	Ceramics II	3
ART 307	Jewelry I	3
ART 308	Jewelry II	3
ART 309	Figure Drawing	3
ART 313	Watercolor Painting	3
ART 314	Painting II	3
ART 316	Sculpture II	3
ART 321	Fundamentals of Printmaking: Lithography & Serigraphy	3
ART 400	Independent Art Investigation	3
ART 412	Origins of Modern Art	3
ART 414	African American Art	3

**GRAPHIC DESIGN**

Non-Teaching  
127 Semester Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	MUS 101 Music Appreciation	3
ENG 101 Composition I	3	ENG 102 Composition II	3
PHY 101 Physical Science I <b>or</b>	(3)	PHY 102 Physical Science II <b>or</b>	(3)
BIO 101 General Biology I	(3)	BIO 102 General Biology II	(3)
PHY 101L Physical Science I Lab <b>or</b>	(1)	PHY 102L Physical Science II Lab <b>or</b>	(1)
BIO 101L General Biology I Lab	(1)	BIO 102L General Biology II Lab	(1)
ART 110 Fundamentals of Drawing	3	HED 102 Personal & Comm. Health	2
MTH 112 Pre-Calculus Algebra	<u>3</u>	ART 209 Composition with Drawing	<u>3</u>
	14		15

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PED Physical Education Activity	1	PED Physical Education Activity	1
HIS 101 World History I	3	HIS 102 World History II	3
ART 111 Two Dimensional Design	3	ART 121 Three Dimensional Design	3
ENG 203 World Literature I	3	PSY 201 General Psychology	3
ART 298 Intro to Photography	3	ENG 204 World Literature II <b>or</b>	(3)
ART 309 Figure Drawing	<u>3</u>	PHL 201 Introduction to Philosophy	(3)
	16	ART 211 Color in Design	<u>3</u>
			16

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 205 General Speech	3	ART Elective	3
ART 220 History of Art I	3	ECO 200 Basic Economics	3
ART 312 Painting	3	ART 221 History of Art II	3
ART 320 Fund of Printmaking	3	Minor Requirements	6
Minor Requirement	3	UAH COURSE	
UAH COURSE		ARS 331 Graphic Design II	<u>3</u>
ARS 230 Graphic Design I	<u>3</u>		18
	18		

**Senior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ART 408 Internship	3	ART Elective	3
Minor Requirements	6	ART 412 Origins of Modern Art	3
UAH COURSES		ART 420 Advertising Thesis	3
ARS 332 Graphic Design III	3	Minor Requirement	3
ARS 430 Adv. Graphic Design I	<u>3</u>	UAH COURSE	
	15	ARS 431 Adv. Graphic Design II	<u>3</u>
			15

**STUDIO ART**  
Non-Teaching  
124 Semester Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	ENG 102 Composition II	3
ENG 101 Composition I	3	HIS 101 World History I	3
MTH 112 Pre-Calculus Algebra	3	MUS 101 Music Appreciation	3
ART 110 Fundamentals of Drawing	3	ART 209 Compositions with Drawing	3
ART 111 Two Dimensional Design	3	ART 121 Three Dimensional Design	3
CMP 101 Fund of Comp and Info Sys	<u>3</u>	PED PE Activity	<u>1</u>
	16		16

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 203 World Literature I	3	HIS 102 World History II	3
HED 102 Personal & Com. Health	2	ENG 204 World Literature II	3
ART Studio Foundation Req.	3	ART 221 History of Art II	3
ART 220 History of Art I	3	ART 211 Color in Design	3
PHY 101 Physical Science I <b>OR</b>	3	PHY 102 Physical Science II <b>OR</b>	3
BIO 101 General Biology I	(3)	BIO 102 General Biology II	(3)
PHY 101L Physical Science Lab I <b>OR</b>	1	PHY 102L Physical Science II Lab <b>OR</b>	1
BIO 101L General Biology Lab I	(1)	BIO 102L General Biology II Lab	(1)
PED PE Activity	<u>1</u>		
	16		16

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 205 General Speech	3	ECO 200 Basic Economics	3
PSY 201 General Psychology	3	PHL 201 Intro to Philosophy	3
ART Studio Foundation Req.	3	ART Studio Foundation Req.	3
ART Studio Foundation Req.	3	ART 400 Indep. Study in Studio	3
Minor Requirement	<u>3</u>	Minor Requirements	<u>3</u>
	15		15

**Senior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ART 400 Indep. Study in Studio	3	ART 400 Indep. Study in Studio	3
ART 400 Indep. Study in Studio	3	ART 401 Advanced Technical Problems	3
ART Art History Elective	3	ART 402 Senior Exhibition	3
Minor Requirements	3	Minor Requirements	3
Minor Requirements	<u>3</u>	Minor Requirements	<u>3</u>
	15		15

**PROGRAM INFORMATION**

All art majors in both teaching and non-teaching areas must earn a grade of "C" or above in all art courses. Students will be required to repeat any art course within the program when the minimum grade of "C" is not achieved.

All art majors should be aware that art courses are usually offered only once a year and some art courses may be offered once every other year with the exception of ART 101, Art Appreciation, and ART 201, Teaching Art in the Elementary School.

ART 101, ART 220, ART 221, ART 403, ART 404, ART 405, ART 408, ART 409, ART 412, and ART 414 are lecture courses that meet three hours per week. All other courses are studio courses that meet six hours per week.

The Department of Fine Arts reserves the right to retain all works that are done for credit in art courses taken at Alabama Agricultural and Mechanical University.

## MINOR PROGRAMS

The following four minor programs are designed to serve persons in fields outside of teacher education. The art minors and their semester hour requirements are as follows:

Visual Art	21 Semester Hours
Crafts	21 Semester Hours
Art History	18 Semester Hours
Graphic Design	21 Semester Hours

Students who minor in visual art must take courses that will total twenty-one (21) semester hours, eighteen (18) of which are required. The remaining three (3) hours must be elected from regular art offerings.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ART 110	Fundamentals of Drawing	3
ART 111	Two Dimensional Design	3
ART 121	Three Dimensional Design	3
ART 209	Composition with Drawing	3
ART 220	History of Art I	3
ART 221	History of Art II	3

Students may elect any beginning studio art course or any art history course. Or students may elect three semester hours from the following to produce a total of twenty-one (21) semester hours.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ART 312	Painting I	3
ART 313	Water Color Painting	3
ART 314	Painting II	3

Students who minor in crafts must take courses that will total twenty-one (21) semester hours, eighteen (18) of which are required. The remaining three (3) hours must be elected from regular art offerings.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ART 110	Fundamentals of Drawing	3
ART 111	Two Dimensional Design	3
ART 121	Three Dimensional Design	3
ART 202	Beginning Fibers	3
ART 305	Ceramics I	3
ART 307	Jewelry I	3

Students should elect three semester hours from the following to produce a total of twenty-one (21) semester hours.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ART 204	Advanced Fibers	3
ART 306	Ceramics II	3
ART 308	Jewelry II	3
ART 317	Beginning Glassblowing	3
ART 318	Advanced Glass Working	3
	Advisor Approved Elective	3

Students who minor in art history must complete a total of eighteen (18) semester hours, nine (9) of which are required.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ART 220	History of Art I	3
ART 221	History of Art II	3
ART 412	Origins in Modern Art	3

Students must elect nine (9) hours from the following to complete eighteen (18) semester hours.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ART 403	Classical Art	3
ART 404	Medieval Art	3
ART 405	Renaissance Art	3
ART 409	Primitive Art	3
ART 414	African-American Art	3

#### **Graphic Design Minor Requirements are twenty-one (21) Hours:**

Students who minor in Graphic Design must take courses that will total twenty-one (21) semester hours, eighteen (18) of which are required. It is recommended that a Graphic Design minor elect three hours of art history.

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
ART 110	Fundamentals of Drawing	3
ART 111	Two Dimensional Design	3
ART 298	Introduction to Photography	3
ART 309	Figure Drawing	3

#### **UAH COURSES**

ARS 230	Graphic Design I	3
ARS 331	Graphic Design II (Electives may be taken at A&M or UAH)	3

### **COURSE DESCRIPTIONS**

- ART 110 *Fundamentals of Drawing* – 3 hrs. A fundamental visual vocabulary is acquired by learning to draw accurately from life. (Offered Fall)
- ART 111 *Two Dimensional Design* – 3 hrs. An introduction to developing concise concepts of design. (Offered Fall)
- ART 121 *Three Dimensional Design* – 3 hrs. An introduction to three-dimensional design and the plastic arts. Through the use of the elements introduced in ART 111, students apply concepts of three dimensional design problems. Exposure to the elements of form and to a variety of approaches used by the contemporary sculptor is included. Various materials are employed. **Prerequisite: ART 111 or consent of instructor.** (Offered Spring)

- ART 202 *Beginning Fibers* – 3 hrs. An introduction to basic fiber techniques employing both on-loom and off-loom methods. A functional understanding and developed appreciation of textiles are emphasized. Students are expected to use these techniques in creating contemporary fiber forms. **Prerequisites: ART 110 and ART 111, or consent of instructor.** (Offered Fall)
- ART 204 *Advanced Fibers* – 3 hrs. A continuation of ART 202. Students may select special areas of concentration. Designed for persons preparing for junior or senior levels. **Prerequisites: ART 110, ART 111, and ART 202, or consent of instructor.** (Offered Spring)
- ART 209 *Composition with Drawing* – 3 hrs. Emphasis is placed on controlling the composition of a two dimensional surface. The abilities to both accurately represent and abstract from life are developed. **Prerequisite: ART 110 or consent of instructor.** (Offered Spring)
- ART 211 *Color in Design* – 3 hrs. This course emphasizes psychological, physiological, and physical properties of color with experimental studio work in subjective and objective evaluations of color usage. **Prerequisites: ART 110, ART 111, or consent of instructor.** (Offered Spring)
- ART 220 *History of Art I* – 3 hrs. A survey of the history of art from prehistoric times to the Renaissance. This course presents a view of ancient, medieval and Renaissance art the world over. (Offered Fall)
- ART 221 *History of Art II* – 3 hrs. A survey of the history of art from Renaissance times to present. This course presents a view of Renaissance through modern art. (Offered Spring)
- ART 298 *Introduction to Photography* – 3 hrs. An introduction to the basic techniques of black and white photography, including the exposure and processing of film and the making of contact prints and enlargements. Students are required to have their own cameras and exposure meter. (Offered Fall)
- ART 299 *Photography II* – 3 hrs. Lectures and discussions of the history of still photography form the basis for problems solved through the use of photographic media. Emphasis is on composition and print quality as well as creative expression. **Prerequisite: ART 298 or equivalent.** (Offered Spring)
- ART 305 *Ceramics I* – 3 hrs. An elementary course in pottery; studio exercises in hand-building pottery forms, throwing on the pottery wheel, decorating, glazing, and firing ceramic ware. Also included are exploration of texture, form, and function. **Prerequisites: ART 110, ART 111, ART 120, and ART 121, or consent of instructor.** (Offered Spring)
- ART 306 *Ceramics II* – 3 hrs. A continuation of ART 305. Emphasis is placed on ceramic sculpture, wheel throwing, glazing, firing, decoration, and ceramic technology. **Prerequisites: ART 110, ART 121, ART 209 and ART 305, or consent of instructor.** (Offered Fall)
- ART 307 *Beginning Jewelry* – 3 hrs. A study of the methods, materials and processes of designing jewelry. The use of personal symbols, creativity, and techniques of metal fabrication by hand and machine tools is emphasized. **Prerequisites: ART 110 and ART 111, or consent of instructor.** (Offered Fall)
- ART 308 *Advanced Jewelry* – 3 hrs. A continuation of skills and techniques introduced in ART 307, Beginning Jewelry. Special emphasis is placed on lost-wax casting and exploration and use of innovative materials in jewelry. **Prerequisite: ART 307, or consent of instructor.** (Offered Spring)

- ART 309 *Figure Drawing* – 3 hrs. The student studies artistic human anatomy, while drawing from live models in order to be able to use the human figure knowledgeably as part of artistic imagery. Composition with the human image is emphasized. **Prerequisites: ART 110, ART 209, or consent of instructor.** (Offered Fall)
- ART 310 *Teaching Art in the Elementary School* – 3 hrs. The planning of art education programs to meet the needs of elementary schools. Provided are experiences with design and color, art materials and processes, and inquiry into child growth and development in art. Lecture, discussion, reading, and individual teaching are considered. Practicum is required. **Prerequisite: Sophomore classification.** (Offered, Fall, Spring, and Summer)
- ART 312 *Painting I* – 3 hrs. An introduction to the techniques of and creative processes in easel painting. Emphasis is placed on a variety of approaches and styles in contemporary painting. **Prerequisites: ART 110, ART 111, ART 209, or consent of instructor.** (Offered Fall)
- ART 313 *Watercolor Painting* – 3 hrs. An introduction to watercolor techniques and studio exercises relating to the treatment of transparent watercolor. **Prerequisites: ART 110, ART 111, ART 209, and ART 312, or consent of instructor.** (Offered Spring)
- ART 314 *Painting II* – 3 hrs. Continuation of ART 312 and/or 313; the student is expected to attempt some development towards a unique and individual style in his or her work and to relate it to his or her personal philosophy of art. **Prerequisites: ART 110, ART 209, or consent of instructor.** (Offered Spring)
- ART 315 *Sculpture I* – 3 hrs. This course involves the examining of concepts relating to three-dimensional design beyond the introductory level. Students will be exposed to a variety of sculpture processes and materials. **Prerequisites: ART 110, ART 111, ART 121, ART 209, or consent of instructor.** (Offered Fall)
- ART 316 *Sculpture II* – 3 hrs. Continuation of ART 315; the student will be expected to show an understanding of a variety of materials and processes. A degree of expertise is required in at least one process and related material (example: welding-metal) knowledge of three-dimensional design must be demonstrated. **Prerequisites: ART 110, ART 111, ART 121, and ART 315, or consent of instructor.** (Offered Spring).
- ART 317 *Beginning Glassblowing* – 3 hrs. An introductory course in hot glass working, including studio exercises in blowing hollow glass ware; solid glass manipulation and finishing techniques; and exploration of glass colors, textures, form and functions. **Prerequisites: ART 110, ART 111 or consent of instructor.** (Offered Fall)
- ART 318 *Advanced Glass Working* – 3 hrs. A continuation of ART 317, emphasis is placed on glass as a sculptural medium. This course involves exploration of casting, fusing, and slumping techniques. Cold glasswork is introduced, and a brief survey of glass history with emphasis on American glass is also included. **Prerequisite: ART 317 or equivalent, or consent of instructor.** (Offered Fall)
- ART 320 *Fundamentals of Printmaking: Relief and Intaglio* – 3 hrs. A workshop, which focuses on, the many graphic techniques involved in printmaking. Emphasis is divided between studio or fine arts graphics and those techniques specifically applicable to elementary and secondary classroom situations with an exploration of the techniques of photography. **Prerequisites: ART 110, ART 111, ART 121, ART 209, or consent of instructor.** (Offered Fall)

- ART 321 *Fundamentals of Printmaking: Lithography and Serigraphy* – 3 hrs. A workshop in beginning studio training in lithography and silk-screen color printing for fine art use, the emphasis of this course is divided between studio or fine art graphics and those techniques specifically applicable to secondary classroom situations. **Prerequisites: ART 110, ART 111, ART 121, and ART 320, or consent of instructor.** (Offered Spring)
- ART 400 *Independent Art Investigation* – 1-3 hrs. This course shall be available to all advanced art students who desire to continue work in any given area beyond the regular studio course offerings. It fulfills requirements for the Studio Art option. **Prerequisite: Junior or Senior status. It may be repeated for credit four times, for up to 12 credit hours, but no more than 3 credits per semester unless the student is enrolled in the Studio Art option, or consent of instructor.** (Offered Fall, Spring, and Summer)
- ART 401 *Advanced Technical Problems* – 3 hrs. A culminating studio course in art based on experiences and skills acquired during the first three years of formal study. **Prerequisite: Senior Status.** (Offered after consultation with major professor.)
- ART 402 *Senior Exhibition* – 3 hrs. A professional presentation of the studio art major's cumulative art production with emphasis placed on the last three semesters of study. **Prerequisite: Senior Status.** (Offered after consultation with major professor.)
- ART 403 *Classical Art* – 3 hrs. A study of the art and architecture of ancient Greece and its influence on the development of the visual arts of the Roman Empire. **Prerequisite: Consult advisor.** (Offered Spring)
- ART 404 *Medieval Art* – 3 hrs. A study of the influence of Christianity on the art of the western world as expressed in early Christian, Romanesque, and Gothic architecture, sculpture, and painting. **Prerequisite: Consult advisor.** (Offered Spring)
- ART 405 *Renaissance Art* – 3 hrs. A study of the visual arts of Italy from 1250 to 1550, taking into consideration the rise of the artist as a creative individual and his expanding role in society. **Prerequisite: Consult advisor.** (Offered Spring)
- ART 406 *Fashion Illustration* – 3 hrs. This course focuses on developing originality and creative ability in the illustration of clothing with consideration of an individual's personality, figure type, age and occasion for which the clothing is to be worn. **Prerequisites: ART 110, ART 209, ART 309, or consent of instructor.** (Offered Spring)
- ART 407 *Advertising Illustration* – 3 hrs. This course develops the conceptual design and drawing skills used by professional illustrators. **Prerequisites: ART 110, ART 209 and ART 309.** (Offered Spring)
- ART 408 *Internship* – 3 hrs. Resume and portfolio preparation, arranged actual work experiences in local businesses, billing procedures, and business etiquette. **Prerequisite: Senior status.** (Offered Fall, Spring, and Summer)
- ART 409 *Primitive Art* – 3 hrs. An examination of the art of preliterate cultures in several parts of the world and the cultural trait, complexes, and institutions associated with them. **Prerequisite: Consult advisor.** (Offered Spring).
- ART 410 *Teaching Art in the Secondary School* – 3 hrs. An introduction to the basic selection of art materials and an analysis of methods appropriate to teaching art in the secondary level school program. **Prerequisites: ART 110, ART 111, ART 209, ART 202, ART 305, ART 312, and ART 320, or consent of instructor.** (Offered Spring)



- ART 412 *Origins in Modern Art* – 3 hrs. A survey of the history of painting and sculpture in the nineteenth century with their immediate genesis in the late eighteenth and immediate continuations in the first decades of the twentieth. **Prerequisite: Consult advisor.** (Offered Spring)
- ART 414 *African-American Art* – 3 hrs. The study of major events, personalities and influences germane to the creation of art by blacks in America, including visual slave themes. Pan-African art, “Black art” and blacks in mainstream art. **Prerequisite: Consult advisor.** (Offered as needed)
- ART 419 *Arts and Crafts for the Atypical Child* – 3 hrs. (For special education curriculum) Students evaluate materials and processes suitable for use with atypical children. Class activities will include experiences with color in design, drawing and crafts. Lectures, discussions, reports and films appropriate for the special program, are also included. **Prerequisite: Consult advisor.** (Offered Summer)
- ART 420 *Advertising Thesis* – 3 hrs. Independent concepts are produced and developed by the student in conjunction with his or her major professor. **Prerequisite: Senior status.** (Offered Spring)

## UNIVERSITY OF ALABAMA IN HUNTSVILLE COURSE DESCRIPTIONS

Students who select the non-teaching option in commercial and advertising art are required to take five graphic design courses at the University of Alabama in Huntsville. These courses are to be taken during the junior and senior years.

- ARS 230 *Graphic Design I* – 3 hrs. Introduction to graphic design theories, principles and tools. Introduces students to the basics of graphic design through the practical understanding of visual communications theories, design principles, and logistics of advertising media, stressing traditional advertising communications techniques. **Prerequisite: All lower-division foundation requirements or approval of instructors. Lab Fee: \$30.** (Offered Fall)
- ARS 331 *Graphic Design II* – 3 hrs. Continuation of ARS 330 plus an introduction to both production techniques and solutions. Included are the beginnings of computer assisted layout techniques using Adobe PageMaker. **Prerequisite: ARS 330 or approval of instructor. Lab Fee: \$30.** (Offered Spring)
- ARS 332 *Graphic Design III* – 3 hrs. Layout and design on the Macintosh computer using *Quark Xpress*. Problems include the experience of designing newsletters, brochures, ads, letterheads, resumes, and business cards for a client. **Prerequisite: ARS 331, or approval of instructor. Lab Fee: \$30.** (Offered Fall)
- ART 401 *Advanced Technical Problems* – 3 hrs. A culminating studio course in art based on experiences and skills acquired during the first three years of formal study. **Senior status.**
- ARS 430 *Advanced Graphic Design I* – 3 hrs. Designing both graphics and illustrations using both Adobe Illustrator and an introduction to designing electronic fonts using Altsys Fontographer. **Prerequisite: ARS 331 or approval of instructor. Lab Fee: \$30.** (Offered Fall)
- ARS 431 *Advanced Graphic Design II* – 3 hrs. Using Adobe Photoshop as a tool for both for illustration and for pre-press work, plus an introduction to Fractal Design’s Painter for illustrations. Also included: final portfolio work. **Prerequisite: ARS 331 or approval of instructor. Lab Fee: \$30.** (Offered Spring)

## MUSIC AND MUSIC EDUCATION PROGRAM

### PROGRAM OBJECTIVES

The Music Program at Alabama A&M University provides opportunities, which assist individuals in meeting aesthetic, social, intellectual and professional needs and interests, in line with the general objectives of the University. The Bachelor of Science degree is awarded to music majors in teaching and non-teaching tracts.

#### The program will:

1. Provide a course of study whereby a student may receive a major in music education, music business, or performance with the necessary subject matter competencies and skills to teach music subjects, direct choral and/or instrumental groups, perform, become knowledgeable about music business practices and generally become an effective musician.
2. Provide training in music theory, applied music, music history and literature, and in music teaching techniques for the preparation of regular classroom teachers who can guide music activities in a self-contained elementary and/or secondary level classroom as well as in a private studio lesson.
3. Foster growth in musical understanding through intelligent and expressive performances, musical creativity, discriminative listening, increased knowledge of musical structure, and music reading.
4. Develop an interest and growing appreciation for the best in music through active participation in choral and instrumental ensembles.
5. Act as a service agency to other departments and schools within the University and to adjacent communities.
6. Increase the musical interest and capability of teachers, students and individuals in the community through the offering of special lectures, workshops, clinics, and similar endeavors.

### PROGRAM OFFERINGS

#### Music Education Teaching Option

The Program in Music Education leads to the Bachelor of Science degree in music education with a concentration in instrumental music or piano/vocal music. Either choice necessitates the completion of a senior recital and other requirements that are stated in this bulletin under the respective program curricula.

### SPECIAL INFORMATION

#### Requirements for Music Majors

1. Applicants who desire to major in music are required to take an entrance exam and complete an audition to assess the extent of their musical proficiency. **No student will be admitted as a major without showing evidence of sufficient preparatory training in at least one performing medium.**
2. Unless granted special permission by the department **chairperson**, all students majoring in **music education** are required to take individual instruction in one area of musical performance throughout their undergraduate years. Therefore, each Music Education major must possess performing skills that can be nurtured to the highest possible quality and standard.

3. In addition to continual study in the major performing area, all majors must study piano for at least two (in some cases, three) consecutive years. At the end of the minimum required study period, the music majors will be given a proficiency test in piano.
4. Keyboard majors in music education must take a minimum of six consecutive semesters of voice. A vocal proficiency test is given after the three years of study voice and vocal.
5. All music majors are required to perform in public during student recitals. They may perform at other times on and off campus, with the approval of their applied music instructor.
6. At the end of each semester, all music majors enrolled in applied music sign up for jury performance on a prepared form. At the scheduled time, the student will play before the music faculty. Exceptions are given to those who meet the standards of the referenced policy. (See Music Majors Handbook)
7. All music majors are required to perform in a senior recital. A hearing of proposed selections will be held before the recital according to recital approval guidelines. (see Music Majors Handbook)
8. Each major is required to be performed in an ensemble each semester. Variations in this requirements are determined by the musical track chosen: music education, or music business, or performance. (See your advisor and the Music Majors Handbook.)
9. Each vocal-choral major is urged to enroll in a foreign language class (French or German) for at least one year.
10. Each semester music majors should take courses in the sequence listed. Music education majors are required to follow the checklist approved by the Alabama State Department of Education.
11. All Music Education majors must take classes according to the program's written curriculum guidelines.

## **GRADUATION AND CERTIFICATION GUIDELINES**

Beginning with the freshman year, all music majors will be advised by an assigned program advisor. Majors should confer frequently with their advisor so that issues related to course requirements in the area of major concentration can be resolved. During the first month of the semester preceding the one in which students expect to graduate, all music majors must meet with the program leader and their advisor in conference(s) for an academic "record check." This checking process involves a complete analysis of all general education core courses, major course requirements, and professional education courses. Each student will use the checklist which was current upon enrollment at the University.

## **MUSIC EDUCATION**

The **Music Education** program prepares teacher candidates with competencies and skills to challenge students and themselves in the elementary and secondary classroom environment. The curricula includes courses in education, music methods, performance, and analysis; a teaching internship; and a senior recital in the major applied area. Music Education is divided into two categories: Vocal/Choral and Instrumental. Piano majors in music education follow the vocal/choral curriculum.

**MUSIC AND MUSIC EDUCATION PROGRAM**  
**VOCAL/CHORAL MUSIC CURRICULUM (P-12)**  
**(Piano and Voice Majors)**  
 130 Semester Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 101	Composition I	3	HIS 101	World History	3
MTH 112	Pre-Calculus Algebra	3	ENG 102	Composition II	3
HED 101	Personal & Comm Hlth or	2	MUS 104	Music Theory II	3
PED	Elective	1	MUS 123	University Choir I	1
ART 101	Art Appreciation	3	MUS	Applied Music-Minor	1
MUS 103	Music Theory I	3	MUS	Applied Music-Major	1
MUS 122	University Choir I	1	PHY 101	Physical Science	3
MUS	Applied Music - Major	1	MUS 101L	Physical Science Lab	<u>1</u>
ORI 101	Survival Skills	<u>1</u>			16
		18			

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
BIO 101	General Biology I	3	FED 212	Human Growth and Dev.	3
BIO 101L	General Biology Lab I	1	ENG 204	World Literature II	3
ENG 203	World Literature I	3	SPE 201	Intro. To Except. Children	3
FED 200	Introduction to Tchr. Ed.	2	FED 215	Instructional Technology	3
MUS 222	University Choir I	1	MUS 223	University Choir	1
MUS 205	Music Theory III	3	MUS 206	Music Theory IV	3
MUS	Applied Music - Major	1	MUS	Applied Music – Major	1
MUS	Applied Music - Minor	1	MUS	Applied Music – Minor	<u>1</u>
PSY 201	General Psychology	<u>3</u>			18
		18			

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ECO 200	Basic Economics	3	ENG 205	General Speech	1
HIS 203	Found. Am. History & Govt	3	FED 300	Foundations of Education	2
MUS 322	University Choir	1	MUS 401	Music for Secondary Schls.	2
MUS 301	Music for Elementary Schls	2	MUS 323	University Choir	1
MUS 303	Music History and Lit	2	MUS 304	Music History and Literature	2
MUS 316	Conducting	1	MUS 320	Form and Analysis	3
MUS 317	Conducting	1	MUS 318	Survey of Band Instruments	2
MUS	Applied Music - Major	1	MUS	Applied Music - Major	1
MUS	Applied Music - Minor	<u>1</u>	MUS	Applied Music – Minor	1
		15	PED	Elective (if needed)	<u>1</u>
					18

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MUS 335 Vocal Diction & Literature	1	SED 495 Internship	12
PSY 403 Educational Psychology	3	MUS 423 University Choir	1
FED 404 Tests and Measurements	3	MUS Applied Music – Major	<u>1</u>
SED 409 Reading In The Cont. Area	3		14
MUS 422 University Choir	1		
MUS Applied Music – Major	1		
MUS Applied Music – Minor	1		
Senior Recital	<u>0</u>		
	13		

#### Electives

MUS 405 Choral Arranging	2
MUS 406 Instrumental Arranging	2
MUS 408 Survey of Black Music	2
MUS 403 Counterpoint	2

\*Major Performing Medium

Note: Piano majors must take 8 hours of piano and 6 hours of voice;

Voice majors must take 8 hours of voice and 6 hours of piano.

### MUSIC EDUCATION INSTRUMENTAL CURRICULUM (All Instruments except Piano) 129 Semester Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills I	1	ENG 102 Composition II	3
ENG 101 Composition I	3	HIS 203 Found of Am. His/Gov	3
MTH 112 Pre-calculus Algebra	3	PHY 101 Physical Science I	3
HED 101 Personal&Comm Hlth or	2	PHY 101L Physical Science Lab	1
PED Elective	1	MUS 118 Voice Class	1
MUS 103 Music Theory I	3	MUS 104 Music Theory II	3
Applied MUS (Major Perf. Medium)	1	MUS 154,150 SymBnd/String Ens	1
MUS 153,149 March Bnd/String Ens.	1	MUS 142 Applied Music-Piano	1
MUS 141 Applied Mus-Piano	<u>1</u>	Applied MUS (Major Perf. Medium)	<u>1</u>
	16		17

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
BIO 101 General Biology I	3	ENG 204 World Literature II	3
BIO 10L General Biology Lab	1	FED 212 Human Growth & Dev	3
ENG 203 World Literature I	3	FED 215 Instructional Technology	3
FED 200 Intro To Tchr. Educ.	2	SPE 201 Intro To Stu Of Exc. Child	3
MUS 205 Music Theory III	3	MUS 206 Music Theory IV	3
PSY 201 General Psychology	3	MUS 242 Applied Music – Piano	1
MUS 141 Applied Music -Piano	1	MUS 254,250 SymBnd/Str. Ens	1
MUS 253,249 Mrching Bnd/Str. Ens	1	Appl MUS (Major Perf Medium)	<u>1</u>
Appl MUS (Major Perf Medium)	<u>1</u>		18
	18		

#### Junior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
ECO 200	Basic Economics	3	ART 101	Art Appreciation	3
PED	Elective (if needed)	1	ENG 205	General Speech	3
FED 300	Foundations of Education	2	HIS 203	Found. Am. Hist.&Gov't	3
MUS 353,349	Mrching Bnd/Str. Ens.	1	MUS 354,350	Voice Class	1
MUS 301	Music for Elem Schools	2	MUS 304	Music History and Literature	2
MUS 303	Music History and Liter.	2	MUS	Brass,WW,PercorString Meth	1
MUS	Brass,WW,Perc.Or String	1	MUS	Brass,WW,PercorString Meth	1
MUS 316	Conducting I	1	MUS 317	Conducting II	1
MUS 320	Form and Analysis	3	Applied MUS	(Major Perf. Medium)	1
Applied MUS	(Major Perf. Medium)	<u>1</u>	MUS 401	Music for Sec. Schools	<u>2</u>
		16 or 17			18

### Senior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
PSY 403	Educational Psychology	3	SED 495	Internship	12
FED 404	Tests and Measurement	3	Applied MUS	(Major Perf. Medium)	1
SED 409	Reading in the Content	3	MUS 454,450	Symph Bnd/String Ens	<u>1</u>
MUS	Brass,WW,Perc.Or String	1			14
MUS 453,449	Mrching Bnd/Str.Ens	1			
Applied MUS	(Major Perf. Medium)	1			
Senior Recital		<u>0</u>			
		12			

### GENERAL ELECTIVES

MUS 124	Percussion Ensemble	1
MUS 126	Jazz Band	1
MUS 128	Woodwind Ensemble	1
MUS 130	Brass Ensemble	1
MUS 131	Brass Ensemble	1
MUS 406	Instrumental Arranging	2
MUS 408	Survey of Black Music	2
MUS 403	Counterpoint	2

### MUSIC BUSINESS

**Music Business** is a non-teaching option, which essentially combines Music Program offerings with School of Business courses. Emphasis is placed on preparing a well-educated musician who will also be able to manage talent, operate a music business, market any musical product and be generally knowledgeable in recording and publishing procedures.

**MUSIC BUSINESS**  
**VOICE / PIANO CURRICULUM**  
 126-128 Semester Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ORI 101	Survival Skills	1	ART 101	Art Appreciaton	3
ENG 101	Composition I	3	ENG 102	Composition II	3
MTH 110	Finite Math <b>or</b>	3	PHY 101	Physical Science	3
MTH 112	Pre-Calculus Algebra		MUS 101L	Physical Science Lab	1
CMP 101	Foundations of Computers	3	HED 101	Personal & Comm. Health	2
HIS 101	World History	3	MUS 104	Music Theory II	3
MUS 103	Music Theory I	3	MUS 142	Applied Music Piano	1
MUS 122	Univer. Choir- Voice Majors	1	MUS 123	Univ. Choir -Voice Majors	1
Applied MUS	(Major Perf. Medium)	<u>1</u>	Applied MUS	(Major Perf. Medium)	<u>1</u>
		18			18

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG 203	Humanities I	3	ENG 204	Humanities II	3
BIO 101	General Biology I	3	ECO 200	Basic Economics	3
BIO 101L	General Biology Lab I	1	ACC 204	Intro to Accounting II	3
MUS 205	Music Theory III	3	MUS 206	Music Theory IV	3
ACC 203	Intro to Accounting I	3	MUS 142	Applied Music Piano	1
MUS 141	Applied Music Piano	1	MUS 223	University Choir	1
MUS 222	University Choir	1	Applied MUS	(Major Perf. Medium)	1
Applied MUS	(Major Perf. Medium)	<u>1</u>	EDU 205	General Speech	<u>3</u>
		16			18

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
MUS 322	University Choir	1	MUS 323	University Choir	1
MUS 303	Music History & Literature	2	MUS 304	Music History & Literature	2
MUS 320	Form and Analysis	3	MUS 403	Counterpoint	2
MGT 207	Legal Ethics and Envir.	3	MGT 213	Computer Appl in Bus	3
MKT 315	Prin of Marketing	3	FIN 315	Prin of Finance	3
MUS 316	Conducting	1	MUS 317	Conducting	1
Applied MUS	(Major Perf. Medium)	1	Applied MUS	(Major Perf. Medium)	1
MUS 335	Vocal Diction & Literature	2	MUS 318	Survey of Band Instruments	2
MUS 241	Applied Music-Piano	<u>1</u>	MUS 241	Applied Music-Piano	<u>1</u>
		16			16

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
MUS 422	University Choir	1	MUS 423	University Choir	1
MUS	Appl Mus (Maj Perf Med)	1	MUS	Appl Mus (Maj Perf Med)	1
<b>Electives</b>		11-12	MUS 352	Entrepreneurship	3
MUS 329	Pub. and Recording	(3)	MUS 400	Senior Recital	1-3
MUS 418	Jazz Theory I	(3)	MUS 470	Music Business Internship	<u>3</u>
MUS 408	Surv of Black Music	(3)			11
LOG 324	Conduct Law <b>or</b>	(3)			
MGT 217	Business Law <b>or</b>	(3)			
MGT 315	Prin. of Management	<u>(3)</u>			
		14			

**MUSIC BUSINESS**  
**INSTRUMENTAL CURRICULUM**  
 (All Instruments Except Piano)  
 126-238 Semester Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>		
ORI 101	Survival Skills I	1	ART 101	Art Appreciation	3
ENG 101	Composition I	3	ENG 102	Composition II	3
MTH 112	Pre-calculus Algebra	3	PHY 101	Physical Science I	3
HIS 101	World History	3	PHY 101L	Physical Science Lab	1
MUS 103	Music Theory I	3	HED 101	Personal and Community Hlth	2
MUS 153	University Mrhing Band	1	MUS 104	Music Theory II	3
MUS 128	Woodwind Ensemble <b>or</b>		Applied MUS	(Major Perf. Medium)	1
MUS 130	Brass Ensemble <b>or</b>		MUS 154	University Symph Band	1
MUS 149	String Ensemble		MUS 128	Woodwind Ensemble <b>or</b>	
Applied MUS	(Major Perf. Medium)	<u>1</u>	MUS 130	Brass Ensemble <b>or</b>	
		15	MUS 149	String Ensemble	
					<u>17</u>

**Sophomore Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>		
ENG 203	Humanities I	3	ENG 204	Humanities II	3
BIO 101	General Biology I	3	ECO 200	Basic Economics	3
BIO 10L	General Biology Lab	1	HIS 203	Found of American Hist.	3
MUS 205	Music Theory III	3	MUS 206	Music Theory IV	3
ACC 203	Intro to Accounting I	3	ACC 204	Intro to Accounting II	3
MUS 141	Applied Music -Piano	1	MUS 142	Applied Music -Piano	1
MUS 253	University Mrhing Band	1	Applied MUS	(Major Perf. Medium)	1
MUS 128	Woodwind Ensemble <b>or</b>		MUS 254	University Symph Band	<u>1</u>
MUS 130	Brass Ensemble <b>or</b>		MUS 128	Woodwind Ensemble <b>or</b>	
MUS 149	String Ensemble		MUS 130	Brass Ensemble <b>or</b>	
Applied MUS	(Major Perf. Medium)	<u>1</u>	MUS 149	String Ensemble	
		16			18

**Junior Year**

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>		
MUS 353	University Mrchng Band <b>or</b>		MUS 354	University Symph Band	1
MUS 128	Woodwind Ensemble <b>or</b>		MUS 128	Woodwind Ensemble <b>or</b>	
MUS 130	Brass Ensemble <b>or</b>	1	MUS 130	Brass Ensemble <b>or</b>	
MUS 149	String Ensemble <b>or</b>		MUS 150	String Ensemble <b>or</b>	
MUS 303	Music History and Liter.	2	MUS 304	Music History and Liter.	2
PED	Elective (if needed)	1	MUS 317	Conducting II	1
MUS 316	Conducting I	1	MUS 403	Counterpoint	2
MUS 320	Form and Analysis	3	MGT 213	Computer Appl in Business	3
MUS 207	Legal Env. & Ethics	3	FIN 315	Prin. of Finance	3
MGT 315	Prin. of Marketing	3	Applied MUS	(Major Perf. Medium)	1
Applied MUS	(Major Perf. Medium)	1	<b>Electives in</b>	Music Literature	
MUS 241	Applied Music – Piano	1		Music Theory	<u>2</u>
<b>Electives in</b>	Music Literature				16
	Music Theory	<u>2-3</u>			
		18 or 19			



### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs</i>
MUS 453 University Mrhing Band <b>or</b>	1	MUS 454 University Symph Band	1
MUS 128 Woodwind Ensemble <b>or</b>		MUS 128 Woodwind Ensemble <b>or</b>	1
MUS 130 Brass Ensemble <b>or</b>		MUS 130 Brass Ensemble <b>or</b>	
MUS 149 String Ensemble <b>or</b>		MUS 150 String Ensemble <b>or</b>	
Applied MUS (Major Perf. Medium)	1	Applied MUS (Major Perf. Medium)	1
ENG 205 General Speech	3	MUS 400 Senior Recital	3
<b>Electives</b>	11 o 12	MUS 470 Mus Bus Internship	<u>4</u>
MUS 352 Entrepreneurship	(3)		10
MUS 329 The Record Company	(3)		
MUS 305 Comp. With Computers	(3)		
MUS 418 Jazz Theory I	(2)		
LOG 324 Contract Law	(3)		
MGT 315 Prin. of Management	<u>(3)</u>		
	16 or 17		

### MUSIC PERFORMANCE

The **Music Performance** Track is a non-teaching option for music majors with exceptional talent on their instrument or voice. Students must audition for the faculty before acceptance. Junior and Senior recitals are required.

### PERFORMANCE

#### INSTRUMENTAL CURRICULUM

122-125 Semester Hours for String Majors

124-126 Semester Hours for Other Instrumental Majors

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem Hrs.</i>
ORI 101 Survival Skills I	1	ART 101 Art Appreciation	3
ENG 101 Composition I	3	ENG 102 Composition II	3
MTH 112 Pre-calculus Algebra	3	PHY 101 Physical Science I	3
HIS 101 World History	3	PHY 101L Physical Science Lab	1
MUS 103 Music Theory I	3	HED 101 Personal and Community Hlth	2
CMP 101 Fund of Computers	3	MUS 104 Music Theory II	3
MUS 153 University Mrhing Band	1	MUS 154 University Symph Band <b>and</b>	1
MUS 128 Woodwind Ensemble <b>or</b>		MUS 128 Woodwind Ensemble <b>or</b>	
MUS 130 Brass Ensemble <b>or</b>		MUS 130 Brass Ensemble <b>or</b>	1
MUS 149 String Ensemble <b>or</b>		MUS 149 String Ensemble	
MUS 124 Percussions Ensemble		MUS 124 Percussions Ensemble	
Applied MUS (Major Perf. Medium)	<u>1</u>	Applied MUS (Major Perf. Medium)	<u>1</u>
	18		18

**Sophomore Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs.</i>
ENG 203	World Literature I	3	ENG 204	World Literature II	3
BIO 101	General Biology I	3	ECO 200	Basic Economics	3
BIO 10L	General Biology Lab	1	MUS 206	Music Theory IV	3
PED 102	Fitness for Life	1	MUS 142	Applied Music -Piano	1
MUS 205	Music Theory III	3	MUS 124	Percussions Ensemble <b>or</b>	1
MUS 141	Applied Music -Piano	1	MUS 128	Woodwind Ensemble <b>or</b>	
MUS 253	University Mrhing Band I	1	MUS 130	Brass Ensemble <b>or</b>	
MUS 124	Percussions Ensemble <b>or</b>		MUS 149	String Ensemble <b>and</b>	
MUS 128	Woodwind Ensemble <b>or</b>		MUS 254	University Symph Band	1
MUS130	Brass Ensemble <b>or</b>		Applied MUS	(Major Perf. Medium)	1
MUS 149	String Ensemble		FRE/GER	Language I	<u>3</u>
Applied MUS	(Major Perf. Medium)	1			16
FRE/GER	Language I	<u>3</u>			
		18			

**Junior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
MUS 353	University Mrhing Band <b>or</b>	1	MUS 354	University Symph Band <b>and</b>	1
MUS 128	Woodwind Ensemble <b>or</b>		MUS 128	Woodwind Ensemble <b>or</b>	
MUS 130	Brass Ensemble <b>or</b>		MUS 130	Brass Ensemble <b>or</b>	1
MUS 149	String Ensemble <b>or</b>		MUS 150	String Ensemble	
MUS 303	Music History and Liter.	2	MUS 126	Jazz Band	
MUS 316	Conducting I	1	CMP	Computer Elective	3
MUS 320	Form and Analysis	3	MUS 304	Music History and Liter.	2
ENG 205	General Speech	3	MUS 317	Conducting II	1
Applied MUS	(Major Perf. Medium)	1	MUS 403	Counterpoint	2
PED	Elective	1	MUS 300	Junior Recital	2
MUS 241	Applied Music – Piano	1	Applied MUS	(Major Perf. Medium)	1
CMP	Elective	<u>3</u>	MUS 242	Applied Music – Piano	1
		16	MUS 318	Survey of Band Instruments	<u>2</u>
					16

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem Hrs</i>
MUS 453	University Mrhing Band <b>or</b>	1	MUS 454	University Symph Band	1
MUS 128	Woodwind Ensemble <b>or</b>		MUS 128	Woodwind Ensemble <b>or</b>	1
MUS 130	Brass Ensemble <b>or</b>		MUS 130	Brass Ensemble <b>or</b>	
MUS 149	String Ensemble <b>or</b>		MUS 150	String Ensemble <b>or</b>	
MUS	Appl Mus (Maj Perf Med)	1	MUS	Appl Mus (Maj Perf Med)	1
ENG 205	General Speech	3	MUS 306	Composition with Computers	2
CMP	Computer Elective	3	MUS 418	Jazz Theory II	3
<b>Electives</b>		5-6	MUS 400	Senior Recital	3
MUS 305	Comp. With Computers	(2)	CMP	Computer Elective	<u>3</u>
MUS 418	Jazz Theory I	(3)			14
MUS 310.2	Literature and Pedagogy	<u>(3)</u>			

13 or 14

**PERFORMANCE**  
**VOCAL/PIANO CURRICULUM**  
 121-123 Semester Hours

**Freshman Year**

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
ORI 101 Survival Skills	1	ART 101 Art Appreciation	3
ENG 101 Composition I	3	ENG 102 Composition II	3
MTH 110 Finite Math <b>or</b>	3	PHY 101 Physical Science	3
MTH 112 Pre-Calculus Algebra		MUS 101L Physical Science Lab	1
HIS 101 World History	3	PED 102 Fitness for Life	1
MUS 103 Music Theory I	3	MUS 104 Music Theory II	3
MUS 122 Univ Choir (Voice Majors)	1	MUS 123 University Choir	1
CMP 101 Foundations of Computers	3	HED 101 Personal & Comm. Health	2
MUS 141 Applied Music Piano	<u>1</u>	MUS 142 Applied Music Piano <b>or</b>	<u>1</u>
		MUS 152 Applied Music Voice	
MUS 151 Applied Music Voice			18
	18		

**Sophomore Year**

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
BIO 101 General Biology I	3	MUS 223 Univ Choir (Voice Majors)	1
BIO 101L General Biology Lab I	1	ECO 200 Basic Economics	3
ENG 203 World Literature I	3	ENG 204 World Literature II	3
ENG 205 General Speech	3	MUS 206 Music Theory IV	3
MUS 205 Music Theory III	3	MUS 242 Applied Music – Major	1
FRE/GER Language I	3	FRE/GER Language II	3
MUS 141 Applied Music - Major	1	MUS Appl Mus (Major Perf. Med)	1
MUS 222 Univ Choir (Voice Majors)	1	PED Elective	<u>1</u>
MUS Appl Mus (Major Perf. Med)	<u>1</u>		16
	19		

**Junior Year**

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
MUS 322 Univ Choir (Voice Majors)	1	MUS 323 Univ Choir (Voice Majors)	1
MUS 303 Music History & Literture	2	MUS 304 Music History & Literture	2
MUS 316 Conducting	1	MUS 317 Conducting	1
MUS 335 Vocal Diction & Literature	2	MUS 318 Survey of Band Instruments	2
MUS 320 Form and Analysis	3	MUS 403 Counterpoint	2
MUS 241 Appl Music-Piano	1	MUS Appl Mus (Major Perf. Med)	1
MUS Appl Mus (Major Perf. Med)	1	MUS 242 Appl Music-Piano	1
FRE/GER Language I	3	FRE/GER Language II	3
<b>MUS Elective</b>	<b>2 or 3</b>	MUS 300 Junior Recital	<u>2</u>
MUS 309 Opera Studies	(2)		
MUS 408 Survey of Black Music	(2)		15
MUS 115 Vocal-Jazz Ensemble	<u>(1)</u>		
	16 or 17		

<b>Senior Year</b>					
<i>First Semester</i>			<i>Second Semester</i>		
		<i>Sem. Hrs.</i>			<i>Sem Hrs</i>
MUS 422	University Choir (Voice Majors Only)	1	MUS 423	University Choir (Voice Majors Only)	1
MUS	Appl Mus (Maj Perf Med)	1	MUS 400	Senior Recital	3
			MUS	Appl Mus (Maj Perf Med)	1
<b>Electives</b>		<b>8</b>	<b>Electives</b>		<b>5</b>
MUS 305	Comp. With Computers	(2)	MUS 306	Comp. With Computers	(2)
MUS 418	Jazz Theory I	(3)	MUS 419	Jazz Theory II	(3)
MUS 115	Vocal Jazz Ensemble	<u>(1)</u>	MUS 116	Vocal Jazz Ensemble	<u>(1)</u>
		10			10

## COURSE DESCRIPTIONS FOR MUSIC MAJORS AND MINORS

- MUS 103     *Music Theory I* – 3 hrs. This course is arranged to provide training in music theory and fundamentals of sight singing. Melodic and rhythmic dictation and keyboard are administered to further provide laboratory experiences for musical growth. **Prerequisite: None.** (Offered Fall)
- MUS 104     *Music Theory II* – 3 hrs. A continuation of MUS 103. More advanced aural, visual, and theoretical subjects are studied. **Prerequisite: MUS 103.** (Offered Spring)
- MUS 118     *Voice Class* – 1 hr. The essentials of voice production, breath control, and diction are stressed. The student is given a chance to critically observe classmates and to observe successful vocalists through the use of multimedia resources. Several compositions are assigned each semester to all students enrolled, in order to develop mastery of vocal essentials. A competency-based approach to instruction is used. **Prerequisite: None.** (Offered Fall)
- MUS 153     *University Marching Band* – 1 hr. This course is designed to give students training and experience in playing various instruments in marching formation techniques and field pageantry. The Marching Band makes frequent public appearances on and off campus. During football season, it provides half-time entertainment and aesthetic exposure of the highest quality. The Band also participates in national and state observances and often shares its talents with adjacent communities during holiday periods. **Prerequisite: Audition.** (Offered Fall)
- Other Marching Band course numbers are MUS 253, 353 and 453.*
- MUS 154     *Symphonic Band* – 1 hr. This course is designed for the Spring and/or Summer semesters. The organization strives for superb musicianship and is presented in several concerts during the second semester on and off- campus. **Prerequisite: Audition during the First Semester.** (Offered Spring and Summer). Other Symphonic Band course numbers are Mus 254, 354 and 454.
- MUS 205     *Music Theory III* – 3 hrs. This course consists of a study of diatonic seventh chords and their inversions, harmonization of melodies and figured bass lines, and the use of dominant sevenths in four-parts writing. Melodic, harmonic and dictation is included. Analytic techniques are studied through various Classical and Romantic compositions. **Prerequisites: MUS 103 and MUS 104.** (Offered Fall)
- MUS 206     *Music Theory IV* – 3 hrs. Borrowed chords, secondary dominants, and other chromatic harmonies studied. Other topics include fundamentals of orchestration, ninths, elevenths and thirteenth, non-tertian harmonies, and serial music. Dictation, keyboard harmony and analysis are included. **Prerequisite: MUS 205.** (Offered Spring)
- MUS 208     *Upper Brasswinds Class* – 1 hr. This course focuses on sight reading, technique, tone and other factors necessary for competency with upper brasswinds. (Laboratory fee). **Prerequisite: None.** (Offered Fall)

- MUS 210 *Lower Brasswinds Class* – 1 hr. Designed for the study of instruments which fall into the general category of lower brasses, the class is intended to give the student broad experiences with developing knowledge and pedagogy about these instruments. (Laboratory fee). **Prerequisite: MUS 208.** (Offered Spring)
- MUS 212 *Percussion Class* – 1 hr. Snare drumming rudiments are emphasized. Tympani fundamentals such as pedal and hand tuning, and other matters related to percussion techniques, are covered in this course. (Laboratory Fee). **Prerequisite: None.** (Offered Spring)
- MUS 301 *Music for Elementary Schools* – 2 hrs. This course provides students with basic knowledge and experience necessary for handling music activities at the upper and lower grade elementary school levels as well as at the middle school level. Songs, singing, games, rhythmic and creative activities, dramatizations and suitable recordings are stressed. Students are afforded the opportunity to develop skills with melody and chording instruments. Attention is given to developing skills with melodies and chording instruments and to special instructional approaches for providing musical learning to atypical children. (For music majors and minors only). **Prerequisites: None.** (Offered Fall)
- MUS 303 *Music History and Literature I* – 2 hrs. A general survey of music history from the tenth century to the Baroque era. Social and political data, art, and literature are correlated with certain phrases of the course. Listening is a very significant part of this course. **Prerequisites: MUS 103, MUS 104, MUS 205, and MUS 206.** (Offered Fall)
- MUS 304 *Music History and Literature II* – 2 hrs. Special emphasis is placed on contributions from the Classical, Romantic and Contemporary eras. Listening is a major component of the course also. **Prerequisite: MUS 303.** (Offered Fall)
- MUS 312 *Woodwinds Class (Single Reeds)* – 1 hr. The student is introduced to single-reed woodwinds, along with applicable pedagogy and literature. (Laboratory fee). **Prerequisites: Junior classification, major or minor.** (Offered Fall)
- MUS 313 *Woodwinds Class (Double Reeds)* – 1 hr. The student is introduced to double-reed woodwinds, along with applicable pedagogy and literature. (Laboratory fee). **Prerequisite: MUS 312.** (Offered Spring)
- MUS 314 *Strings Class I* – 1 hr. This is a practical performance course in string instruments. Elementary performing ability on violin, viola, cello, and string bass will be emphasized. Fundamentals of string playing and pedagogy are also taught. **Prerequisite: For music majors only.** (Offered Fall)
- MUS 315 *Strings Class II* – 1 hr. This is a practical performance course in string instruments. Intermediate performing ability on violin, viola, cello, and string bass will be emphasized. Fundamentals of string playing and pedagogy are also taught. **Prerequisite: MUS 314.** (Offered Spring)
- MUS 316 *Conducting* – 1 hr. In this course, the details of expression, score reading (choral and instrumental), words and symbols, program building, and other factors are emphasized. **Prerequisite: None.** (Offered Fall)
- MUS 317 *Conducting* – 1 hr. Serious attention is given to the more practical aspects of conducting as students are granted opportunities to direct various ensembles during rehearsals and public performances. **Prerequisite: MUS 316.** (Offered Spring)

- MUS 318 *Survey of Band Instruments* – 2 hrs. The student who concentrates on vocal music is given an opportunity in this course to develop a basic knowledge of band instruments. He/she learns to use finger charts, and is given other important and useful information. Where possible, a “hands-on” approach is adopted. Some attention is given to fretted instruments. (Laboratory fee)  
**Prerequisite: None.** (Offered Spring)
- MUS 335 *Introduction to Vocal Diction and Literature* – 2 hrs. Solo and ensemble works from various periods in history by various American and international composers will be studied, to provide students with broad exposure through listening and performing. **Prerequisites: MUS 103, MUS 104, and MUS 118.** (Offered Spring)
- MUS 320 *Form and Analysis* – 3 hrs. This course is an intense study of musical structure and design in Baroque, Classical, Romantic, and Contemporary compositions. Students analyze and compare small and large forms. **Prerequisites: MUS 205 and MUS 206.** (Offered Fall)
- MUS 401 *Music for Secondary Schools* – 2 hrs. This course focuses on techniques for teaching music activities at the secondary level. Choral and instrumental repertoire, media techniques, the matter of public performance and the various essentials allied with them, as well as activities for the general music class are stressed. Attention is also given to the history, philosophy, curriculum and administration of music education in the secondary school. (Offered Spring)
- MUS 403 *Counterpoint* – 2 hrs. This is a general course in the study and writing of 18<sup>th</sup> century counterpoint. Score analysis and listening are included. (Offered Spring)
- MUS 405 *Choral Arranging* – 2 hrs. In this course, the student will be introduced to the process of arranging music in various styles and for various vocal combinations. **Prerequisite: MUS and MUS 206.** (Offered Fall)
- MUS 406 *Instrumental Arranging* – 2 hrs. Similar to a course in orchestration, the student will be introduced to the process of arranging music for various instrumental combinations and styles. **Prerequisites: MUS 305 and MUS 306.** (Offered Spring)
- MUS 408 *Survey of Black Music* – 2 hrs. Persons enrolled in this course will become acquainted with the contributions of a number of African-American and Afro-Caribbean composers. Musical examples will be studied and stylistic characteristics identified. **Prerequisite: None.** (Offered Spring)

### COURSE FEES

**Music Lab Fee: \$10 (MUS 101, MUS 208, MUS 210, MUS 212, MUS 301, MUS 312, MUS 318 and MUS 327)**

**Applied Music: \$25**

### GENERAL MUSIC COURSES

- MUS 101 *Music Appreciation* - 3 hrs. Fundamentals of music such as melody, harmony, rhythm, form meter, and notation are included in this course. These elements take a deeper meaning as students are introduced to musical works, which portray them. The biographies of selected composers and some of their compositions are highlighted so as to enhance musical understanding. Literary and graphic arts are integrated to assist the student in correlating various cultural influences with music in certain times and places. Music listening is stressed and classroom activities are often coordinated with out-of-class assignments like television programs, lyceum attractions, student recitals and community concerts. **Prerequisite: None.** (Offered Fall, Spring, and Summer)

- MUS 327 *Music Fundamentals for Classroom Teachers - 2 hrs.* Opportunity is provided to broaden music knowledge and to acquaint the student with basic theoretical principles required of teachers responsible for classroom music instruction. Special emphasis is placed on piano skills, conducting, developing skills with melody and chording instruments as well as fretted instruments. In this course, the student will acquire the basic knowledge and experience necessary for handling music activities at the upper and lower grade elementary school levels as well as at the middle school level. Songs, singing, games, rhythmic and creative activities, dramatizations and suitable recordings will be stressed. **(Early Childhood, Elementary, and Special Education Majors Only).** **Prerequisite: None.** (Offered Fall, Spring, and Summer)

## MUSICAL ORGANIZATIONS

Students in all schools at the University are invited to enroll in any musical organization. Unless otherwise indicated, auditioning for the director of a specific group is the basic requirement. Merely enrolling as a member of an ensemble does not constitute complete acceptance nor guarantee continuous participation. If rehearsals, engagements, and other responsibilities are not approached with an attitude of loyalty, promptness and commitment, membership could be terminated. The size of the group might be a determining factor. The director of a specific group makes the final decision in all matters related to the functioning of each ensemble (and not the group officers, wherever these may exist).

- MUS 122 *The University Choir I - 1 hr.* The University Choir provides students with the opportunity to experience participation in a cooperative activity. Fundamental vocal training posture, breathing, diction, expressive interpretation, and tone are emphasized in rehearsals. Music reading is given special attention also. Convocations, off-campus concerts, religious services, and an annual Christmas Musicale are but a few instances when this group makes public appearances. **Prerequisite: Have some singing experience; previous participation in a musical organization is a plus.** (Offered Fall)

*Other fall course numbers are MUS 222, 322 and 422.*

- MUS 123 *The University Choir II - 1 hr.* The University Choir affords students the opportunity to experience participation in a cooperative activity. Fundamental vocal training, posture, breathing, diction, expressive interpretation, and tone are emphasized in rehearsals. Music readings is given special attention also. Convocation, off-campus concerts, religious services, and an annual Christmas Musicale are but a few instances where public appearances are made by this group. **Prerequisite: Have some singing experience; previous participation in a musical organization is a plus.** (Offered Spring and Summer)

*Other spring course numbers are MUS 223, 323 and 423.*

- MUS 113 *The Male Glee Club - 1 hr.* This organization is comprised of selected male voices from the University Choir and the University at large. A male quartet is usually lifted from this group. **Prerequisite: MUS 123 or MUS 124.** (Offered Fall)

- MUS 114 *The Male Glee Club II - 1 hr.* This organization is comprised of selected male voices from the University Choir and the University at large. A male quartet is usually lifted from this group. **Prerequisite: MUS 123 or MUS 124.** (Offered Spring and Summer)

- MUS 115 *Vocal Jazz Ensemble I - 1 hr.* This choral group is comprised of selected students who sing various vocal-jazz arrangements by different arrangers. Performances are on and off campus. **Prerequisite: Audition.** (Offered Fall)

- MUS 116 *Vocal Jazz Ensemble II - 1 hr.* This course is an extension of MUS 115. Selected arrangements are at an advanced level. **Prerequisite: Audition.** (Offered Spring and Summer)
- MUS 117 The Female Ensemble – 1 hr. Selected voices with music-reading aptitude and a willingness to adhere to the highest standards of musical interpretation and preparation will be admitted to membership in this group.
- MUS 118 The Female Ensemble – 1 hr. Selected voices with music-reading aptitude and a willingness to adhere to the highest standards of musical interpretation and preparation will be admitted to membership in this group.
- MUS 124 *Percussion Ensemble – 1 hr.* The Percussion Ensemble is made up of music majors and minors who are concentrating in the study of percussion instruments. Other from the large instrumental group may participate at the discretion of the director. (Offered Spring)
- MUS 126 *The Stage Band - 1 hr.* Stage Band member is confined to music majors and minors; or in special instances, to persons who are performing members in one of the large musical organizations. This group is established to provide students with laboratory exposure to jazz, standard literature in the popular music field and some varieties of rock music. However, good musicianship is never sacrificed. (Offered Spring)
- MUS 128 *The Woodwind Ensemble – 1 hr.* Woodwind instrumentalists with above average playing skill and experience, and cooperative attitude, a sense of dependability and punctuality, and good sight reading ability may contact the director for consideration as a member of the woodwind ensemble. (Offered Fall and Spring)
- MUS 103-131 *Brass Ensemble – 1 hr.* Persons who play in this ensemble are selected on the basis of musical competence, which includes music-reading and playing skills. In addition, it is expected that all players will meet their responsibilities with punctuality and maturity. (Offered Fall and Spring)
- MUS 153 *University Marching Band – 1 hr.* This course is designed to give students training and experience in playing various instruments in marching formation techniques and field pageantry. The Marching Band makes frequent public appearances on and off campus. During the football season, it provides half-time entertainment and aesthetic exposure of the highest quality. The Band also participates in national and state observances and often shares its talent with adjacent communities during holiday periods. **Prerequisite: Audition.** (Offered Fall)
- MUS 154 *Wind Symphony/Symphonic Band – 1 hr.* Symphonic Band is designed to have students perform a wide variety of symphonic band literature. Auditions are held at the close of the first semester athletic activities. This group is presented in several concerts during the second semester on the campus, as well as in other locales. The organization strives for superb musicianship. **Prerequisite: Audition.** (Offered Spring and Summer)
- MUS 149-150 *String Ensemble – 1 hr.* This performing organization for string players with playing experience. Auditions are required before enrolling. The group performs string literature from various musical eras on and off campus. (Offered Fall and Spring)
- Other string ensemble numbers are Mus 249-250, 349-350 and 449-450.*
- MUS 173-174 *Guitar Ensemble – 1 hr.* Guitar Ensemble is designed to give students training and exercise in guitar ensemble literature. The ensemble performs on and off campus.



## APPLIED MUSIC LISTING

In each instance where one enrolls in applied music, the course number is to be written on the schedule of courses, plus the course title (Applied Music). The name of the specific instrument must be written in parenthesis beside the course title for each applied music course listed. COURSES MUST BE TAKEN IN SEQUENTIAL ORDER.

Any student enrolled in the University may begin or continue the study of an instrument within the Program. At each level in applied studies, assignments are made according to individual needs and rate of musical growth.

### Violin

MUS 133	<b>Applied Music I (Violin) - 1 hr.</b> Assigned studies. <b>Prerequisite: an audition</b> (Offered Fall)
MUS 134	<b>Applied Music II (Violin) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 133</b> (Offered Spring)
MUS 233	<b>Applied Music III (Violin) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 134</b> (Offered Fall)
MUS 234	<b>Applied Music IV (Violin) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 233</b> (Offered Spring)
MUS 333	<b>Applied Music V (Violin) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 234</b> (Offered Fall)
MUS 334	<b>Applied Music VI (Violin) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 333</b> (Offered Spring)
MUS 433	<b>Applied Music VII (Violin) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 334</b> (Offered Fall)
MUS 434	<b>Applied Music VIII (Violin) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 433</b> (Offered Spring)

### Viola

MUS 135	<b>Applied Music I (Viola) - 1 hr.</b> Assigned studies. <b>Prerequisite: An audition.</b> (Offered Fall)
MUS 136	<b>Applied Music II (Viola) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 135</b> (Offered Spring)
MUS 235	<b>Applied Music III (Viola) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 136</b> (Offered Fall)
MUS 236	<b>Applied Music IV (Viola) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 235</b> (Offered Spring)
MUS 335	<b>Applied Music V (Viola) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 236</b> (Offered Fall)
MUS 336	<b>Applied Music VI (Viola) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 335</b> (Offered Spring)
MUS 435	<b>Applied Music VII (Viola) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 336</b> (Offered Fall)
MUS 436	<b>Applied Music VIII (Viola) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 435</b> (Offered Spring)

### Cello

MUS 137	<b>Applied Music I (Cello) - 1 hr.</b> Assigned studies. <b>Prerequisite: An audition.</b> (Offered Fall)
MUS 138	<b>Applied Music II (Cello) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 137</b> (Offered Spring)
MUS 237	<b>Applied Music III (Cello) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 138</b> (Offered Fall)
MUS 238	<b>Applied Music IV (Cello) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 237</b> (Offered Spring)
MUS 337	<b>Applied Music V (Cello) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 238</b> (Offered Fall)
MUS 338	<b>Applied Music VI (Cello) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 337</b> (Offered Spring)
MUS 437	<b>Applied Music VII (Cello) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 338</b> (Offered Fall)
MUS 438	<b>Applied Music VIII (Cello) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 437</b> (Offered Spring)

### Double Bass

MUS 139	<b>Applied Music I (Double Bass) - 1 hr.</b> Assigned studies. <b>Prerequisite: An audition.</b> (Offered Fall)
MUS 140	<b>Applied Music II (Double Bass) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 139</b> (Offered Spring)
MUS 239	<b>Applied Music III (Double Bass) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 140</b> (Offered Fall)
MUS 240	<b>Applied Music IV (Double Bass) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 239</b> (Offered Spring)
MUS 339	<b>Applied Music V (Double Bass) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 240</b> (Offered Fall)
MUS 340	<b>Applied Music VI (Double Bass) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 339</b> (Offered Spring)
MUS 439	<b>Applied Music VII (Double Bass) - 1 hr.</b> Assigned studies. <b>Prerequisite: MUS 340</b> (Offered Fall)

**MUS 440**      **Applied Music VIII (Double Bass) - 1hr.** Assigned studies. **Prerequisite:** MUS 439 (Offered Spring)

**Piano**

MUS 141      *Applied Music I (Piano)* – 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. **(Laboratory Fee).**  
**Prerequisite: None.** (Offered Fall only)

MUS 142      *Applied Music II (Piano)* – 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. **(Laboratory Fee).**  
**Prerequisite: MUS 141.** (Offered Spring, and Summer)

MUS 241      *Applied Music III (Piano)* – 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. **(Laboratory Fee).**  
**Prerequisite: MUS 142.** (Offered Fall only)

MUS 242      *Applied Music IV (Piano)* – 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. **(Laboratory Fee).**  
**Prerequisite: MUS 241.** (Offered Spring, and Summer)

MUS 341      *Applied Music V (Piano)* – 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. **(Laboratory Fee).**  
**Prerequisite: MUS 242.** (Offered Fall only)

MUS 443      *Applied Music VI (Piano)* – 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. **(Laboratory Fee).**  
**Prerequisite: MUS 341.** (Offered Spring, and Summer)

MUS 441      *Applied Music VII (Piano)* – 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. **(Laboratory Fee).**  
**Prerequisite: MUS 342.** (Offered Fall only)

MUS 442      *Applied Music VIII (Piano)* – 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. **(Laboratory Fee).**  
**Prerequisite: MUS 441.** (Offered Spring, and Summer)

**Voice**

MUS 151      *Applied Music I (Voice)* – 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. **(Laboratory Fee).**  
**Prerequisite: None.** (Offered Fall only)

MUS 152      *Applied Music II (Voice)* – 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. **(Laboratory Fee).**  
**Prerequisite: MUS 151.** (Offered Spring, and Summer)

- MUS 251 *Applied Music III (Voice)* – 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. **(Laboratory Fee).**  
**Prerequisite:** MUS 152. (Offered Fall only)
- MUS 252 *Applied Music IV (Voice)* – 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. **(Laboratory Fee).**  
**Prerequisite:** MUS 251. (Offered Spring, and Summer)
- MUS 351 *Applied Music V (Voice)* – 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. **(Laboratory Fee).**  
**Prerequisite:** MUS 252. (Offered Fall only)
- MUS 352 *Applied Music VI (Voice)* – 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. **(Laboratory Fee).**  
**Prerequisite:** MUS 351. (Offered Spring, and Summer)
- MUS 451 *Applied Music VII (Voice)* – 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. **(Laboratory Fee).**  
**Prerequisite:** MUS 352. (Offered Fall only)
- MUS 452 *Applied Music VIII (Voice)* – 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. **(Laboratory Fee).**  
**Prerequisite:** MUS 451. (Offered Spring, and Summer)

In the following applied music courses, basic technical principles are stressed in accordance with the student's current performance ability. Instructional strategies are chosen or designed thereafter to improve technical competence developmentally and to maximize the student's growth and technical proficiency, musical understanding, expressive performance and musical taste. The same degree of learning strategies are utilized in the areas of acquaintance with stylistic characteristics, musical chronology, and composer variety.

### **Saxophone**

- MUS 155 **Applied Music I (Saxophone) - 1 hr. Prerequisite: None** (Offered Fall Only)
- MUS 156 **Applied Music II (Saxophone) - 1 hr. Prerequisite: MUS 155** (Offered Spring and Summer)
- MUS 255 **Applied Music III (Saxophone) - 1 hr. Prerequisite: MUS 156** (Offered Fall Only)
- MUS 256 **Applied Music IV (Saxophone) - 1 hr. Prerequisite: MUS 255** (Offered Spring and Summer)
- MUS 355 **Applied Music V (Saxophone) - 1 hr. Prerequisite: MUS 256** (Offered Fall Only)
- MUS 356 **Applied Music VI (Saxophone) - 1 hr. Prerequisite: MUS 355** (Offered Spring and Summer)
- MUS 455 **Applied Music VII (Saxophone) - 1 hr. Prerequisite: MUS 356** (Offered Fall Only)
- MUS 456 **Applied Music VIII (Saxophone) - 1 hr. Prerequisite: MUS 455** (Offered Spring and Summer)

### **French Horn**

- MUS 159 **Applied Music I (French Horn) - 1 hr. Prerequisite: None** (Offered Fall Only)
- MUS 160 **Applied Music II (French Horn) - 1 hr. Prerequisite: MUS 159** (Offered Spring and Summer)

MUS 259	<b>Applied Music III (French Horn) - 1 hr. Prerequisite: MUS 160 (Offered Fall Only)</b>
MUS 260	<b>Applied Music IV (French Horn) - 1 hr. Prerequisite: MUS (Offered Spring and Summer)</b>
MUS 359	<b>Applied Music V (French Horn) - 1 hr. Prerequisite: MUS 260 (Offered Fall Only)</b>
MUS 360	<b>Applied Music VI (French Horn) - 1 hr. Prerequisite: MUS 359 (Offered Spring and Summer)</b>
MUS 459	<b>Applied Music VII (French Horn) - 1 hr. Prerequisite: MUS 360 (Offered Fall Only)</b>
MUS 460	<b>Applied Music VIII (French Horn) - 1 hr. Prerequisite: MUS 459 (Offered Spring and Summer)</b>

**Trumpet**

MUS 161	<b>Applied Music I (Trumpet) - 1 hr. Prerequisite: None. Must be taken in sequence (Offered Fall Only)</b>
MUS 162	<b>Applied Music II (Trumpet) - 1 hr. Prerequisite: MUS 161 Must be taken sequence (Offered Spring and Summer)</b>
MUS 261	<b>Applied Music III (Trumpet) -1 hr. Prerequisite: MUS 162 Must be taken in sequence (Offered Fall Only)</b>
MUS 262	<b>Applied Music IV (Trumpet) - 1 hr. Prerequisite: MUS 261 Must be taken in sequence (Offered Spring and Summer)</b>
MUS 361	<b>Applied Music V (Trumpet) - 1 hr. Prerequisite: MUS 262 Must be taken in sequence (Offered Fall Only)</b>
MUS 362	<b>Applied Music VI (Trumpet) - 1 hr. Prerequisite: MUS 361 Must be taken in sequence (Offered Spring and Summer)</b>
MUS 461	<b>Applied Music VII (Trumpet) -1 hr. Prerequisite: MUS 362 Must be taken in sequence (Offered Fall Only)</b>
MUS 462	<b>Applied Music VIII (Trumpet) - 1 hr. Prerequisite: MUS 461 Must be taken in sequence (Offered Spring and Summer)</b>

**Guitar**

MUS 191	<b>Applied Music I (Guitar) - 1 hr. Prerequisite: None (Offered Fall)</b>
MUS 192	<b>Applied Music II (Guitar) - 1 hr. Prerequisite: MUS 191 Must be taken in sequence (Offered Spring)</b>
MUS 291	<b>Applied Music III (Guitar) - 1 hr. Prerequisite: MUS 192 Must be taken in sequence (Offered Fall)</b>
MUS 292	<b>Applied Music IV (Guitar) - 1 hr. Prerequisite: MUS 291 Must be taken in sequence (Offered Spring)</b>
MUS 391	<b>Applied Music V (Guitar) - 1 hr. Prerequisite: MUS 292 Must be taken in sequence (Offered Fall)</b>
MUS 392	<b>Applied Music VI (Guitar) - 1 hr. Prerequisite: MUS 391 Must be taken in sequence (Offered Spring)</b>
MUS 491	<b>Applied Music VII (Guitar) - 1 hr. Prerequisite: MUS 392 Must be taken in sequence (Offered Fall)</b>
MUS 492	<b>Applied Music VIII (Guitar) - 1 hr. Prerequisite: MUS 491 Must be taken in sequence (Offered Spring)</b>

**Clarinet**

MUS 171	<b>Applied Music I (Clarinet) - 1 hr. Prerequisite: None (Offered Fall, Spring, and Summer)</b>
MUS 172	<b>Applied Music II (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)</b>
MUS 271	<b>Applied Music III (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)</b>
MUS 272	<b>Applied Music IV (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)</b>
MUS 371	<b>Applied Music V (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)</b>
MUS 372	<b>Applied Music VI (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)</b>

- MUS 471 **Applied Music VII (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 472 **Applied Music VIII (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

### Percussion

- MUS 181 **Applied Music I (Percussion) - 1 hr. Prerequisite: None** (Offered Fall, Spring, and Summer)
- MUS 182 **Applied Music II (Percussion) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 281 **Applied Music III (Percussion) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 282 **MUS 282 Applied Music IV (Percussion) – 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall, Spring, and Summer)
- MUS 381 **Applied Music V (Percussion) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 382 **Applied Music VI (Percussion) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 481 **Applied Music VII (Percussion) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 482 **Applied Music VIII (Percussion) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

### Tuba

- MUS 183 **Applied Music I (Tuba) - 1 hr. Prerequisite: None** (Offered Fall, Spring, and Summer)
- MUS 184 **Applied Music II (Tuba) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 283 **Applied Music III (Tuba) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 284 **Applied Music IV (Tuba) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 383 **Applied Music V (Tuba) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 384 **Applied Music VI (Tuba) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 483 **Applied Music VII (Tuba) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 484 **Applied Music VIII (Tuba) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

### Bassoon

- MUS 187 **Applied Music I (Bassoon) - 1 hr. Prerequisite: None** (Offered Fall, Spring, and Summer)
- MUS 188 **Applied Music II (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 287 **Applied Music III (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 288 **Applied Music IV (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 387 **Applied Music V (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 388 **Applied Music VI (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)
- MUS 487 **Applied Music VII (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 488 Applied Music VIII (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

### Trombone

**MUS 189 Applied Music I (Trombone) - 1 hr. Prerequisite: None** (Offered Fall, Spring, and Summer)

**MUS 190 Applied Music II (Trombone) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 289 Applied Music III (Trombone) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 290 Applied Music IV (Trombone) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 389 Applied Music V (Trombone) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 390 Applied Music VI (Trombone) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 489 Applied Music VII (Trombone) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 490 Applied Music VIII (Trombone) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

### Euphonium

**MUS 143 Applied Music I (Euphonium) - 1 hr. Prerequisite: None** (Offered Fall, Spring, and Summer)

**MUS 144 Applied Music II (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 243 Applied Music III (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 244 Applied Music IV (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 343 Applied Music V (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 344 Applied Music VI (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 443 Applied Music VII (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 444 Applied Music VIII (*Euphonium*) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

### Flute

**MUS 145 Applied Music I (Flute) - 1 hr. Prerequisite: None** (Offered Fall, Spring, and Summer)

**MUS 146 Applied Music II (Flute) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 245 Applied Music III (Flute) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 246 Applied Music IV (Flute) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 345 Applied Music V (Flute) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 346 Applied Music VI (Flute) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 445 Applied Music VII (Flute) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

**MUS 446 Applied Music VIII (Flute) - 1 hr. Prerequisite: Must be taken in sequence**  
(Offered Fall, Spring, and Summer)

- MUS 001**      *Independent Applied Music I* --1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. - 1 hr. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- MUS 021**      *Independent Applied Music II* -- 1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- MUS 031**      *Independent Applied Music III* -- 1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- MUS 041**      *Independent Applied Music IV* -- 1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. **Prerequisite: None.** (Offered Fall, Spring, and Summer)
- MUS 174,274,374,474**      *Independent Music Study* – 1, 2, or 3 hrs. This course designed to meet the needs of special music students in special circumstances. Enrollment is possible only with permission of the program lead and chairperson.

**DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND RECREATION  
PROGRAM**

8 Thomas M. Elmore Health Science Building  
(256) 372-5376

**MISSION**

The Department of Health, Physical Education and Recreation provides course work in related areas of health, physical activity, sports, and leisure activities. It provides training and insight so as to prepare candidates who will demonstrate competencies in general education and physical education alike.

The objective of the physical education program is to prepare professionals who:

1. Demonstrate knowledge of the historical, philosophical, psychological and sociological perspectives of physical education.
2. Demonstrate knowledge of the biological and other sciences required to understand the human body and principles of human movement.
3. Demonstrate knowledge and show appreciation for wellness and related aspects of physical fitness.
4. Demonstrate possession of the skills needed for the assessment, development, and maintenance of cardiovascular and physical fitness for a lifetime.
5. Possess the competencies needed to plan and teach activities for motor skill development designed for multicultural and least restrictive educational settings.
6. Possess the skills needed to teach a variety of motor skill activities.
7. Demonstrate ability to organize, implement, administer, and evaluate the physical education program at all grade levels.
8. Demonstrate mastery of knowledge and skills needed for the prevention and treatment of injuries.
9. Demonstrate knowledge of and the ability to apply techniques of coaching and officiating.
10. Demonstrate knowledge of current trends in physical education and an awareness of the need to be informed.

**DEGREE OFFERINGS**

The Program embraces sufficient scope in content and variety in activities, as well as provides particular insights into the intellectual perspective of teaching physical skills, to meet the demands of the profession. The program offers areas of study leading to a Bachelor of Science degree in 1) Teaching Program in Physical Education (eligible for the state of Alabama Class "B" Teacher Certificate) and 2) Non-Teaching Program in Physical Education, with minors in Aquatics, sports management, and exercise physiology required.

The Teaching Degree Concentration serves those students who pursue a K-12 teaching career. The Non-Teaching Concentration serves those students who desire a professional career in sports management or exercise physiology, or as an aquatics director. While every effort is made to offer courses as indicated in the course description, it sometimes becomes necessary to cancel courses. In the event of course cancellation, students should consult their academic advisors for selection of alternate courses.



## PHYSICAL EDUCATION (K-12)

### Teaching Concentration

127 Credit Hours

#### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 101 Composition I	3	ENG 102 Composition II	3
BIO 101 General Biology	3	ENG 205 General Speech	3
BIO 101L General Biology Lab	1	PSY 201 General Psychology	3
HIS 101 World History	3	HIS 203 Fnds. Of Amer. Gov't./His.	3
MTH 112 Pre-Calculus Algebra	3	PED 206 Gymnastic/Rhythms	1
HIS 101 World History I or II	(3)	ECO 200 Basic Economics	3
ART 101 Art Appreciation or	(3)	HED 101 Personal/Comm. Health or	2
MUS 101 Music Appreciation	3	MSC Military Science	(2)
ORI 101 Survival Skills	<u>1</u>	PED Activity Courses	<u>(2)</u>
	17		17

#### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG Literature Elective	3	ENG Literature Elective	3
BIO 221 Human Anatomy/Phys.	3	SPE 201 Intro. To Except. Children	3
BIO 221L Human Anatomy/Phys. Lab.	1	FED 212 Human Growth/Dev.	3
FED 200 Intro. To Teacher Education	2	PED 134 Intermediate Swimming	2
PED 112 Tennis/Bowling	1	PED 136 Soccer/Softball	1
PED 114 Aerobics/Weight Training	1	PED 202 Officiating I	1
PED 132 Aquatic/Begin. Swimming	1	PED 302 Foundations of HPER	<u>3</u>
PED 137 Golf: For Business and Life	2		16
FED 215 Inst. Technology	<u>3</u>		
	17		

#### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PED 139 Volleyball/Basketball	1	PSY 403 Education Psychology	3
PED 206 Gymnastics/Rhythms	1	SED 409 Reading in Content Area	3
PED 300 Foundations of Education	2	PED 301 Administration of HPER	3
PED 225 Ind., Dual, Team Sports	2	PED 306 M/M in Secondary PE	3
PED 304 Applied Ant./Kinesiology	3	PED 409 Exercise Physiology	3
PED 305 M/M in Elementary PE	3	PED 207 Officiating II	<u>1</u>
PED 308 Prevention Care Sports Injury	<u>3</u>		16
	17		

#### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
FED 404 Tests and Measurement	3	PED 495 Internship	<u>12</u>
PED 412 Motor Behavior	3		12
PED 420 Research on Teaching PE	3		
PED 422 Principles of Coaching	3		
PED 427 Adaptive Physical Education	<u>3</u>		
	15		

**Physical Education**  
(Non-Teaching Concentration)  
124 Semester Hours

**Freshman year**

<i>First Semester</i>	<i>Sem Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 101 Composition I	3	ENG 102 Composition II	3
BIO 101 General Biology	3	BIO 102 General Biology	3
BIO 101L General Biology Lab	1	BIO 102L General Biology Lab	1
HIS 101 World History	3	HIS 203 Fnds of Amer Govt	3
MTH 112 PreCalculus Algebra	3	CMP 101 Fnds of Comp Info Sys	3
HED 101 Pers/Comm. Health <b>or</b>	(2)	ART 101 Art Appreciation <b>or</b>	(3)
PED Activity Courses <b>or</b>	(2)	MUS 101 Music Appreciation	(3)
MSC 101 Military Science	(2)		16
	<u>16</u>		

**Sophomore Year**

<i>First Semester</i>	<i>Sem Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG Literature Elective	3	ENG Literature Elective	3
PSY 201 General Psychology	3	CHE 112 Applied Chemistry	3
BIO 221 Human Anatomy	3	CHE 112L Applied Chemistry Lab	1
BIO 221 Human Anatomy Lab	1	PED 134 Intermediate Swimming	2
PED 112 Tennis/Bowling	1	PED 136 Soccer/Softball	1
PED 114 Aerobics/Weight Train	1	PED 137 Golf for Business/Life	2
PED 132 Aquatics/Begin Swim	1	PED 202 Officiating I	1
PED Advisor Approved Elect	<u>3</u>	PED Advisor Approved Elect	<u>3</u>
	16		16

**Junior Year**

<i>First Semester</i>	<i>Sem Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PED 225 Indiv,Dual, Team Sports	3	PED 302 Fnds of HPER	3
ENG 205 General Speech	3	PED 304 Applied Anatomy/Kines	3
ECO 200 Basic Economics	3	PED 308 Prevnt/Care Sports Injur	3
PED 207 Officiating II	1	PED 422 Principles of Coaching	3
PED 139 Volleyball/Basketball	1	PED Advisor Approved Elect	<u>3</u>
PED 206 Gymnastics/Rhythms	1		15
PED Advisor Approved Elect	<u>3</u>		
	15		

**Senior Year**

<i>First Semester</i>	<i>Sem Hrs</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
PED 412 Motor Behavior	3	PED 409 Exercise Physiology	3
PED 427 Adaptive Physical Ed	3	PED 420 Research in Physical Ed	3
PED 310 Tests and Measurement	3	PED 445 Externship in Phy Ed	6
PED 301 Administration of HPER	3	PED Advisor Approved Elects	<u>3</u>
PED Advisor Approved Elects	<u>3</u>		15
	15		

## COURSE DESCRIPTIONS

- HED 101 *Personal and Community Health* – 2 hrs. This course is designed to broaden the candidate's background regarding facts and the principles necessary in the solution of several health issues. This course surveys a number of problems affecting individual, family, and community health including infectious diseases and STD's, First Aid, alcohol and drug abuse, consumer education, and nutrition. **Prerequisite: None.** (Offered Fall, Spring and Summer)
- HED 401 *Substance Abuse & HIV/AIDS* – 2 hrs. A survey of alcohol and other drugs (AOD), and HIV/AIDS facts. Information will be provided on the short-and long-term effects of AOD and HIV/AIDS on the body, incidences of AOD use/addiction and HIV/AIDS, symptoms of AOD involvement and HIV/AIDS. Biological, social and behavioral factors affecting addiction and treatment of AOD and HIV/AIDS will be discussed. Resource information will be provided on community services for people who are addicted to AOD, and people with HIV/AIDS. **Prerequisite: None.** (Offered Summer)
- PED 103 *Fitness for Life* – 1 hr. This course acquaints all age groups with cardiovascular fitness, facts and fallacies regarding exercise and health and a number of evaluation techniques as each of these relate to physical and total conditioning. Candidates will develop and participate in personal fitness programs. **Prerequisite None.** (Offer Fall, Spring and Summer.)
- PED 112 *Tennis/Bowling* – 1 hr. This course is designed to teach methods, procedures, techniques, and safety precautions in tennis and bowling. Specialized terminology scoring techniques and skill development will be included. (Offered Fall, Spring and Summer)
- PED 114 *Aerobics/Weight Training* – 1 hr. This course is designed to introduce candidates to correct techniques and principles related to building personal fitness using weight training. Candidates will also study the effects of aerobic conditioning, techniques for measuring aerobic capacity, participate in aerobic activities, and design personal aerobic conditioning program. (Offered Fall, Spring, Summer)
- PED 132 *Beginning Swimming/Aquatic Educations* – 1 hr. This course is designed to introduce the student into a beginning level swimming class. History, theory, and basic stroke mechanics will be covered, on both lectures and skill instruction sessions. (Offered Fall, Spring and Summer)
- PED 134 *Intermediate Swimming* – 2 hrs. This course is designed to both educate the student on the theories and mechanics of swimming, while offering an emphasis in training. This course will be an introduction to swimming as a lifetime fitness activity. History will be an introduction to swimming as a lifetime fitness activity. History, theory, and basic stroke mechanics will be covered, on both lectures ad skill instruction sessions. (Offered Fall)
- PED 136 *Soccer/Softball* – 1 hr. This course includes rules, skills, techniques and application of these sports. The course provides opportunities for student participation at a personal level of intensity and enhancement of cognitive knowledge to promote lifetime participation. (Offered Spring)
- PED 137 *Golf: For Business and Life* – 2 hrs. This course is designed to provide students with the basic principles, rules, history, etiquette, terminology, skill development, safety hints, playing strategies, courtesies of the game, and to teach them how to not only enjoy the game but, how to use it as a business tool as well. **Prerequisite None.** (Offered Fall, Spring, and Summer)
- PED 139 *Volleyball/Basketball* – 1 hr. This course provides instruction in the fundamental skills, playing strategies, and care and selection of equipment in the sports of volleyball and basketball. **Prerequisite: None.** (Offered Fall and Spring)

- PED 202 *Officiating I & II* – 2 hrs. This course is designed to introduce you to the art and professional requirements of officiating intramural and athletic contests. The traditional fall/seasonal sports of flag football, basketball, wrestling, and volleyball are activities covered in this course. A weekly schedule for developing the necessary skills required of each sport is included. **Prerequisite: None.** (Offered Spring)
- PED 206 *Rhythms/Gymnastics* – 1 hr. Rhythms and Gymnastics is designed to assist you with developing the skill necessary to teach rhythmic activities, dance, and gymnastics. Performance and safety will also be objectives. The student will learn to organize materials and develop techniques that are essential to utilizing personal and general space. The student will develop coordination, self-expression, creativity and endurance. Various concepts associated with basic locomotors and nonlocomoter movements are examined and experienced in detail. **Prerequisite: None.** (Offered Spring)
- PED 225 *Individual, Dual, and Team Sports* – 2 hrs. This course focuses on the skill development, organizational strategies, instructional techniques and techniques for evaluating performance in a variety of individual, dual, and team sports. (Offered Spring, Summer, Fall)
- PED 301 *Administration in PE/Athletics* – 3 hrs. This course is designed to assist the student in developing an insight into the meaning and organizational skills required for organizing and administering programs of physical education and/or other related programs. Specific strategies for selection, supervision, and evaluation of personnel, budgeting, and space utilization are included. The conduct of programs within legal limits is given significant consideration. **Prerequisite: None.** (Offered Fall)
- PED 305 *Methods and Materials in Elementary Physical Education* – 3 hrs. This course is designed to prepare students to teach physical education to children in grades K-6. It will use a developmental approach and stress exploratory methods of teaching young children a variety of games, dance, gymnastics, and health-related fitness activities. **Practicum required. Prerequisite: None.** (Offered Fall)
- PED 302 *Foundations* – 3 hrs. This course is designed to assist the student in developing a historical perspective of events and developments prior to and after 1885 in Physical Education. This course also includes the development of a personal philosophy of education and physical education through and analysis of aims, goals and principles. **Prerequisite: None.** (Offered Spring)
- PED 304 *Anatomy & Kinesiology* – 3 hrs. This is a course designed to provide the student with a broad background regarding mechanical and muscular aspects of human motion. In addition, the course provides the student with a laboratory component to ensure a means for application and analysis. **Prerequisites: BIO 101, BIO 101L, BIO 221, BIO 221L and HED 101.**
- PED 306 *Materials and Methods in Secondary Physical Education* – 3 hrs. This course is designed to assist in the development of skills necessary to teach secondary school physical education. The student will learn to organize materials and develop teaching techniques that are essential to the educational growth and development of each individual, through a guided program of physical activities. **Practicum required. Prerequisites: PED 202, PED 206, 225, 422.** (Offered Spring)
- PED 308 *Prevention/Care of Sports Injuries* – 2 hrs. The purpose of this course is to provide participants with the first aid knowledge and skills necessary to help provide a safe environment of athletes, while they are participating in sports. In addition this course will provide students with the knowledge and skills necessary to work as a first responder in an emergency situation, to help sustain life, reduce pain, and minimize the consequences of injury or sudden illness until professional or medical help arrives. **Prerequisites: BIO 101 and BIO 101L.** (Offered Fall)

- PED 312 *Test and Measurement in HPER* – 3 hrs. A study of the use of tests, measurements, and evaluation techniques for the formative and summative assessment of fitness development, skill development, cognitive learning, and affective behaviors in physical education and sports. Laboratory experiences and computerized assessment strategies will be included. Knowledge and use of Bloom's Taxonomy. **Prerequisite: None.** (Offered Spring)
- PED 409 *Physiology of Exercises* – 3 hrs. This course is designed to provide the student with a broad background regarding the physiological effects of physical activity on the human body. The course also includes a laboratory component to ensure a means for application and analysis by the student **Prerequisite: BIO 101, BIO 101L, and CHE 111, CHE 111L.** (Offered Fall)
- PED 412 *Motor Behavior* – 3 hrs. A study of neuromuscular development, perceptual motor skill development, and motor patterns which result in proficient movement in a variety of specific motor behaviors. The measurement, analysis, and evaluation of motor behavior will also be emphasized. **Prerequisite: None.** (Offered Fall and Spring).
- PED 420 *Introduction to Research on Teaching in Physical Education* – 3 hrs. A comprehensive based description of teaching research in Physical Education. This course brings to bear the important principles connected to teaching activity and movement in education. Its focus is on understanding and grasping the unique variables which makes for effective and efficient teaching in the gym. (Offered Fall and Spring)
- PED 422 *Principles of Coaching/Intramurals* – 3 hrs. This course is designed to provide a comprehensive approach to organizing and administering an intramural program. The course emphasizes the key elements of historical development, organizational structure, budgeting, and tournament designed seasonal activities. Also provides an intense study of the specific aspects of coaching as a person and as a professional, based on sound theories and practices pertaining to athletic performance, athletic management, and relationships which are necessary for successful coaching. **Prerequisite: None.** (Offered Spring)
- PED 427 *Adaptive Physical Education* – 3 hrs. The course is designed for students to examine the role of physical education in meeting the special needs, interest and abilities of students with various physical, social, mental, and emotional differences. Also provided is in-depth information regarding how to record medical histories, growth patterns, levels of motor learning, and how to design individualized physical education programs. (Offered Fall)
- PED 496 *Basketball Officiating Workshop: Two-Man Mechanics* – 2 hrs. This course will focus on the basic fundamentals of basketball officiating through the use of two-man mechanics. Emphasis will be placed on rules, mechanics, floor coverage, responsibilities, and terminology. Students will use the intramural department as a lab for practical experience. **Prerequisite: None.** (Offered Summer)
- PED 497 *Basketball Officiating Workshop: Three-Man Mechanics* – 2 hrs. This course will focus on the basic fundamentals of basketball officiating through the use of three-man mechanics. Emphasis will be placed on rules, mechanics, floor coverage, responsibilities, and terminology. Students will use the intramural department as a lab for practical experience. **Prerequisite: None.** (Offered Summer)
- PED 495 *Internship* – 12 hrs.

## **SCHOOL OF ENGINEERING AND TECHNOLOGY**

Dr. Arthur J. Bond, Dean  
227 Engineering & Technology Building  
256-372-5560

### **INTRODUCTION**

The School of Engineering and Technology provides educational opportunities for students with interests in preparing for teaching or for industrial careers in technical areas. The various curricula in the School have been planned and organized in such a way that students may receive not only broad, intensive training in their major fields, but also that they may develop significantly in liberal subject matter aspects. The School of Engineering and Technology offers programs of study in three engineering disciplines, three engineering technology disciplines, industrial technology with both teaching and non-teaching options, and computer science.

### **MISSION/OBJECTIVES**

The mission of the School of Engineering and Technology is integrated within and fully supports the mission of Alabama A&M University. The mission of the School of Engineering and Technology is to provide the educational settings that allow well-prepared and dedicated students the opportunity to become educated in the sciences, engineering disciplines, and related competencies so that they may become professional practitioners of engineering and engineering technologies in those fields offered by Alabama A&M University. Upon completion of the program chosen, students will be sufficiently prepared to become productive professionals in the industrial, governmental or military sector, or, if they so desire, they will be eminently prepared to enter graduate school.

### **GENERAL PROGRAM REQUIREMENTS**

The School of Engineering and Technology requirements for admission and graduation are the following:

1. Satisfactory completion of entrance examinations.
2. The successful completion of the required semester hours of course work as prescribed in the curriculum with a cumulative grade point average of not less than 2.00.
3. A minimum grade point average of 2.00 in the major field of specialization.

### **PROGRAM OFFERINGS**

The Department of Civil Engineering offers a professional engineering program leading to a Bachelor of Science degree in Civil Engineering (BSCE). Candidates for graduation from this program are required to take the Fundamental of Engineering (FE) examination, which is the first step toward registration as a Professional Engineer. The Department of Electrical Engineering offers a professional engineering program leading to a Bachelor of Science degree in Electrical Engineering (BSEE). The Department of Mechanical Engineering offers a professional engineering program leading to a Bachelor of Science degree in Mechanical Engineering (BSME). Graduates of both programs are eligible to take the Fundamental of Engineering (FE) examination.

The Department of Technology offers programs of instruction in engineering technology and industrial technology. The Engineering Technology program provides instruction in civil, electrical, and mechanical engineering technology at the baccalaureate degree level and leads to the Bachelor of Science in Engineering Technology (BSET). The Industrial Technology program offers programs of study with a teaching option in Technical or Technology Education, and a non-teaching option with concentrations in:

- Graphics Communication and Printing Production

- Industrial Safety Management
- Manufacturing Quality Management
- Mechanical Drafting Design
- Technical Industrial Training
- Applied Technology Management.

Both options lead to a Bachelor of Science in Industrial Technology (BSIT) degree. This program prepares students for either teaching or leadership positions in vocational/technical education programs at the middle school, high school, and post secondary levels or management level positions in industry.

The Department of Computer Science provides a course of study designed to give students a thorough grounding in both theoretical and practical areas of computer science. Computer Science continues to be a rapidly growing and changing field with a wide variety of occupational opportunities. The degree conferred on graduates of this program is the Bachelor of Science in Computer Science (BSCS).

Every student enrolled in a major offering of the School of Engineering and Technology must have an advisor. All students have as their advisors one of the instructors in their major curricula, or some other well qualified professional who understands the curriculum.

It is important that students enrolled in the School of Engineering and Technology are aware of the fact that not all courses listed in their curriculum will be offered every semester or year. As some courses will be offered only in alternate years, students will do well to consult with their advisors, as printed outlines in the respective curricula may not carry this information.

The School of Engineering and Technology offers some courses in an evening division. Work in the evening division is identical in quality and credit to that given in the day division. Students enrolled in the day program may elect to enroll in the evening division for selected courses, but preference is given to persons who work during the day and wish to further their education by taking selected subjects or completing requirements for an associate or baccalaureate degree. While every effort is made to offer courses as indicated in the course descriptions, it sometimes becomes necessary to cancel courses. In the event of course cancellation, students should consult their academic advisors for selection of alternate courses.

## **COOPERATIVE EDUCATION/INTERNSHIPS**

Academic credit up to 6 semester hours will be offered for cooperative education work experience. The average will be three semester hours of credit toward graduation for each of two work periods that a co-op student may complete in business or industry and with proper evaluation.

Cooperative work experience is identified in the following manner. The first digit of the number refers to the year of study; and the second digit is the first, second, or third work period in the particular year -- CWE 130, the summer of the freshman year; CWE 210, 220, 230, and on through the four years of work periods.

## **SPECIAL FEES AND ASSESSMENTS**

All students enrolled in the School of Engineering and Technology (SET) are expected to purchase books promptly at the beginning of the term, or as soon after the beginning of the term as the books become available in the book store. Students enrolled in SET can expect to pay from \$175 upward for books, instruments and supplies each semester.

In addition to purchasing the required books for courses, students will be expected to purchase such tools, aprons, or coveralls as may be required of those enrolled in specified areas. In some areas, the students will be expected also to purchase instruments and special supplies. Students will also pay special course fees each semester in varying amounts, depending upon the curriculum in which they are enrolled. A list of fees is published in this catalog.

### **COURSE PREFIXES**

CE -	Civil Engineering
CET -	Civil Engineering Technology
CWE -	Cooperative Education Work Experience
EE-	Electrical Engineering
EET -	Electrical Engineering Technology
EGC -	Engineering General Course
IT -	Industrial Technology
MDT -	Mechanical Drafting and Design Technology
ME-	Mechanical Engineering
MET -	Mechanical Engineering Technology
TBC -	Technology Basic Course
TGC -	Technology General Course





**DEPARTMENT OF CIVIL ENGINEERING**

305 ETB  
256-372-5565

**INTRODUCTION**

Civil Engineering is the oldest traditional engineering profession. Civil engineers play an essential role in helping humanity realize basic needs for shelter, mobility and productivity. Specifically, civil engineers design and construct public buildings, bridges, highways, water distribution systems, subways, dams, tunnels and almost every structure that needs to be designed for strength and durability. As civil engineers enhance our standard of living, they command the respect and appreciation of the community. Civil Engineers contribute to the improvement of human environment and help make our activities productive, safe, and enjoyable.

Civil Engineering is a very broad field; it draws from the basic sciences of mathematics, chemistry, and physics. The scope and complexity of civil engineering, as measured by the degree of involvement and interaction with other disciplines and professions, continues to grow with that of the nation's economy and population. This field has always contributed to, and benefited from the advancement of science and technology.

**MISSION/OBJECTIVES**

The Department is committed to preparing its students for immediate entry into the engineering profession as well as into graduate programs of study. The Department is also committed to research in order to place its faculty and students at the forefront of development in the profession of civil engineering. This brings the latest advances into the classroom positioning students to lead the profession into the twenty-first century.

The program offers opportunities to students who previously had limited access to education and trains these students to contribute to the civil engineering profession. It thereby reflects the University's scope and mission.

**EDUCATIONAL OBJECTIVES**

The objectives of the Civil Engineering program are to produce graduates who:

1. Successfully practice civil engineering in industry and/or government;
2. Are competent enough to pass the Fundamentals of Engineering (FE) Examination leading to professional registration;
3. Are able to pursue graduate degrees; and
4. Recognize the need for scholarship, leadership and service to society.

**GENERAL PROGRAM REQUIREMENTS**

Entering Civil Engineering majors are required to report to the department office and interview with the department chairperson as soon as possible. Each student admitted to the Department of Civil Engineering is assigned an advisor for the duration of the program. The advisor will advise the student with proper course sequencing, course planning, and other academic matters. Each student should have an active file in the department office, which includes the student's enrollment information and a copy of his/her Student Scholastic Record (SSR) Form. The SSR should be updated each semester either during the period of academic advisement or pre-registration by the advisor. The advisor works with the students to keep track of their progress toward the degree. Prerequisites are required for approval of any advanced courses. Students are advised to earn a grade of C or better in all prerequisites before proceeding to any advanced courses.

## PROGRAM OFFERINGS

The Department offers a major leading to the Bachelor of Science in Civil Engineering and provides basic courses in all of the following areas:

- Structural Analysis and Design
- Geotechnical Engineering
- Environmental Engineering and Water Resources
- Transportation Engineering

The first two years of studies are primarily concentrated on the scientific and mathematical principles that form the basis of engineering practice. The last two years focus on the applications of these principles to engineering design and practice. Computer applications are integrated throughout the curriculum.

## FINANCIAL ASSISTANCE/SCHOLARSHIPS

Financial assistance is available through the Office of Student Financial Aid in three major types of aid: Federal Aid, State Aid and Institutional Aid. The School of Engineering and Technology has offered the following scholarships to eligible engineering students in the recent past and anticipates continuation of the same in the future:

- The Boeing Scholarship.
- The American Society of Civil Engineers, Alabama Section awards a scholarship to a senior in Civil Engineering.
- The Birmingham Construction Industry Authority awards a scholarship to an eligible engineering major interested in construction.
- Alabama Space Grant Consortium Scholarship.
- Undergraduate/graduate research assistantships through various grants and research contracts.

In addition, a variety of scholarships are offered through national competitions by organizations such as American Institute of Steel Construction, American Concrete Institute, and American Society of Civil Engineers etc. Announcements are posted on the department bulletin board, as they are available.

## COOPERATIVE EDUCATION/INTERNSHIPS

All Civil Engineering majors are encouraged to obtain **professional work experience** prior to graduation through Cooperative Education program administered by the Career Development Services. In the past Civil Engineering students have participated in Cooperative Education assignments at such locations as the US Corp of Engineers, Huntsville and Mobile, AL; Alabama Department of Transportation, Huntsville, Gadsden and Montgomery, AL; US Bureau of Reclamation, Denver, CO; and many other Government and private organizations. Interested students should contact the Chairperson, Department of Civil Engineering and the Director of Cooperative Education, Alabama A&M University.

## STUDENT/PROFESSIONAL ORGANIZATIONS

All civil engineering majors are strongly encouraged to join the Student Chapter of the American Society of Civil Engineers (ASCE). This professional organization is concerned about the professional, social, and financial security of its members throughout their lives. The ASCE Student Chapter is the most important and active student organization in the Department. The Chapter members participate in the local branch meetings and other activities,

such as Habitat for Humanity projects and tutoring underclassmen. The Chapter also attends the yearly Southeastern Regional ASCE Student Conference and competes with other civil engineering students around the region. The faculty advisor, Mr. James Foreman, assists the Chapter in activity planning and other matters.

### **SPECIAL PROGRAMS/AWARDS/RECOGNITIONS**

The Huntsville Branch of the American Society of Civil Engineers (ASCE) recognizes A&M Student Civil Engineer of the Year at the annual Engineers Week Banquet. Only active members of the A&M ASCE Student Chapter are considered for nomination by the Civil Engineering Department of AAMU. The American Society of Civil Engineers, Alabama Section awards a scholarship to a senior in Civil Engineering.

### **SPECIAL ADMISSIONS CRITERIA**

Students must meet all admission requirements established by the University and the School of Engineering and Technology and must satisfy the following requirements:

1. Attain an adequate mathematics and sciences background, such as algebra, geometry, trigonometry, physics, and chemistry, preferably in high school;
2. Meet requirements to exit University College; and
3. Complete EGC 101 Engineering Drawing and Graphics, MTH 125 Calculus I, PHY 105 General Physics I, and CHE 101/101L General Chemistry I/Lab.

### **GRADUATION/PROGRAM REQUIREMENTS**

To meet the requirements for graduation, a student must successfully complete the required 128 semester hours of course work as prescribed in the curriculum with an overall cumulative grade point average of 2.00. *A minimum grade point average of 2.00 is also required in all CE and EGC courses. Students must take the Fundamentals of Engineering (FE) Examination prior to graduation.*

- **University General Education Curriculum** (58 semester credit hours): ENG 101, ENG 102, ENG 205, ECO 200, CHE 101, CHE 101L, CHE 102, CHE 102L, PHY 105, PHY 106, MTH 125, MTH 126, MTH 227, MTH 238, two history electives, one literature elective, a second literature elective or humanities elective (may be chosen from philosophy, foreign language, art, music, theatre, dance), physical education (2) or health or military science, and ORI 101 (exempted for transfer students).
- **School of Engineering Core requirements:** None.
- **Major Requirements for Bachelor of Science in Civil Engineering**, (70 semester credit hours): EGC 101, EGC 104, EGC 204, EGC 205, EGC 206, EGC 207, EGC 305, EE 201, EE 201L, CE 101, CE 201, CE 304, CE 305, CE 306, CE 308, CE 310, CE 401, CE 402, CE 404, CE 408, CE 410, CE 424, CE 470, and CE Elective (3).
- **Requirements for Minor in Civil Engineering:** Not available.

## CIVIL ENGINEERING (BSCE)

128 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs</i>
ORI 101 Survival Skills	1	ENG 102 Composition II <sup>1</sup>	3
ENG 101 Composition I <sup>1</sup>	3	MTH 126 Calculus II	4
CHE 101 General Chemistry I	3	CE 101 Intro. to Civil Engineering	3
CHE 101L General Chemistry I Lab	1	CHE 102 General Chemistry II	3
<sup>2</sup> Health Science/PE/MSC Elective	2	CHE 102L General Chem. II Lab	1
EGC 101 Eng. Drawing & Graphics	3	PHY 105 Physics I	<u>4</u>
MTH 125 Calculus I	<u>4</u>		<u>18</u>
	17		

<sup>1</sup>ENG103 and 104 may be taken by international students

<sup>2</sup>FAS 101, HED 101, NHM 103, OR PE 1xx

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs</i>
MTH 227 Calculus III	4	ENG 205 General Speech	3
PHY 106 Physics II	4	MTH 238 Applied Diff. Equations	3
EGC 104 Computer Programming	3	EE 201 Linear Circuit Analysis I	3
EGC 205 Statics	3	EE 201L Linear Circuit Anal. I Lab	1
CE 201 Surveying	<u>3</u>	EGC 206 Dynamics	3
	17	EGC 207 Strength of Materials	<u>3</u>
			<u>16</u>

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs</i>
<sup>3</sup> History Sequence Elective	3	<sup>3</sup> History Sequence Elective	3
ECO 200 Basics of Economics	3	CE 304 Environmental Eng.	3
EGC 204 Engineering Analysis	3	CE 305 Hydrogeology	3
EGC 305 Fluid Mechanics	3	CE 308 Soil Mechanics	3
CE 306 Structural Analysis	<u>3</u>	CE 310 Transportation Systems	3
	15	CE 401 Structural Steel Des	<u>3</u>
			<u>18</u>

<sup>3</sup> Any History Sequence

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs</i>
<sup>4</sup> Humanities (Lit.) Elective	3	<sup>4</sup> Humanities/Fine Arts Elective	3
CE 402 Reinforced Concrete Des.	3	CE 404 Hydraulic Eng. & Des.	3
CE 408 Foundation Design	3	CE 470 Civil Eng. Design Proj.	3
CE 410 Transportation Eng. & Des.	3	<sup>5</sup> CE Elective	<u>3</u>
CE 424 Civil Engineering Practice	<u>3</u>		<u>12</u>
	15		

<sup>4</sup> At least one literature elective; the second Humanities/Fine Arts Elective may be chosen from literature, philosophy, foreign language, art, music, theatre, or dances.

<sup>5</sup>The CE Elective may be chosen from senior level CE courses or approved by the advisor.

### COURSE DESCRIPTIONS

- CE 101 *Introduction to Civil Engineering* – 3 hrs. Introduction to civil engineering profession and societies. Engineering ethics. Engineering problem solving, systems of units and dimensions. Technical presentations – written and oral. Basic design concepts (team approach). Personal computer skills. Local field trips and guest lectures are also included. **Prerequisite: Consent of instructor.** (Offered Spring)
- CE 201 *Surveying* – 3 hrs. (2 hours lecture and 2 hours lab.) A study of measurement and error calculation, leveling, traverse and area computation, topographic mapping, triangulation, highway, public land and construction surveying. Computer applications are included. **Co-requisite: EGC 101 or consent of instructor.** (Offered Fall)
- CE 304 *Environmental Engineering* – 3 hrs. A survey of environmental pollution and control involving the air, land, and water environments; the management of the environment; and other problems concerning water and sewage treatment, solid waste disposal and treatment. **Prerequisites: CHE 102, CHE 102L, and MTH 238; or consent of instructor.** (Offered Spring)
- CE 305 *Hydrogeology* – 3 hrs. The study of a hydrologic cycle with emphasis on precipitation and runoff, stream flow and groundwater distribution. Geology of groundwater occurrence, groundwater contamination, development and management are also covered. **Prerequisite: EGC 305; Co-requisite: EGC 204.** (Offered Spring)
- CE 306 *Structural Analysis* – 3 hrs. An analysis of stresses and deflections in statically determinate structures caused by fixed and moving loads. Study of influence lines and loading criteria for beams and plane trusses. Introduction to classical analysis of indeterminate structures including the slope deflection and moment distribution methods. Application of computer techniques to structural problems is required. **Prerequisites: MTH 227, MTH 238, EGC 101 and EGC 207.** (Offered Fall and Summer)
- CE 308 *Soil Mechanics* – 3 hrs. (2 hours lecture and 2 hours lab.) A study of origin, formation, classification, identification and subsurface exploration of soil. Physical and mechanical properties of soils, shear strength, consolidation, settlement, and bearing capacity are also covered. **Prerequisite: EGC 207.** (Offered Spring)
- CE 310 *Transportation Systems* – 3 hrs. Transportation systems including land, air and water transportation for passenger and freight movement; functions of transportation systems; traveled way, vehicle, controls and terminals; transportation system planning, design, operation and maintenance are addressed in this course. **Prerequisites: EGC 101 and CE 201.** (Offered Spring)
- CE 401 *Structural Steel Design* – 3 hrs. Introduction to the design of steel structures to include behavior of members and their connections. Theoretical and practical basis for proportioning members are addressed. **Prerequisite: CE 306.** (Offered Spring)
- CE 402 *Reinforced Concrete Design* – 3 hrs. A study of the theory and design of reinforced concrete members. Design considerations for concrete bridges and buildings are included. **Prerequisite: CE 306.** (Offered Fall)
- CE 404 *Hydraulic Engineering and Design* – 3 hrs. A study of the similitude, and flow measurement; open channel flow, pipe flow and their applications; and design of various elements of hydraulic structures. **Prerequisites: EGC 207 and EGC 305; Co-requisite: EGC 204.** (Offered Spring)
- CE 405 *Concrete and Aggregates* – 3 hrs. (2 hours lecture, 2 hours lab.) A study of engineering properties of plain concrete; influence of cement, aggregates, water and mixtures on the properties of fresh and hardened concretes; mix design; behavior under various types of loading and environments. **Prerequisite: EGC 207.** (Offered upon sufficient demand– Consult Advisor)

- CE 406 *Computer Analysis of Structures* – 3 hrs. This course focuses on flexibility and stiffness methods of analysis. Development of matrix methods for both trusses and rigid frames and use of the computer in structural analysis, including finite element method are included. **Prerequisites: CE 306 and EGC 104.** (Offered upon sufficient demand – Consult Advisor)
- CE 408 *Foundation Design* – 3 hrs. The study of shallow and deep foundation elements, determination of bearing capacity of spread footings, mat and pile foundations. This course also includes instruction on drilled caissons and piers as well as lateral earth pressure and the design of retaining structures. **Prerequisites: CE 308, Co-requisite: CE 402.** (Offered Fall)
- CE 409 *Public Health Engineering* – 3 hrs. A study of the engineering aspects involved in the control of the environment for the protection of health and the promotion of the comfort of man. Discussion will include communicable disease control, air pollution, refuse disposal, industrial hygiene, and radiological health hazards. **Prerequisite: CE 304.** (Offered upon sufficient demand – Consult Advisor)
- CE 410 *Transportation Engineering and Design* – 3 hrs. A study of engineering and design basics for highway transportation; elements of highway transportation and their characteristics; drivers; vehicles, volume, density, speed, and travel time; design for safety, service, and economy; highway alignment, cross section and geometric design elements. **Prerequisites: CE 310; Co-requisite: EGC 204.** (Offered Fall)
- CE 411 *Urban Transportation Planning* – 3 hrs. A study of functions and elements of urban transportation including modeling trip generation, trip attraction, modal split and network assignment; integrated models, and computer applications. **Prerequisites: EGC 204, CE 310 or consent of instructor.** (Offered Fall, Odd Years)
- CE 412 *Pavement Systems* – 3 hrs. A study of the design of highway and airport pavement systems; subgrades, subbases and bases; flexible and rigid pavements; drainage and earthwork; pavement evaluation and maintenance. **Prerequisites: EGC 207 and CE 310.** (Offered Fall, Even Years)
- CE 413 *Construction Management* – 3 hrs. An introduction to construction project planning and scheduling by network diagrams. Estimating and project control fundamentals; various equipment and productivity are included. **Prerequisite: Senior standing.** (Offered Fall, Even Years)
- CE 414 *Design of Timber Structures* – 3 hrs. A study of wood as an engineering design material. Beams, columns, plywood design, and glued laminated structural members as used in actual design and construction are covered. **Prerequisite: CE 306.** (Offered Spring)
- CE 424 *Civil Engineering Practice* – 3 hrs. An introduction to the practical concepts necessary to a practicing engineer, such as engineering ethics, engineering economics, estimating, cost analysis, contract bidding, and specification writing. **Prerequisite: Senior standing or consent of instructor.** (Offered Fall)
- CE 450 *Hydraulics of Open Channel Flow* – 3 hrs. A study of the mechanics of fluid flow in open channels, as an extension of basic engineering hydraulics and experimental concepts applied to the theory, design, and shape optimization of open channels. Classification of flow, channel cross section, hydraulic jump, stilling basins, specific energy, culvert hydraulics, and the use of design charts and tables are included. **Prerequisite: EGC 305.** (Offered upon sufficient demand – Consult Advisor)
- CE 455 *Wastewater Treatment* – 3 hrs. An introduction to wastewater characteristics and treatment processes; biological mechanism, reactors, waste treatment, and kinetics. The engineering design of physical processes such as sedimentation, thickening, and filtration; as well as chemical processes, processing of sludge and advanced wastewater treatment processes are included. A field trip to wastewater treatment plant is required. **Prerequisites: CE 304 and EGC305, or consent of instructor.** (Offered Fall, Odd Years)

- CE 456 *Solid Waste Disposal* – 3 hrs. An introduction to the problem of solid waste management; types and quantities of wastes; collection and transportation of wastes; composting, landfill and incineration; and recycling of wastes and resource recovery. **Prerequisite: CE 304 or consent of instructor.** (Offered upon sufficient demand – Consult Advisor)
- CE 457 *Hazardous Waste Management* – 3 hrs. An introduction to the transportation, storage, and disposal of hazardous wastes. Legal aspects of hazardous materials; cleanup of hazardous material spills, and the impact of hazardous materials on the environment are all covered. **Prerequisite: CE 304 or consent of instructor.** (Offered upon sufficient demand – Consult Advisor)
- CE 460 *Computer-Aided Design in Civil Engineering* – 3 hrs. (2 hours lecture, 3 hours lab.) A course which focuses on the design of Civil Engineering structures/systems using computers. Utilization of graphics and component design programs as design tools is required. **Prerequisite: EGC 101 and senior standing.** (Offered Spring)
- CE 470 *Civil Engineering Design Project* – 3 hrs. An individualized or grouped civil engineering design project completed under supervision of instructor. **Prerequisite: Must have completed at least two CE design courses or consent of instructor.** (Offered Fall and Spring)
- CE 480 *Special Topics* – This course covers selected topics in Civil Engineering. Credit hours to be arranged. (Offered as needed)

### GENERAL ENGINEERING COURSE DESCRIPTIONS

- EGC 101 *Engineering Drawing and Graphics* – 3 hrs. (2 hours lecture, 4 hours lab). A study of principles of design drafting, and graphics as applied to engineering; geometric constructions; multi-view drawing and sketching; and graphical algebra and calculus. The student is introduced to computer graphics package. **Prerequisite: Consent of the instructor.** (Offered Fall, Spring, and Summer)
- EGC 104 *Computer Programming* – 3 hrs. An introduction to the use of the computer as a tool in engineering. Systems and utility programs, programming techniques, recent developments in computing, and practice in solving engineering problems using FORTRAN are included. **Prerequisite: Consent of the instructor.** (Offered Fall, Spring, and Summer)
- EGC 204 *Engineering Analysis* – 3 hrs. An introduction to statistics and data analysis, probability and sampling distributions, quality control, estimation and statistical intervals, testing statistical hypotheses, the analysis of variance, experimental data, regression and correlation, and computer applications in Civil Engineering. **Prerequisite: MTH 126.** (Offered Fall)
- EGC 205 *Statics* – 3 hrs. Fundamental definitions and the concepts of static equilibrium, systems of forces and couples, application to solution of trusses and frames, friction, centroids and moments of inertia are covered in this course. **Prerequisites: MTH 125, PHY 105; Co-requisite: EGC 101 or consent of instructor.** (Offered Fall and Spring)
- EGC 206 *Dynamics* – 3 hrs. A study of kinematics of a particle; moment of inertia of masses; translation, rotation and plane motion of rigid bodies; principles of work and energy, impulse, and momentum, as applied to engineering problems. **Prerequisites: EGC 205 and MTH 126.** (Offered Spring)
- EGC 207 *Strength of Materials* – 3 hrs. Concepts of stress and strain, combined stresses, analysis of stresses and deformation in bodies loaded by axial, torsional, and bending loads are covered in this course. **Prerequisites: EGC 205 and MTH 126.** (Offered Spring and Summer)
- EGC 305 *Fluid Mechanics* – 3 hrs. (2 hours lectures, 2 hours lab). A study of the properties of fluids and fundamental principles governing fluid motion, including fluid statics; conservation of mass; momentum and energy with applications to pipe and channel flow of incompressible fluids. **Prerequisites: EGC 206, MTH 227 and MTH 238.** (Offered Fall)





**DEPARTMENT OF ELECTRICAL ENGINEERING**

212 Engineering & Technology Building  
256-372-5590

**INTRODUCTION**

The Department of Electrical Engineering offers courses leading to the Degree of Bachelor's of Science in Electrical Engineering (BSEE). The curriculum offered is the General Program with two concentrations: Computer Engineering and Microelectronics (VLSI). Students are prepared to pursue careers in technical areas such as power systems, communications, signal processing, integrated circuits, computers, manufacturing, and robotic systems. Graduates pursue careers in manufacturing, research and development, and management. They are also prepared to pursue private practice and graduate education. This program is designed to meet the requirements of the Engineering Accreditation Board (EAB) of the Accrediting Board for Engineering and Technology (ABET) as well as those of the Southeastern Association of Colleges and Schools (SACS).

**MISSION**

The mission of the Department of Electrical Engineering at Alabama A&M University, consistent with that of the University and the School of Engineering and Technology is to provide quality education, research, and service to its constituents. The Department commits to provide qualified graduates in the growing field of electrical engineering by fostering:

1. Excellence in electrical engineering education.
2. Intelligent use of physical facilities and learning resources that are conducive to learning, research, extension and development.
3. A sense of scholarship, leadership and service.
4. A search for new knowledge through research and its application.
5. Programs necessary to address the needs of capable students.

**ELECTRICAL ENGINEERING PROGRAM EDUCATIONAL OBJECTIVES**

1. Students will learn to analyze and design complex electrical engineering systems through structured lectures, discussions, simulation, project design, and evaluations by the electrical engineering faculty. Acquisition of these skills will be demonstrated by performance on examinations, assignments, presentations, and senior projects. This objective will be achieved in all its phases by the successful completion of the electrical engineering curriculum. This objective insures realization of goals 1, 2 and 5.
2. Students will demonstrate ability to use available resources and productivity tools such as the library, simulation software, measurement and analysis instruments, computer communication software packages, and the internet. Utilization of these tools is incorporated throughout the electrical engineering curriculum to include course assignments, laboratories, and projects. This objective will be achieved by completion of each of the courses in electrical engineering and it insures realization of goals 1, 2 and 4.
3. Students will develop the ability to communicate orally, graphically and in written form such that ideas are transferred in a proper and effective manner. They will demonstrate these skills through a series of required reports in each laboratory course and poster/slide presentations of the senior design projects. This objective insures realization of goals 1, 2, 4 and 5.

4. Students will develop professional and ethical responsibility and demonstrate that they are aware of these responsibilities through written essays and presentations by the time of enrollment in the senior year. This objective insures realization of goal 3.
5. Students will understand the need for continuous lifelong educational enhancement. The Department will maintain contact with graduates and report on achievement of this objective. This objective insures realization of goals 3 and 4.

## **ADMISSION POLICY**

### **I. Admission Directly from High School**

Students must meet all the requirements established by the University, that is, high school students entering Alabama A&M University must have maintained a grade point average of at least “C” in English, mathematics, science, and history and political science. In addition, the entrance requirements in mathematics are three and one-half units; algebra, two units; plane geometry, one unit; and trigonometry and/or advanced mathematics, one-half unit. Students must have at least two units in science: chemistry, one unit; and physics, one unit.

### **II. Admission Through the University College**

Prior to entering the engineering program, a student must complete all the requirements of the University College. In addition, students must have maintained a minimum overall grade point average of 2.5 and completed at least the first course of calculus with a grade of “C” or better.

### **III. Transfers from Other Institutions**

Students desiring to transfer to the program must be in good academic standing at the college or university from which they are transferring. In addition, they must have maintained a grade point average of 2.5 or better, completed at least the first course of calculus with a grade of “C” or better, and completed the requirements of the University College at Alabama A&M University, if they transfer in fewer than 30 semester hours.

## **GRADUATION REQUIREMENTS**

A student must successfully complete the required 127 semester hours of course work, as prescribed in the General program, 129 hours as prescribed in the Computer Engineering Concentration, or 129 hours as prescribed in the VLSI Option with an overall cumulative grade point average of 2.00 or better. A minimum of 2.00 grade point average in engineering courses and a grade of “C” or better in each course in electrical engineering are also required. Additionally, a grade of “C” or better is required in any course used as a substitute for an electrical engineering course.

**PROGRAM CURRICULA  
ELECTRICAL ENGINEERING (BSEE)**

<sup>1</sup>General Program  
127 Semester Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 101	Composition I	3	ENG 102	Composition II	3
MTH 125	Calculus I	4	MTH 126	Calculus II	4
CHE 101/101L	Gen. Chemistry/Lab	4	PHY 105	Physics I	4
ORI 101	Orientation	1	CMP 102	Intro. to Programming I	3
EE 101	Intro of Ele. Engineering	3	HIS 101	World History I	<u>3</u>
	<sup>3</sup> Health Science (HS)	<u>2</u>			17
		17			

**Sophomore Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
HIS 102	World History II	3	ENG 203	World Literature I	3
MTH 227	Calculus III	4	MTH 238	App. Differential Equations	3
PHY 106	Physics II	4	EE 202	Linear Circuit Analysis II	3
EE 201	Linear Circuit Analysis I	3	EE 203	Analog Circuit Design/Anal I	3
EE 201L	Linear Circuit Laboratory	<u>1</u>	EE 203L	Analog Circuit I Laboratory	1
		15	EE 204	Digital Circuit Design/Analysis	<u>3</u>
					16

**Junior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
EE 301	Signals & Systems I	3	ECO 200	Basic Economics	3
EE 305	Semiconductor Engineering I	3	EE 303	Electromagnetic Field Theory	3
EE 320	Computer Architecture	3	EE 304	Num. Methods/Digital Comp	3
EE 333	Analog Circuits Des/Anal II	3	EE 330	Microprocessors	3
	<sup>2</sup> Technical Elective (TE)	3		<sup>2</sup> Technical Elective (TE)	<u>3</u>
	<sup>4</sup> Humanities Elective	<u>3</u>			15
		18			

**Senior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
<sup>5</sup> EE 4xx	Elective	3		<sup>4</sup> Humanities Elective	3
EE 403	Feedback Sys Anal./Design	3	ME 481	Quality/Reliability Assurance	3
EE 404	Communications Theory	3		Engineering Science Elective	3
EE 410	Microwave Engineering	3	<sup>5</sup> EE 4xx	Elective	3
EE 410L	Microwave Engr. Lab	1	EE 471	Engineering Design II	<u>2</u>
EE 470	Engineering Design I	<u>2</u>			14
		15			

Note: One Technical Elective must be selected from Math 303, 452 or 453

<sup>1</sup>Students in this option must take 2 one-hour lab electives.

<sup>2</sup>TE may be chosen from engineering, mathematics or science courses with approval from advisor.

<sup>3</sup>HS course can be chosen from the HED 101, NHM 103, or FAS 102.

<sup>4</sup>Humanities electives can be chosen from ENG 204, ENG 205, or Art/Music elective

<sup>5</sup>EE 4XX elective courses require Advisor's approval

## ELECTRICAL ENGINEERING (BSEE)

Computer Engineering Concentration  
129 Semester Hours

### Freshman Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
ENG 101 Composition I	3	ENG 102 Composition II	3
MTH 125 Calculus I	4	MTH 126 Calculus II	4
CHE 101/101L Gen. Chemistry/Lab	4	PHY 105 Physics I	4
ORI 101 Orientation	1	CMP 109 Intro. to Programming II	3
CMP 102 Intro. to Programming I	3	HIS 101 World History I	<u>3</u>
<sup>2</sup> Health Science or PE electives	<u>2</u>		17
	17		

### Sophomore Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
HIS 102 World History II	3	<sup>3</sup> Humanities Elective	3
MTH 227 Calculus III	4	MTH 238 App Differential Equations	3
PHY 106 Physics II	4	EE 202 Linear Circuit Analysis II	3
EE 201 Linear Circuit Analysis I	3	EE 203 Analog Circuit Design/Anal I	3
EE 201L Linear Circuit Laboratory	1	EE 203L Analog Circuit I Laboratory	1
MTH 237 Linear Algebra	<u>3</u>	EE 204 Digital Circuit Design/Analysis	<u>3</u>
	18		16

### Junior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
EE 301 Signals & Systems I	3	ECO 200 Basic Economics	3
EE 305 Semiconductor Engineering I	3	EE 303 Electromagnetic Field Theory	3
EE 320 or CMP 380 Comp Arch.	3	EE 304 or CMP 305 Num. Methods	3
EE 333 Analog Circuit Design/Anal II	3	EE 330 Microprocessors	3
CMP 215 Data Structures	3	<sup>1</sup> Technical Elective (TE)	3
EE 340L Energy Conversion Lab	<u>1</u>	EE 360L Communications Lab	<u>1</u>
	16		16

### Senior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
<sup>4</sup> EE 4xx Elective	3	ENG 203 World Literature I	3
EE 403 Feedback Sys Analysis/Design	3	CMP 384 Operating Systems	3
EE 404 Communications Theory	3	ME 481 Quality/Reliability Assurance	3
<sup>3</sup> Humanities Elective	3	<sup>4</sup> CMP 4xx Elective	3
EE 405L Simulation Techniques	1	EE 471 Engineering Design II	<u>2</u>
EE 470 Engineering Design I	<u>2</u>		14
	15		

Note: One Technical Elective must be selected from Math 303, 452 or 453.

<sup>1</sup> TE may be chosen from engineering, mathematics or science courses with approval from advisor.

<sup>2</sup> HS course can be chosen from the HED101, NHM103, or FAS102.

<sup>3</sup> Humanities electives can be chosen from ENG 204, ENG 205, or Art/Music elective

<sup>4</sup>EE4xx or CMP 4xx elective courses require Advisor's approval

**ELECTRICAL ENGINEERING (BSEE)**

Microelectronics (VLSI) Concentration

129 Semester Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs..</i>
ENG 101	Composition I	3	ENG 102	Composition II	3
MTH 125	Calculus I	4	MTH 126	Calculus II	4
CHE 101/101L	Gen. Chemistry/Lab	4	PHY 105	Physics I	4
ORI 101	Orientation	1	CMP 102	Intro. to Programming I	3
EE 101	Intro. to Elec. Engineering	3	HIS 101	World History I	<u>3</u>
	<sup>2</sup> Health Science (HS)	<u>2</u>			17
		17			

**Sophomore Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
HIS 102	World History II	3	ENG 203	World Literature I	3
MTH 227	Calculus III	4	MTH 238	App. Differential Equations	3
PHY 106	Physics II	4	EE 202	Linear Circuit Analysis II	3
EE 201	Linear Circuit Analysis I	3	EE 203	Analog Circuit Design/Anal I	3
EE 201L	Linear Circuit Laboratory	<u>1</u>	EE 203L	Analog Circuit I Laboratory	1
		15	EE 204	Digital Circuit Design/Analysis	<u>3</u>
					16

**Junior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
EE 301	Signals & Systems I	3	ECO 200	Basic Economics	3
EE 305	Semiconductor Engineering I	3	EE 303	Electromagnetic Field Theory	3
EE 320	Computer Architecture	3	EE 304	Num. Methods/Digital Comp	3
EE 333	Analog Circuit Design/Anal II	3	EE 330	Microprocessors	3
	<sup>1</sup> Technical Elective	3	EE 350	VLSI Design & Testing	<u>3</u>
	<sup>3</sup> Humanities Elective	<u>3</u>			15
		18			

**Senior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
<sup>4</sup> EE 4xx	Elective	3		<sup>3</sup> Humanities Elective	3
EE 403	Feedback Sys Analysis/Design	3	ME 481	Quality/Reliability Assurance	3
EE 404	Communications Theory	3	EE 431	Semiconductor Engineering II	3
	Engineering Science Elective	3	EE 452	Semiconductor Instrumentation	3
EE 451	Integrated Circuit Fabrication	3	EE 471	Engineering Design II	<u>2</u>
EE 470	Engineering Design I	<u>2</u>			14
		17			

Note: One Technical Elective must be selected from Math 303, 452 or 453.

<sup>1</sup> TE may be chosen from engineering, mathematics or science courses with approval from advisor.

<sup>2</sup> HS course can be chosen from the HED101, NHM 103, or FAS 102.

<sup>3</sup> Humanities electives can be chosen from ENG 204, ENG 205, or Art/Music elective

<sup>4</sup>EE 4xx elective courses require Advisor's approval

## COURSE DESCRIPTIONS

- EE 101 *Introduction to Electrical Engineering* – 3 hrs. Fundamental concepts in electrical engineering are introduced. Practical pre-calculus concepts are utilized. Students are required to develop an electrical project. Students develop communication skills through presentations of projects and research of historical topics in the electrical engineering discipline.
- EE 201 *Linear Circuit Analysis I* – 3 hrs. Kirchoff's Laws, nodal analysis, mesh analysis, superposition, source transformation, Thevenin and Norton theorems, maximum power transfer; inductance and capacitance; sinusoidal waveforms; reactance, impedance; A.C. circuit analysis, power and power factor; and simple opamp circuits are covered in this course. **Prerequisite: MTH 125; Corequisites: EE 201L.** (Offered Fall)
- EE 201L *Linear Circuit Analysis I Lab* – 1 hr. This course is the companion lab to EE 201. **Corequisite: EE 201.** (Offered Fall)
- EE 202 *Linear Circuit Analysis II* – 3 hrs. Single and three phase power, transformers, magnetic couplings, transfer functions, filters, resonance; Laplace transforms, Fourier transforms. **Prerequisite: EE 201.**
- EE 203 *Analog Circuit Design and Analysis I* – 3 hrs. An analysis of nonlinear semiconductor devices; PN junction diodes, bipolar junction and field-effect transistors, biasing concepts, worst case analysis, and discrete amplifier circuit design and analysis. **Prerequisite: EE 201; Corequisite: EE 203L.** (Offered Spring)
- EE 203L *Analog Circuit Design and Analysis I Lab* – 1 hr. This course is the companion lab to EE 202, EE 203L, and EE 204. **Corequisites: EE 202, EE 203, and EE 204.** (Offered Spring)
- EE 204 *Digital Circuit Design and Analysis* – 3 hrs. Analysis and design of those circuits where the nonlinearity of the active element is significant. Includes basic digital circuits, Boolean algebra, Karnaugh maps, encoding and decoding, flip-flops, finite state machines, and analog-digital conversion.
- EE 301 *Signals and Systems I* – 3 hrs. Continuous time signals and systems; impulse and step functions, signal synthesis, convolution integrals, impulse response, transfer functions, poles and zeros, system responses, and state space methods, introduction: discrete time Fourier series. Discrete time Fourier transforms, discrete time systems, difference equations, and Z-transforms are introduced in this course. **Prerequisites: EE 202 and MTH 238.** (Offered Fall)
- EE 302 *Signals and Systems II* – 3 hrs. A study of random signals and random input systems; probability, density functions, random variables, random processes, Gaussian and Poisson processes; correlation functions, spectral density; random input systems, analysis, and signal-to-noise ratio concepts. **Prerequisite: EE 301.** (Offered Spring)
- EE 303 *Electromagnetic Field Theory* – 3 hrs. A review of coordinate systems; vector analysis; study of electrostatics to include Coulomb's Law, Gauss's Law, electric field intensity, and flux density calculations, electric potential calculations; magnetostatics to include Biot-Savart law, Ampere's law, magnetic field intensity and flux density concepts; introduction to magnetic vector potential; time varying fields, Maxwell's equations; and transmission lines. **Prerequisites: MTH 238 and EE 202.** (Offered Spring)
- EE 304 *Numerical Methods and Digital Computation* – 3 hrs. In this course numerical techniques are applied to the solution of scientific and engineering problems. Topics include error analysis, approximation of power series, linear regression, Taylor series, Chebyshev polynomials, and rational approximation. Solution of differential equations, integration, and roots of equations using numerical methods are also addressed. **Prerequisites: CMP 102 and MTH 238.** (Offered Spring)

- EE 305 *Semiconductor Engineering* – 3 hrs. A study of semiconductor fundamentals and physics of semiconductor devices to include: properties of materials and devices used in electrical engineering; theory of operation of semiconductor devices;  $p-n$  junction diodes, bipolar transistors ( $n-p-n$  and  $p-n-p$ ), and field-effect devices. **Prerequisites: EE 203 and MTH 126.** (Offered Fall)
- EE 311 *Electrical Engineering* – 3 hrs. This course is an introduction to Ohm's Law, KCL and KVL equations, dc circuit analysis; inductance and capacitance, AC circuit analysis; electrical machines, transformers, DC motors, DC generators, induction motors, alternators, synchronous motors, principle of operation, characteristics, and applications. This course is offered for non-EE majors only. **Prerequisite: MTH 238; Corequisite: EE 311L.** (Offered as needed)
- EE 311L *Electrical Engineering Lab* – 1 hr. This course is a companion lab to EE 311. **Corequisite: EE 311.** (Offered as needed)
- EE 320 *Computer Architecture* – 3 hrs. Basic concepts used in computer hardware design and computer system architecture are studied. The computer is presented as an infinite state machine. Basic computer functions such as address and data paths, instruction sets and memory cycles, components such as registers, arithmetic units, instruction decoders, and types of memories are discussed. A general purpose instruction set computer will be analyzed. **Prerequisites: EE 204.** (Offered Fall)
- EE 330 *Microprocessors* – 3 hrs. A study of number systems, binary arithmetic, basic structure and operation of microcomputer systems. The microprocessor will be studied in both machine code and assembly language levels. Students will write code in assembly language, interface external devices to the microcomputer system, and study bus protocols. **Prerequisite: EE 320.** (Offered Spring)
- EE 333 *Analog Circuit Design and Analysis II* – 3 hrs. This course is a continuation of the material presented in EE 203 and includes concepts of advanced electronic circuit design and analysis. **Prerequisite: EE 203.** (Offered as needed)
- EE 333L *Analog Circuit Design and Analysis II Lab* – 1 hr. This course is the companion lab to EE 333. (Offered as needed)
- EE 340L *Energy Conversion Laboratory* – 1 hr. This course consists of experiments for determining the operating characteristics of electrical machines. Transformers, induction motors, synchronous machines, and DC machines are covered. Stepper motors, brushless DC motors, and other special machines are introduced. **Prerequisite: EE 202.** (Offered Fall)
- EE 350 *VLSI Design and Testing* – 3 hrs. Principles of structured VLSI design with emphasis on MOS field effect transistor characteristics; VLSI fabrication techniques for MOS circuits; circuit characterization and performance estimation, logic design and testing. **Prerequisite: EE 305.** (Offered Spring)
- EE 360L *Communications Laboratory* – 1 hr. This lab is designed to support the concepts taught in areas of microwaves and transmission lines, the seven layered communication protocol, and lecture courses offered in the junior year of the electrical engineering curriculum. **Prerequisite: EE 301; Corequisite: EE 303.** (Offered Spring)
- EE 402 *Electrical Machines* – 3 hrs. A study of energy conversion; D.C. machines, motors, generators, principles of operation, characteristics, and applications; transformers and induction machines, principles of operation, characteristics, and applications; and synchronous machines, alternators, synchronous motors, principles of operation, characteristics, and applications. **Prerequisite: EE 303.** (Offered as needed)



- EE 403 *Feedback System Analysis and Design* – 3 hrs. A study of open and closed loop systems; time domain analysis; transfer functions, poles, and zeros; frequency response, Bode plots; root locus methods; system stability, Routh-Hurwitz criterion, Nyquist criterion; system compensation and design; state space methods, state equations, state transition matrix, and system response. **Prerequisite: EE 301.** (Offered Fall)
- EE 404 *Communication Theory* – 3 hrs. A study of communication signals and systems; AM and FM methods; pulse code modulation; multiplexing, and digital communications. **Prerequisite: EE 301.** (Offered Fall)
- EE 405L *Simulation Techniques Lab.* – 1 hr. This course is designed to provide hands on experience in the use of computer software and simulation tools. Application of software packages such as LabView, MatLab, Maple, MathCAD and others in the areas of control systems, signal processing, and communications will be covered. **Corequisites: EE 403 and EE 404.** (Offered Fall)
- EE 410 *Microwave Engineering* – 3 hrs. A review of electromagnetic theory; transmission lines and waveguides; circuit theory for waveguide systems; impedance matching and transformation; passive microwave devices; electromagnetic resonators; and periodic structures and filters. **Prerequisite: EE 303.** (Offered Spring)
- EE 410L *Microwave Engineering Laboratory* – 1 hr. This lab complements the course materials taught in EE 410, Microwave Engineering. **Corequisite: EE 410.** (Offered Spring)
- EE 420 *Power Systems I* – 3 hrs. Fundamental concepts of power system analysis, transmission line parameters, basic system models, steady state performance, network calculations, power flow solutions, symmetrical components, fault studies, operating strategies and control are presented in this course. **Prerequisite: EE 340L.** (Offered as needed)
- EE 421 *Power Systems II* – 3 hrs. Generating station characteristics, transmission line calculations, load studies and economic operations, and stability are addressed in this course. **Prerequisite: EE 420.** (Offered as needed)
- EE 424 *Advanced Digital Systems* – 3 hrs. This course is designed to provide seniors in electrical and computer engineering with real digital system design experience using the Verilog hardware description language (Verilog HDL). The history of descriptive hardware design and features of hardware description languages are explained along with design and simulation examples. With the use of the industry standard simulation and synthesis tools, designs will be constructed, synthesized, and configured in Field Programmable Gate Arrays (FPGA) or other Programmable Logic Devices. Experience gained in this class will prepare students to move directly into modern logic design environments. **Prerequisite: EE 330.** (Offered Fall)
- EE 430 *Integrated Circuit Engineering* – 3 hrs. Analysis, design and fabrication of silicon, thin-film, and thick-film integrated circuits; circuit simulation studies aided with SPICE II software system; integrated operational amplifiers and logic gates ( $T^2L$ ,  $I^2L$ , MOS and CMOS) are treated in this course. **Prerequisite: EE 305.** (Offered Fall)
- EE 431 *Semiconductor Engineering II* – 3 hrs. Principles of device electronics, physics of band models, Schottky barriers, bipolar and unipolar devices, conduction phenomena, SRH generation-recombination statistics, role of defects and noise. Introduction to wide bandgap semiconductors and devices. **Prerequisite: EE305.**
- EE 441 *Digital Signal Processing* – 3 hrs. A review of discrete time signals and systems; sampling of continuous time signals, sampling theorem; discrete time Fourier transforms; Z-transforms; region of convergence; applications; discrete Fourier transforms; fast Fourier transforms; design of digital filters, IIR filters, FIR filters, and computer-aided design. **Prerequisite: EE 301.** (Offered as needed)

- EE 445 *Advanced Electromagnetic Theory* – 3 hrs. Solution of Laplace’s equation in two dimensions, circular harmonics, cylindrical harmonics, method of finite differences; wave propagation, perfect dielectrics, conductors, lossy dielectrics, transmission line analogy, Smith chart solutions; and computer applications are covered. **Prerequisite: EE 303.** (Offered as needed)
- EE 451 *Integrated Circuit Fabrication* – 3 hrs. Introduction to principles of monolithic IC fabrication including bipolar and MOS transistor processing. The course includes active and passive device and process design, simulation, cleanroom procedures, in-process and final test and evaluation techniques, yield, chip assembly and packaging. A practicum is required. **Prerequisite: EE 305.** (Offered as needed)
- EE 452 *Semiconductor Instrumentation* – 3 hrs. Basic principles of semiconductor testing and evaluation. Various tools and techniques will be introduced for test and evaluation of semiconductor materials, devices and integrated circuits. **Prerequisite: EE 305.** (Offered Spring)
- EE 455 *Optimal Control Theory* – 3 hrs. A review of state space methods; optimal control problems, performance criterion, minimum time problems, minimum energy problems, and minimum fuel problems; optimization, using calculus of variations, Lagrange, Meyer, and Bolza problems, Lagrange equations, solution, applications; Pontryagin’s maximum principle, formulation, costate variables, solution; dynamic programming, principle of optimality, discrete control processes; Hamilton-Jacobi approach, closed loop control law, matrix Riccati equation, applications; and stability in the sense of Lyapunov are covered. **Prerequisite: EE 403.** (Offered as needed)
- EE 456 *Nonlinear Control Systems* – 3 hrs. A study of nonlinearities, classification, saturation, dead zone, hysteresis; phase plane formulation, phase portraits; describing function approach, limit cycles, and relay servomechanisms. **Prerequisite: EE 403.** (Offered as needed)
- EE 470 *Engineering Analysis and Design I* – 2 hrs. Students must demonstrate their complete engineering capabilities by participating in a capstone design project. Project management and engineering ethics are included. This first course is provided to facilitate project selection, literature survey, and orientation. Meeting times are flexible. **Prerequisites: EE 303, 333 and 330.** (Offered Fall)
- EE 471 *Engineering Analysis and Design II* - 2 hrs. This is a continuation of EE 470 and is provided to facilitate completion of the capstone design project. Meeting times are flexible. **Prerequisite: EE 470.** (Offered Spring)
- EE 490 *Special Topics* – 3 hrs. This course focuses on topics based on modern trends in electrical engineering. **This course can be taken multiple times with students receiving additional credit each time. The specifics of each course will be identified at the beginning of each semester.** (Offered as needed)



## **DEPARTMENT OF MECHANICAL ENGINEERING**

Engineering and Technology Building -ETB

Room 314

(256) 372-5890

### **INTRODUCTION**

Mechanical Engineering is a professional discipline that addresses the utilization of technological and scientific know-how to advance the efficiency, safety, utility and reliability of mechanical and thermal systems for the benefit of humanity. Nowadays, engineering is more interdisciplinary, team-oriented, and environmentally sensitive than ever before. This program encompasses the traditional roles of Mechanical Engineering in areas of analysis, design, manufacturing, and testing of mechanical and thermal systems (i.e. boilers, steam plants, heat exchangers, hydraulic systems, refrigeration, etc.), while also including emphasis in system integration, propulsion systems, concurrent engineering, and other competitive engineering practices. Design for manufacture considers additional elements such as consumer satisfaction, time to market, and others.

This program is designed to provide the necessary foundation in engineering analysis, design, manufacturing and engineering sciences leading to the Bachelor's of Science Degree in Mechanical Engineering. The common program includes courses in fluid and solid mechanics, heat transfer, thermodynamics, instrumentation, automatic control, and mechanical and thermal design. Additional instruction is available through the program options that include power generation, energy systems, manufacturing systems, and system integration. Emphasis is placed in an appropriate combination of theoretical and experimental instruction to enable students to carryout engineering projects that cover concurrent engineering design practices. Therefore, each lab experiment contains elements of design and manufacturing. Students' instruction will include the use of modern computer simulation tools such as MatLab, CAD, Lab-View and others as appropriate in developing their designs. Additionally, students are required to take a two-semester capstone design course that addresses integration of design, manufacturing, reliability, economics, maintainability, and life cycle disposal in their projects.

Oral Communication and writing skills are an important part of the program. Students are required to complete projects in mechanical engineering courses as members of teams and to present their results orally and with a written report.

Mechanical engineering graduates can expect to work in government and in private or public corporations throughout the entire country. These range from automotive corporations to aerospace companies. Mechanical engineering graduates can continue their education by pursuing graduate studies.

### **MISSION**

The Department of Mechanical Engineering mission is that of providing an environment conducive for students to build their self-confidence, develop engineering and professional competencies, and elevate the quality of their scholarly and professional endeavors.

### **EDUCATIONAL GOAL**

To provide students with the necessary preparation in mechanical engineering to compete effectively for professional careers in this field and with the motivation for personal and professional growth through lifelong learning.

## **VISION**

To develop engineering core competencies in areas of manufacturing and propulsion systems to better support industry, governmental organizations and corporations with relevant engineering activities in aerospace, automotive, power generation, industrial manufacturing and related emerging technologies.

## **EDUCATIONAL OUTCOMES**

1. The student will demonstrate the necessary competencies in fundamental mechanical engineering technologies in areas such as: thermal and mechanical systems design.
2. The student will demonstrate competencies in experimental testing, error analysis, laboratory safety, data acquisition, instrumentation and laboratory report writing.
3. The student will demonstrate computer competency and an intelligent use of computers as a tool for developing solutions to engineering problems.

## **PROGRAM OFFERINGS**

The mechanical engineering program has the General Program and two concentrations: the Manufacturing Systems Concentration and the Propulsion Systems Concentration.

## **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

Financial assistance and scholarships are addressed by the University Admissions Office.

## **COOPERATIVE EDUCATION/INTERNSHIPS**

Cooperative education and internships are encouraged. Students are advised to work with the University Placement Office.

## **STUDENT/PROFESSIONAL ORGANIZATIONS**

The mechanical engineering department encourage students to participate in various professional societies like the American Society for Mechanical Engineering (ASME), the Society for Manufacturing Engineering (SME), the American Institute for Aeronautics and Astronautics (AIAA) and others.

## **SPECIAL PROGRAMS/AWARDS/RECOGNITIONS**

The School participates in nominating candidates for the annual Honors Day. Students are required to provide documentation for consideration early in February each year.

## **GRADUATION/PROGRAM REQUIREMENTS**

Prospective students must qualify for admission to the University and must satisfy the following requirements prior to transfer from University College to the Mechanical Engineering Department:

1. Demonstrate competence in the basic areas of reading, writing, logical reasoning, and mathematics as measured by standardized assessment instruments;
2. Complete a minimum of 23 credit hours from the freshman core curriculum and university requirements; and
3. Meet all requirements for admission to the mechanical engineering program.

Mechanical engineering majors are required to report to the department office and schedule an interview with the chairperson as soon as possible. The interview provides an opportunity for appropriate documentation to be placed in the student's file.

To meet graduation requirements the student must complete 129 credit hours as a minimum requirement for the satisfactory completion of studies leading to the BSME degree. Students must complete the program requirements with an overall cumulative grade point average of 2.00. A minimum of 2.00 grade point average is also required in all major courses. Prerequisites are required for approval of any subsequent courses. Students are encouraged to earn a grade of C or better in all prerequisites before proceeding to any advanced courses.

The University requires that all students take a one credit hour course in university orientation and two credit hours in an approved health course.

Transfer credits from other institutions are accepted conditionally, subject to departmental approval and approval by the Vice President for Academic Affairs. The department may require the completion of class projects through independent study. Transfer students must complete at least one-half of the ME courses and earn the final 30 hours of work towards their degree at AAMU.

**PROGRAM CURRICULA**

**Mechanical Engineering (BSME)  
General Program  
129 Credit Hours**

**Freshman Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs..</i>
ENG 101	Composition I	3	ENG 102	Composition II	3
MTH 125	Calculus I	4	<sup>2</sup> MTH 126	Calculus II	4
CHE 101	General Chemistry I	3	PHY 105	Physics I	4
CHE 101L	Gen. Chemistry I Lab.	1	ME 101	Intro. to Mech. Engr.	1
EGC 101	Engr. Drawing & Graphics	3	ME 101	Intro. to Mech. Engr. Lab	1
ORI 101	Survival Skills	1	ME 104	Engr. A. & Comp.	<u>3</u>
	<sup>3</sup> Health Science (HS)	<u>2</u>			16
		17			

### Sophomore Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
HIS 102	World History I	3	MTH 238	App. Differential Equations	3
MTH 227	Calculus III	4	HIS 102	World History II	3
PHY 106	Physics II	4	ME 206	Dynamics	3
EE 201	Linear Circuit Analysis I	3	ME 210	Material Science	3
EE 201L	Linear Circuit Laboratory	1		<sup>4</sup> Social Science	<u>3</u>
ME 205	Statics	<u>3</u>			15
		18			

### Junior Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ECO 200	Basic Economics	3	ME 320	Kinmtcs./Dymcs. Of Mach.	3
EE 203	Analog Circ. Des/Anal.	3	ME 300	Math. Methods in M. E.	3
EE 203L	Analog Circ. Des/Anal./Lab	1	ME 301	Anal. Inst./Phys. Sys.	3
ME 231	Strength of Materials	3	ME 301L	Anal. Inst./Phys. Sys. Lab	1
ME 310	Thermodynamics	3	ME 311	Power Systems Integra.	3
ME 360	Fluid Mechanics I	3	ME 312	Heat and Mass Transfer	3
ME 360L	Fluid Mechanics I Lab	<u>1</u>	ME 312L	Heat and Mass Transfer Lab	<u>1</u>
		17			17

### Senior Year

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG	World Literature I	3	ENG 204	World Literature II	3
ME 432	Design for Manuf. Rel.	3		Art/Music Elective	3
ME 432L	Design for Manuf. Rel Lab	1	ME 475	Mech. Engr. Design. Proj.	3
ME 451	Auto Control Systems	2	ME 4XX	<sup>5</sup> Elective	3
ME 451L	Auto Control Systems Lab	1	ME 4XX	<sup>6</sup> Elective	<u>3</u>
ME 470	Mech. Engr. Design Proj.	2			15
ME 4XX	<sup>5</sup> Elective	<u>3</u>			
		15			

<sup>1</sup> ENG 103 and ENG 104 may be taken by international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>FAS 101, HED 101, or NHM 103

<sup>4</sup>PHL 201, PSY 201, SOC 201 or GEO 213

<sup>5,6</sup>Technical elective may be chosen from senior-level ME courses with approval of advisor

## Mechanical Engineering (BSME)

### Manufacturing Systems Concentration

129 Credit Hours

### Freshman Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs..</i>
<sup>1</sup> ENG 101	Composition I	3	<sup>1</sup> ENG 102	Composition II	3
<sup>2</sup> MTH 125	Calculus I	4	<sup>2</sup> MTH 126	Calculus II	4
CHE 101	General Chemistry I	3	PHY 105	Physics I	4
CHE 101L	Gen. Chemistry I Lab.	1	ME 101	Intro. to Mech. Engr.	1
EGC 101	Engr. Drawing & Graphics	3	ME 101	Intro. to Mech. Engr. Lab	1
ORI 101	Survival Skills	1	ME 104	Engr. A. & Comp.	<u>3</u>
	<sup>3</sup> Health Science (HS)	<u>2</u>			16
		17			

**Sophomore Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
HIS 102	World History I	3	MTH 238	App. Differential Equations	3
MTH 227	Calculus III	4	HIS 102	World History II	3
PHY 106	Physics II	4	ME 206	Dynamics	3
EE 201	Linear Circuit Analysis I	3	ME 210	Material Science	3
EE 201L	Linear Circuit Laboratory	1		<sup>4</sup> Social Science	<u>3</u>
ME 205	Statics	<u>3</u>			15
		18			

**Junior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ECO 200	Basic Economics	3	ME 320	Kinmtcs./Dymcs. Of Mach.	3
EE 203	Analog Circ. Des/Anal.	3	ME 300	Math. Methods in M. E.	3
EE 203L	Analog Circ. Des/Anal./Lab	1	ME 301	Anal. Inst./Phys. Sys.	3
ME 231	Strength of Materials	3	ME 301L	Anal. Inst./Phys. Sys. Lab	1
ME 310	Thermodynamics	3	ME 370	Concurrent Engineering	3
ME 360	Fluid Mechanics I	3	ME 312	Heat and Mass Transfer	3
ME 360L	Fluid Mechanics I Lab	<u>1</u>	ME 312L	Heat and Mass Transfer Lab	<u>1</u>
		17			17

**Senior Year**

<i>First Semester</i>		<i>Sem. Hrs.</i>	<i>Second Semester</i>		<i>Sem. Hrs.</i>
ENG	World Literature I	3	ENG 204	World Literature II	3
ME 432	Design for Manuf. Rel.	3		Art/Music Elective	3
ME 432L	Design for Manuf. Rel Lab	1	ME 475	Mech. Engr. Design. Proj.	3
ME 451	Auto Control Systems	2	ME 472	Econ. Eval. Of Design Proj.	3
ME 451L	Auto Control Systems Lab	1	ME 482	Oper. Planning & Sched.	<u>3</u>
ME 470	Mech. Engr. Design Proj.	2			15
ME 481	Qual. Reliability Assurance	<u>3</u>			
		15			

<sup>1</sup> ENG 103 and ENG 104 may be taken by international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>FAS 101, HED 101, or NHM 103

<sup>4</sup>PHL 201, PSY 201, SOC 201 or GEO 213

**Mechanical Engineering Center (B.S.M.E.)**

**Propulsion Systems Concentration**

129 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs..</i>
<sup>1</sup> ENG 101	Composition I	3	<sup>1</sup> ENG 102	Composition II	3
<sup>2</sup> MTH 125	Calculus I	4	<sup>2</sup> MTH 126	Calculus II	4
CHE 101	General Chemistry I	3	PHY 105	Physics I	4
CHE 101L	Gen. Chemistry I Lab.	1	ME 101	Intro. to Mech. Engr.	1
EGC 101	Engr. Drawing & Graphics	3	ME 101	Intro. to Mech. Engr. Lab	1
ORI 101	Survival Skills	1	ME 104	Engr. A. & Comp.	<u>3</u>
	<sup>3</sup> Health Science (HS)	<u>2</u>			16
		17			



### Sophomore Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
HIS 102 World History I	3	MTH 238 App. Differential Equations	3
MTH 227 Calculus III	4	HIS 102 World History II	3
PHY 106 Physics II	4	ME 206 Dynamics	3
EE 201 Linear Circuit Analysis I	3	ME 210 Material Science	3
EE 201L Linear Circuit Laboratory	1	<sup>4</sup> Social Science	<u>3</u>
ME 205 Statics	<u>3</u>		15
	18		

### Junior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
ECO 200 Basic Economics	3	ME 320 Kinmtcs./Dymcs. Of Mach.	3
EE 203 Analog Circ. Des/Anal.	3	ME 300 Math. Methods in M. E.	3
EE 203L Analog Circ. Des/Anal./Lab	1	ME 301 Anal. Inst./Phys. Sys.	3
ME 231 Strength of Materials	3	ME 301L Anal. Inst./Phys. Sys. Lab	1
ME 310 Thermodynamics	3	ME 311 Power Systems Integra.	3
ME 360 Fluid Mechanics I	3	ME 312 Heat and Mass Transfer	3
ME 360L Fluid Mechanics I Lab	<u>1</u>	ME 312L Heat and Mass Transfer Lab	<u>1</u>
	17		17

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG World Literature I	3	ENG 204 World Literature II	3
ME 412 Anal./Syn. Gas Turb./Co.	3	Art/Music Elective	3
ME 412L Anal./Syn. Gas Turb./Co. Lab	1	ME 475 Mech. Engr. Design. Proj.	3
ME 451 Auto Control Systems	2	ME 413 Rocket Propulsion	3
ME 451L Auto Control Systems Lab	1	ME 416 Gas Dynamics	<u>3</u>
ME 470 Mech. Engr. Design Proj.	2		15
ME 411 Power Plant Performance	<u>3</u>		
	15		

<sup>1</sup> ENG 103 and ENG 104 may be taken by international students.

<sup>2</sup>The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

<sup>3</sup>FAS 101, HED 101, or NHM 103

<sup>4</sup>PHL 201, PSY 201, SOC 201 or GEO 213

## COURSE DESCRIPTIONS

ME 101 *Introduction to Mechanical Engineering* – 1 hrs. (Lec. 1 hr.) Mechanical engineering as a practice is reviewed briefly. Students are required to develop a basic engineering project to include: Market outlook, basic production techniques, economic assessment, planning and design, manufacturing, testing, and product evaluation. A final technical report is required. The report includes an oral presentation and documentation in writing. Emphasis is placed on team development, consistent use of engineering units, and computer usage. Project selection is under the approval of the instructor.  
**Prerequisite: MTH 104 or consent of instructor. Co-requisite ME 100L.**

ME 101L *Introduction. to Mechanical Engineering Lab* – 1 hr. This laboratory is required to develop the project associated with **ME 101.**

- ME 104 *Engineering Analysis and Computing I* – 3 hrs. Introduction to problem solving techniques in engineering using digital computers and Fortran programming. Topics include flow charting and emphasis on analysis and solutions of science problems in fluid dynamics, materials, structures and energy systems. Fundamentals of linear algebra are discussed.
- ME 205 *Statics* – 3 hrs. Principles of equilibrium, governing equations, free-body diagrams. Statics and the design problem. Vectorial representation of forces. Analysis of mechanical systems in equilibrium. Properties of forces, equivalent systems, moments, couples, and resultants. Applied problems in friction, centroids and area moments of inertia. Introduction to computer simulation techniques. **Prerequisites: MTH 126 (or concurrently), PHY 106.**
- ME 206 *Dynamics* – 3 hrs. Principles of systems in motion. Fundamental governing equations for particles and rigid bodies. Dynamics and the design problem. Vectorial representation of velocity and acceleration. Relative motion, work, energy, impulse, and momentum. Introduction to computer simulation techniques. **Prerequisites: ME 205, MTH 126 (or concurrently), PHY 106.**
- ME 210 *Material Science* – 3 hrs. Structure of matter. Physical and mechanical properties of materials including metals, polymers, ceramics, composites, and electronic materials. Equilibrium diagrams. Heat treatments, material selection for manufacturing and corrosion problems. **Prerequisites: CHE 101, PHY 105 or advisor approval.**
- ME 231 *Strength of Materials* – 3 hrs. A study of the mechanics of deformable materials, durability, chalk propagation, performance, and life-cycle analysis. Theory of stress and strain. Deformations under simplified loads (axial, torsional, bending). Analysis of columns, buckling loads. Review of data acquisition and instrumentation for testing. Material selection for design. **Prerequisites: ME 205 and ME 210.**
- ME 300 *Mathematical Methods in Mechanical Engineering* – 3 hrs. A study of solution methods for nonlinear algebraic equations, sets of linear algebraic equations, eigenvalue problems, interpolation and curve fitting, numerical integration, numerical differentiation, and or commonly, and polynomial equations. Applications in fluid mechanics, heat and mass transfer, thermodynamics, kinematics, and design are covered. **Prerequisites: MTH 227 and ME104.**
- ME 301 *Analysis and Instrumentation of Physical Systems* – 2 hrs. This course presents a unified introduction to dynamic engineering systems, including those with electrical, mechanical, and fluid elements. Mathematical modeling techniques subdivided in topics and used to gain insight in engineering systems and analytical as well as experimental techniques of general importance in engineering problems are presented. Basic concepts and the use of modern instrumentation, including digital systems, are covered in the lab. **Prerequisites: PHY 106, EE 201, ME 205 and MTH 227. Co-requisite ME 301L.**
- ME 301L *Analysis and Instrumentation of Physical Systems Lab* – 1 hr. (Lab 1 hr.) This laboratory supports the required practices for **ME 301.**
- ME 310 *Thermodynamics* – 3 hrs. A study of basic thermodynamic properties; pressure, temperature, work, specific volume, and energy. The first and second laws of thermodynamics, closed and open systems, enthalpy and entropy; properties of gas mixtures and air-vapor mixtures; as well as basic applications are covered. **Prerequisite: PHY 105.**
- ME 311 *Power Systems Integration* – 3 hrs. This course analyzes the elements and the processes of power systems and their integration. Topics covered are: energy utilization, combustion, energy cycles, steam power plants, fuel beds and suspension firing, heat exchangers, pumps, pipes, water supply and conditioning, power system performance, variable loads, station performance and energy cost. **Prerequisites: ME 310 and ME 360.**

- ME 312 *Heat and Mass Transfer* – 4 hrs. Fundamentals of heat transfer by conduction, convection, and radiation; and mass transfer by convection is covered in this course. Relevance to engineering applications is also addressed. **Prerequisites: ME 310 and ME 360.**
- ME 312L *Heat and Mass Transfer Lab* – 1 hr. Laboratory to support the practices and projects of **ME 312. Co-requisite: ME 312.**
- ME 320 *Kinematics and Dynamics of Machines* – 3 hrs. Kinematics and dynamics of machine elements. Vector loop approach. Numerical methods and graphical techniques. Kinematics coefficients. Newton formulation. Power equation. Gears and Cams. Static and Dynamic balancing. Critical speeds of shafts. **Prerequisites: ME 104 and ME 206.**
- ME 360 *Fluid Mechanics I* – 3 hrs. Fundamentals of fluid mechanics are covered. Newtonian fluids, review of systems of units, the perfect gas equation, incompressible flow, Bernoulli's equation, channel flow, boundary layers, subsonic flow, flow through converging-diverging passages, compressible flow, potential theory, flow through turbo machinery. Relevance to engineering applications. **Prerequisite: MTH 227. Co-requisite: ME 360L**
- ME 360L *Fluid Mechanics I Lab* – 1 hr. Supports projects/practices of ME 360. **Co-requisite: ME 360.**
- ME 370 *Concurrent Engineering.* – 3 hrs. The study of product/process design, manufacture, and after-market support using the principles of simultaneous engineering. Computer techniques are used in the solution of practical problems. **Prerequisites: PHY 106, MTH 126, and computer proficiency.**
- ME 390 *Directed Study.* – 1 to 3 hrs. This course covers topics of the Mechanical Engineering junior level curricula that incorporate independent research and independent study. It can be taken as individual work within campus facilities and it may include work at off-campus research laboratories. The work requires the supervision and approval of instructor. Course credit/s can be used for substitution of an appropriate 300 level junior class or laboratory in the ME program. **Prerequisites: Junior standing and consent of instructor.**
- ME 411 *Power Plant Performance* – 3 hrs. A study of the fundamentals of aerothermodynamics of propulsion systems, cycle analysis, ideal Bryton air cycle, and real turbojet and turbofan performance. Basic sizing techniques, economy parameters, performance simulation, and prediction will be covered. Introduction to power plant/airframe integration will be introduced. **Prerequisites: ME 310 and ME 311.**
- ME 412 *Analysis and Synthesis of Gas Turbines and Components* – 3 hrs. A review of aerothermodynamics of propulsion systems, characterization of power plant utilization, and operation cycle analysis. On-off design performance, component characterization, component design, component matching, optimization, and introduction to power plant integration systems in a fixed or moving architecture are also covered. **Co-requisite: ME 411; Co-requisite: ME 412L**
- ME 412L *Analysis and Synthesis of Gas Turbines and Components Lab* – 1 hr. Supports projects/practices of ME 412. **Co-requisite: ME 412.**
- ME 413 *Rocket Propulsion* – 3 hrs. A study of propulsion system requirements for terrestrial and interplanetary flight. Basic principles and performance of both solid and liquid chemical rocket propulsion systems, elements of nuclear rockets, nuclear-electrical power systems, and electrical propulsion systems are addressed. **Prerequisites: ME 311 and ME 360.** (Offered - consult advisor)
- ME 414 *Gas Turbine Engine Design and Manufacture* – 3 hrs. A study of synthesis of gas turbine design under the constraints of power plant system integration or airframe integration. Definitions of system requirements, preliminary configuration analysis and engine sizing; inlet preliminary design; compressor, combustor, turbine and nozzle design; co-generation and heat recovery considered for stationary power plants.; engine on and off design performance simulation; installed thrust and system interference effects; noise sources and noise control are covered. **Prerequisites: ME 311 and ME 320.**

- ME 415 *Heating, Ventilating, Air Conditioning, Refrigeration* – 3 hrs. A study of refrigeration cycles, psychrometrics, thermal comfort, ventilation, duct design, equipment sizing, energy recovery, and solar design concepts. **Prerequisites: ME 310 and ME 312.**
- ME 416 *Gas Dynamics* – 3 hrs. A study of the fundamental theory of one-dimensional gas dynamics: Isentropic flow, flow in converging-diverging nozzles, shock propagation, normal and oblique shock theory, Prandtl-Meyer expansions, Fanno line flow, and measurement methods. **Prerequisites: ME 310 and ME 360.**
- ME 432 *Design for Manufacture and Reliability* – 3 hrs. A study of design synthesis and methods; strength design of mechanical structures and components; optimization and reliability principles; and computer-aided design techniques. Emphasis is on modeling synergistic processes for manufacture. **Prerequisites: ME 370 and ME 320; Co-requisite: ME 432L.**
- ME 432L *Design for Manufacture and Reliability* – 1 hr. Supports Design work for ME 432. **Co-requisite: ME 432.**
- ME 451 *Automatic Control Systems* – 2 hrs. Knowledge of linear system properties from previous courses is amplified and used to accomplish modeling, identification, and feedback control of dynamic systems. Both classical and state feedback control concepts are developed in this course. Digital control theory and analysis is also applied to systems composed of linear elements. Laboratory experiments are hardware applications that verify these concepts using both analog and digital computers as appropriate. **Prerequisites: ME 301 and EE 201; Co-requisite: ME 451L.**
- ME 451L *Automatic Control Systems Lab* – 1 hr. Supports projects and practices in ME 451. **Co-requisite: ME 451.**
- ME 470 *Mechanical Engineering Design Project* – 2 hrs. (Lec. 1 hr., Lab 1 hr.) Design or comprehensive analysis and development of an engineering product or process. The student is required to give an oral presentation of his work and submit an approved typewritten technical report. **Prerequisite: Senior Standing and consent of instructor.**
- ME 471 *Systems Engineering* – 3 hrs. The systems engineering process is defined and investigated in this course. Among the topics introduced and studied are conceptual, preliminary, and detail design concepts using modern tools such as CAD, optimization, and systems test and evaluation in completing designs built for increased reliability, maintainability, and supportability. Environmental and social impact and life-cycle costs are also introduced. **Prerequisites: ME 300 and ME 370.**
- ME 472 *Economic Evaluation of Design* – 3 hrs. In this course, the concepts of life-cycle costs and optimization of alternatives are investigated. The formal study of decision-making and economic theory are applied to engineering projects. Case studies are used. **Prerequisites: ECO 200, ME 231, and ME 370.**
- ME 473 *Logistics* – 3 hrs. A study of the initial distribution and the subsequent sustaining life-cycle maintenance and support of a system of products throughout the consumer use phase is considered. Systems design will be re-evaluated with emphasis placed on maintenance and support, taking into consideration reliability, maintainability, human factors, and life-cycle cost factors. **Prerequisite: ME 300.**
- ME 475 *Mechanical Engineering Design Project Continuation* – 3 hrs. A continuation of ME 470. **Prerequisite: ME 470.**
- ME 481 *Quality and Reliability Assurance* – 3 hrs. An introduction to probability and statistics. Quantitative techniques for establishing product specifications and process controls for quality assurance, ISO 9000; the role of reliability in manufacturing operations; and so forth, are covered. **Prerequisite: ME 300.**

- ME 482 *Operations Planning and Scheduling* – 3 hrs. Analysis and design of production and control systems for both intermittent and continuous manufacturing, Inventory effects on production, production control techniques and review of just-in-time manufacturing. Emphasis is given to extending concurrent engineering techniques and methods for manufacturing and product development. **Prerequisite: ME 370.**
- ME 485 *Computer Aided Manufacturing* – 2 hrs. A study of the use of CAD/CAM/CIM technology and the minimization of the overall manufacturing operation, including product design, product modification, and economy. **Prerequisite: ME 370; Co-requisite ME 485L.**
- ME 485L *Computer Aided Manufacturing Lab.* – 1 hr. Supports projects and practices of ME 485. **Co-requisite: ME 485.**
- ME 490 *Special Topics.* – 1 to 3 hrs. This course covers, in additional depth, topics on Mechanical Engineering. It can be taken as individual work under the supervision of the instructor. **This course can be taken multiple times with students receiving additional credit each time. The specifics of each course will be identified at the beginning of each semester. Prerequisite: Senior standing and consent of instructor.**

## **DEPARTMENT OF TECHNOLOGY**

320 Engineering and Technology Building  
(256) 372-5581

### **INTRODUCTION**

The Department of Technology includes the Engineering Technology and Industrial Technology Programs. Its mission is to provide students a career entry into the engineering and industrial enterprise, by the practical application of engineering and industrial technology principles to implement and improve technology. It strives to provide training in methods of engineering and industrial practice in current use, and familiarity with current equipment and computer methods. The department performs research in practical applications of technology, and trains technology educators to serve the community. It serves the local community by providing an opportunity for industry employees, non-traditional students, and educationally disadvantaged constituents to enter or improve their skills in the technology workforce.

### **MISSION/OBJECTIVES**

The objectives of the program are to produce graduates who will have a fundamental knowledge of the behavior and design of engineering systems and devices, and operation and management of industrial systems. They will be able to use devices for control of manufacturing processes and for the operation of consumer and industrial machines. They will understand and perform laboratory procedures, and be familiar with the use of computers for design, simulation, and analysis of engineering and industrial problems and processes. They will have the skills to communicate technical information effectively both orally and in written form.

### **ENGINEERING TECHNOLOGY**

Engineering Technology provides instruction in civil, electrical, and mechanical engineering technology at the baccalaureate degree levels. Engineering technology combines engineering knowledge and methods with technical skills to support engineering activities. It differs from engineering in that its emphasis lies in practical applications rather than theory and design. Engineering technology stresses the application of today's technological know-how to current industrial practices and design procedures. Graduates usually work within the engineering team in applications-oriented or manufacturing positions or technical services.

### **GRADUATION/PROGRAM REQUIREMENTS**

**University General Education Curriculum** (44 semester credit hours): ENG 101, ENG 102, ENG 205, ECO 231, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs, physical education (2) or health or military science.

### **DUAL DEGREE PROGRAM WITH GEORGIA INSTITUTE OF TECHNOLOGY**

101 Credit Hours (plus completion of Georgia Tech Requirements)

This program offers an opportunity for students to transfer to Georgia Tech after completing a three-year curriculum at Alabama A&M University. Upon acceptance by Georgia Tech, students may enroll in any of their specialty areas of engineering. Engineering programs currently offered are: Aerospace Engineering; Biomedical Engineering; Chemical Engineering; Civil and Environmental Engineering; Computer Engineering; Electrical Engineering; Environmental Engineering; Industrial and Systems Engineering; Materials Engineering; Mechanical Engineering; Nuclear Engineering and Health Physics; and Textile Engineering. Upon completion of the program at Georgia Tech, students receive a B.S. in Engineering Technology from Alabama A&M University and a B. S. from Georgia Tech in their specialty area. Because of their classification as transfer students, Dual Degree applicants must meet all Georgia Tech requirements for transfer.

Students must select courses from the following categories in accordance with their expected major area at Georgia Tech. Some course subjects are offered in both the Engineering department and the Engineering Technology department.

### Freshman Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs..</i>
ENG 101	Composition I	3	ENG 102	Composition II	3
MTH 125	Calculus I	4	MTH 126	Calculus II	4
	<sup>2</sup> Health, PE or Military Sci.	2	TBC 102	Microcomputer Skills for Tech.	3
MDT 111L	Technical Drafting	3	CHE 101	General Chemistry I	3
HIS 101	World History I	3	CHE 101L	General Chemistry I Lab	1
ORI 101	Survival Skills	<u>1</u>	HIS 102	World History II	<u>3</u>
		16			16

### Sophomore Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 203	World Literature I	3	MTH 238	App. Differential Equations	3
MTH 227	Calculus III	4	ART 101	Music Appreciation	3
PHY 105	Physics I	4	CHE 102	General Chemistry II	3
EE 202	Applied C++ for Engr. Tech.	3	CHE 102L	General Chemistry II Lab	1
	<sup>2</sup> Social Science	<u>3</u>	PHY 106	Physics II	4
		17	TGC 217	Statics	<u>3</u>
					17

### Junior Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
MUS 101	Music Appreciation	3	ECO	Economics <sup>1</sup>	3
	Engr. & Tech. Fundament. Crs.	3	ENG 205	General Speech	3
	Engr. & Tech. Fundament. Crs.	4	PHY 201	Intro. to Modern Physics	3
MTH 237	Intro. to Linear Algebra	3		Engr. & Tech. Fundament. Crs.	3
TGC 201	Technical Communication	<u>3</u>		Engr. & Tech. Fundament. Crs.	3
		16		Elective Course	<u>3</u>
					18

<sup>1</sup>ECO 231 or ECO 232

<sup>2</sup>Economics, History, Anthropology, Geography, Political Science, Psychology, Sociology. All students must take a six-semester credit hour sequence in literature or history.

### ENGINEERING AND TECHNOLOGY FUNDAMENTAL COURSES:

<u>Course Number</u>	<u>Course Name</u>	<u>Semester Hours</u>
MET 200	Electromechanical Principles	3
MET 302	Dynamics <b>or</b>	
EGC 206	Dynamics	3
MET 204	Fluid Mechanics and Hydraulics <b>or</b>	4
EGC 305	Fluid Mechanics	3
MET 206	Thermodynamics & Heat Transfer <b>or</b>	4
ME 310	Thermodynamics	3
TGC 218	Strength of Materials <b>or</b>	3
EGC 207	Strength of Materials	3

**ENGINEERING AND TECHNOLOGY ELECTIVE COURSES**

The student may select any upper-level (300- or 400- level) Engineering and Technology course in accordance with the planned major at Georgia Tech, if the prerequisites for the course have been taken. Students may also select courses from other university programs such as computer science, chemistry, mathematics, or physics if their advisor approves them as related to academic goals.

**CIVIL ENGINEERING TECHNOLOGY**

Graduates of this program enter careers in building and highway construction, structural design, transportation, site planning, and infrastructure rehabilitation. Graduates may work as surveyors, field engineers, estimators, and project managers for municipal, state and federal agencies, construction firms, public service companies or in military service.

**CIVIL ENGINEERING TECHNOLOGY**

128 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs..</i>
ENG 101	Composition I	3	ENG 102	Composition II	3
MTH 112	Pre-calculus Algebra	3	MTH 113	Pre-calculus Trigonometry	3
	<sup>2</sup> Health, PE or Military Sci.	2	TBC 102	Microcomputer Skills for Tech.	3
MDT 111L	Technical Drafting	3	HIS 102	World History II	3
HIS 101	World History I	3		Economics <sup>1</sup>	<u>3</u>
ORI 101	Survival Skills	1			15
ART 101	Art Appreciation	<u>3</u>			
		18			

**Sophomore Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 203	World Literature I	3	CET 2011	Engineering Materials	3
MTH 125	Calculus I	4	ENG 205	General Speech	3
CHE 101	General Chemistry I	3	MTH 126	Calculus II	3
CHE 101L	General Chemistry I Lab	1	PHY 105	Physics I	4
TGC 217	Statics	3	TGC 218	Strength of Materials	<u>3</u>
TBC 201	Technical Communication	<u>3</u>			17
		17			

**Junior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
CE 201	Surveying	3	CET 220	Transportation Engineering	3
CET 225	Construction Methods & Safety	3	CET 304	Construction Planning & Sched.	3
MET 204	Fluid Mechanics & Hydraulics	3	CET 208L	Soil Mechanics & Foundations	3
MET 330L	MET Lab	1	CET 402	Structural Design Concrete	3
MET 202	Dynamics	3	MUS 101	Music Appreciation	<u>3</u>
CET 306	Structural Analysis	<u>3</u>			15
		16			



## Senior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
CET 401 Structural Design Steel	3	CET 408 Highway and Bridge Engr.	3
CET 451 Senior Project in Structures	3	CET 409 Estimating, Contracts & Specs.	3
CET 307 Smart Mtls. for Civil Infrastruct.	3	CET 425 Rehab. of Civil Infrastructure	3
MDT 213 CAD Drafting & Design I	3	IT 310 Manufacturing Cost Analysis	3
Social Science <sup>2</sup>	<u>3</u>	CET 400L Smart Sensors for Civil Infrastr.	<u>3</u>
	15		15

<sup>1</sup>ECO 231 or ECO 232

<sup>2</sup>Economics, History, Anthropology, Geography, Political Science, Psychology, Sociology. All students must take a six-semester credit hour sequence in literature or history.

## COURSE DESCRIPTIONS

- NHM 414 *Hospitality Management Seminar* – 1 hr. A study and discussion of current trends and problems in the hospitality industry. **Prerequisite: Senior classification.** (Offered Fall, Spring, and Summer)
- CET 201L *Construction Materials and Testing* – 3 hrs. A study of the properties and manufacturing processes of construction materials. Laboratory testing of wood, steel, concrete, and other samples for compression, tension, shear, and hardness. Application of test results to actual design methods. **Prerequisite: None.** (Offered Fall)
- CET 208L *Soil Mechanics and Foundations* – 3 hrs. Study of origin, formation, classification, identification and subsurface exploration of soil. Physical and mechanical properties of soils, shear strength, consolidation, settlement, lateral earth pressure and bearing capacity. Introduction to foundation analysis. **Prerequisite: TGC 217.** (Offered Spring)
- CET 220 *Transportation Engineering Technology* – 3 hrs. Introduction to the planning and design of different types of transportation systems such as: highways, railroads, airports, pipe lines and waterways. Consideration of urban transportation problems and traffic control, including planning, data collection and analysis, and program implementation. **Prerequisite: None.** (Offered Spring, upon sufficient demand)
- CET 225 *Construction Methods & Safety* – 3 hrs. Introduction to the techniques, methods, and materials of building and road construction. Excavation, foundations, framing, masonry, roofing, finishing, and mechanical, electrical, and plumbing systems are covered. OSHA regulations and safety practices are presented. **Prerequisite: None.** (Offered Fall)
- CET 304 *Construction Planning & Scheduling* – 3 hrs. Introduction to construction project planning and management. Value engineering in construction. Scheduling by network diagrams, use of probability and statistics in construction, and methods of selecting construction equipment. Introduction to construction methods for tunnels and bridges. **Prerequisite: Junior standing.** (Offered Spring, upon sufficient demand)
- CET 306 *Structural Analysis* – 3 hrs. Analysis of stresses and deflections in statically determinate structures caused by fixed and moving loads. Study of influence lines and loading criteria for beams and plane trusses. Introduction to classical analysis of indeterminate structures including the slope deflection and moment distribution methods. Application of computer techniques to structural problems. Three hours lecture. **Prerequisite: TGC 217 and TGC 218.** (Offered Spring, upon sufficient demand)
- CET 307 *Smart Materials for Civil Infrastructure* – 3 hrs. This course will present the origin, composition and fabrication of fiber composite materials used in civil engineering. The course will include the properties and performance characteristics of fiber composite materials, analysis methodologies for micro-mechanics, ply-mechanics, macro-mechanics of composites and durability characteristics of composite materials. The applications of composites in civil engineering such as concrete

reinforcement and as repair and retrofit material will be presented. Laboratory work will be performed to learn how to determine the mechanical properties and durability characteristics experimentally. **Prerequisite: TGC 218.** (Offered Fall, upon sufficient demand)

- CET 400L *Smart Sensors for Civil Infrastructure* – 3 hrs. Class topics include characterization, performance, and fabrication of fiber optic, resistance, and piezoelectric systems for monitoring and sensing, and their applications in civil infrastructures. Laboratory and team activities involve manufacturing, measurement systems, instrumented structures, and performance tests on a small-scale smart bridge. **Prerequisite: TGC 218.** (Offered Spring, upon sufficient demand)
- CET 401 *Structural Design - Steel* – 3 hrs. Introduction to the analysis and design of steel structures. Selection and design of steel beams, columns, frames, and connections. Use of allowable stress and load resistance factor design (LRFD) methods for steel. A steel structure is designed as a student project. **Prerequisites: TGC 217, TGC 218, and CET 306.** (Offered Fall, upon sufficient demand)
- CET 402 *Structural Design - Concrete* – 3 hrs. Introduction to the analysis and design of reinforced concrete members: beams, columns, frames, and slabs. Use of allowable stress and ultimate strength design methods. A reinforced concrete structure is designed as a student project. **Prerequisites: TGC 218 Strength of Materials, TGC 217 and CET 306.** (Offered Spring, upon sufficient demand)
- CET 408 *Highway and Bridge Engineering* – 3 hrs. Design and construction of highways and bridges, including selection and clearing of roadbeds, preparation for surfacing, types of surfaces and their economic and practical advantages and disadvantages. Basic types of bridge construction including the basis for selection of bridge types under various geographic and economic circumstances. **Prerequisites: TGC 217, TGC 218, and CET 306.** (Offered Spring, upon sufficient demand)
- CET 409 *Estimating, Contracts, and Specifications* – 3 hrs. Introduction to contracting, bidding and specification writing. Analysis of the cost of materials, labor and equipment to determine costs both for preliminary and final estimates. Students will complete a project to estimate the cost of a building or other structure from plans and specifications. **Prerequisite: CET 225.** (Offered Spring, upon sufficient demand)
- CET 425 *Rehabilitation of Civil Infrastructure* – 3 hrs. The course will cover introduction to composite materials for use in architectural and civil engineering, principles of reinforcing and strengthening for flexure, shear, and ductility enhancement. The principles will be applied to members such as concrete slabs, beams, columns, and walls as well as steel and wood members. Design of structural members strengthened with externally bonded laminates or near surface mounted reinforcement will be presented. Case studies will be discussed at the conclusion of the course giving students an opportunity to learn from field applications including structural response under rapid load testing. Laboratory work will be performed where specimens will be tested and results will be reported and interpreted by students. **Prerequisites: TGC 218, CET 402 and CET 307.** (Offered Spring, upon sufficient demand)
- CET 451 *Senior Project in Structures* – 3 hrs. Selection, investigation, and solution of a civil engineering technology building construction or structures problem. Includes data acquisition and analysis, evaluation of alternatives, preliminary and final solution, and written and oral presentation of results. **Prerequisite: Senior standing.** (Offered Fall, upon sufficient demand)

## ELECTRICAL ENGINEERING TECHNOLOGY

Graduates of this program can apply the practical aspects of electrical and electronic technology to industrial controls, microprocessors, computer networking and the internet, computer and digital instrumentation, communications, automation and robotics, and other areas in this vast and fast-growing field. Hands-on laboratory experience is emphasized, and graduates may work in industrial development, design, production, maintenance, or as customer field representatives. Many of the courses prepare the student to take the exams required to obtain the prestigious industry certifications such as A+, Network+, Microsoft and Cisco.

## ELECTRICAL ENGINEERING TECHNOLOGY

128 Credit Hours

Accredited by the Technology Accreditation Commission (TAC)  
of the Accreditation Board for Engineering and Technology (ABET)

111 Market Place, Suite 1050

Baltimore, MD 21202

(410) 347-7700

### Freshman Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
ENG 101 Composition I	3	ENG 102 Composition II	3
MTH 112 Pre-calculus Algebra	3	MTH 113 Pre-calculus Trigonometry	3
		<sup>2</sup> Health, PE or Military Sci.	2
MDT 111L Technical Drafting	3	TBC 102 Microcomputer Skills for Tech.	3
HIS 101 World History I	3	ART 101 Art Appreciation	3
ORI 101 Survival Skills	1	EET 154L DC Theory	<u>4</u>
EET 101L Intro. to Elec. Engr. Tech.	<u>3</u>		16
	18		

### Sophomore Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
MTH 125 Calculus I	4	MTH 126 Calculus II	4
EET 186 Microprocessor Basics	3	TBC 201 Technical Communications	3
EET 202L AC Theory	4	EET 205L Digital Electronics	4
PHY 105 Physics I	<u>4</u>	EET 206L Solid State Theory	4
	15	EET 230L Applied Instrumentation	<u>3</u>
			18

### Junior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
EET 218L Industrial Electronics	4	ENG 205 General Speech	3
EET 280L Computer Networking	4	ECO Economics <sup>1</sup>	3
TGC 202 Applied C++ for Engr. Tech.	3	EET 240L Micrcontrollers	3
CHE 101 General Chemistry I	3	EET 219L AC & DC Motors	4
CHE101L General Chemistry I Lab	1	TBC 212 Methods of Engr. Tech. Anal.	<u>3</u>
EET 318 Advanced Digital Circuits	<u>3</u>		16
	18		

**Senior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
EET	Elective	3	EET 421L	Computer Design	3
EET 422L	Programmable Controllers	4	EET 429	EET Capstone Design Phase II	1
EET 428	Capstone Design Phase I	1	EET	Electives	3
HIS 102	World History II	3	MUS 101	Music Appreciation	3
ENG 203	World Literature I	<u>3</u>		<sup>2</sup> Social Science	<u>3</u>
		14			13

<sup>1</sup>ECO 231 or ECO 232

<sup>2</sup>Economics, History, Anthropology, Geography, Political Science, Psychology, Sociology. All students must take a six-semester credit hour sequence in literature or history.

**TECHNICAL ELECTIVE COURSES**

The student will select two of the following courses after approval by the student's advisor. Students may also select courses from other Engineering Technology programs if their advisor approves them as being related to the student's career goals.

<u>Course No.</u>	<u>Course Name</u>	<u>Semester Hours</u>
EET 315	Programmable Devices	3
EET 351	Advanced Circuit Analysis	3
EET 357L	Linear Integrated Circuits	4
EET 411	Data Communication Systems	3
EET 477	Digital Signal Processing	3
EET 486	Advanced Microprocessors	3
EET 490	Special Topics in Electrical Engineering Technology	1 to 4
EET 499	VLSI Circuit Design	3

**COURSE DESCRIPTIONS**

EET 101L *Introduction To Electrical Engineering Technology* – 3 hrs. This course acquaints the beginning student with the tools, equipment, and language of the electrical and electronic fields. It provides an introduction to the concepts of electric charge, force, potential difference, current, and resistance. The fundamentals of circuit theory and practice are applied to DC circuits. Study of resistance in series, parallel, and series/parallel configurations and use of resistors as loaded and unloaded voltage dividers. Students learn to read and draw schematic diagrams, proper laboratory safety practice, and the proper use of measuring instruments. Introduces the use of computer programs for circuit simulation. **Prerequisite: None.** (Offered Spring and Fall)

EET 154L *DC Theory* – 4 hrs. A study of further DC circuit concepts including Kirchhoff's Law, Thevenin's Theorem, Norton's Theorem, Superposition Theorem, and the basic design of DC instruments, magnetic circuits, and transient analysis. Laboratory work includes experimental study of these concepts. **Prerequisites: EET 101L.** (Offered Spring)

EET 186 *Microprocessor Basics* – 3 hrs. An introduction to the organization and interconnection of microprocessor system components and how these relate to a computer system. Covers the IBM PC type architecture microcomputer system. Students will learn to design microcomputer system using industry standard components and assemblies. Topics include machine architecture, operating systems, arithmetic logic, data handling, bus concepts, interrupt concepts, subroutines, stack operations, and elementary machine language programming. **Prerequisite: None.** (Offered Fall)

- EET 202L *AC Theory* – 4 hrs. A study of the basic principles of alternating circuits, vectors, phase relationships, inductance, capacitance, impedance, and reactance. Includes the application of network theorems to AC analysis, and investigation of resonance phenomena. Laboratory work to apply the concepts studied will be included in this course. **Prerequisite: EET 154L.** (Offered Fall)
- EET 205L *Digital Electronics* – 4 hrs. A study of digital fundamentals, including Boolean Algebra, different base-numbering systems, logic gates and combinational and sequential logic. Introduction to simplification techniques such as Karnaugh mapping. The basic concepts of digital design are presented. Includes laboratory. **Corequisite: MTH 112.** (Offered Spring)
- EET 206L *Solid State Theory* – 4 hrs. An introduction to semiconductor physics, including electronic devices such as solid state diodes, BJT and FET transistor amplifier circuits, with emphasis on the understanding of basic circuit analysis. Computer methods are used for transient analysis. Includes laboratory. **Prerequisite: EET 154L.** (Offered Spring)
- EET 218L *Industrial Electronics* – 4 hrs. Design, analysis, and application of circuits using operational amplifiers, four-layer solid state devices such as SCR's and triacs, and linear integrated circuits. Discussion of AC/DC motors and generators, and other industrial control devices. Laboratory included. **Prerequisites: EET 205L and EET 206L.** (Offered Fall)
- EET 219L *A.C. & D.C. Motors* – 3 hrs. Provides an understanding of electrical machinery. The study includes transformer theory and application, single-phase and three-phase connections, auto-transformers and special instrument transformers. The course also includes a study in the development of horsepower, torque, and efficiency as related to the operation of D.C. motors and generators, single-phase and three-phase motors, and alternators, step-motors, resolvers and synchros. Comparisons in the performance of machines are made. Covers design of circuits for single-phase & three-phase AC & DC motors. Laboratory experiments allow the demonstration of the concepts discussed in the classroom. **Prerequisite: EET 202L.** (Offered Spring)
- EET 230L *Applied Instrumentation* – 3 hrs. Designed for all engineering technology students, this course covers real-world applications of computers and devices for electronic instrumentation. Studies industrial devices most commonly used by industry in automated process control systems. Students learn about electrical and mechanical transducers used for the measurement of temperature, pressure, flow, and position, and complete exercises using computers and computer interfacing to give a realistic approach to the industrial application of these devices. **Prerequisite: MTH 112.** (Offered Spring)
- EET 280L *Computer Networking* – 4 hrs. An introduction to computer networks. The fundamentals of modern networking theory are covered. The course includes the terminology and technology of basic through state-of-the-art networking hardware and software. Network system concepts are examined from a wide range of applications including small workgroups, local area networks, wide area networks, and global networking. Applications to PC networks using Novell Netware and Microsoft Networks including the Internet and the World Wide Web will be presented. The course covers the material necessary to take the Network+ certification exam. **Prerequisite: None.** (Offered Fall)
- EET 315 *Programmable Devices* – 3 hrs. This course covers the design and implementation of digital systems utilizing modern programmable devices from companies such as Xilinx, Altera, and Intel. **Prerequisite: EET 205L.** (Offered upon sufficient demand).
- EET 318 *Advanced Digital Circuits* – 3 hrs. A study of basic logic functions, random and sequential logic circuits, memory, analog-to-digital and digital-to-analog converters, code converters, and applications of logic circuits in digital systems. **Prerequisites: EET 205L.** (Offered Fall)
- EET 351 *Advanced Circuit Analysis* – 3 hrs. A comprehensive coverage of circuit analysis utilizing the Laplace transform. Covers active filter design, and computer solutions using PSPICE. **Prerequisites: EET 202L AC Circuits.** (Offered upon sufficient demand)

- EET 357L *Linear Integrated Circuits* – 4 hrs. An introduction to operational amplifiers and linear integrated circuits. Applications of operational amplifiers including instrumentation, signal generation, filter and control circuits. Uses computer-aided circuit analysis. Laboratory included. **Prerequisites:** MTH 126 and EET 206L. (Offered upon sufficient demand)
- EET 411 *Data Communication Systems* – 3 hrs. Overview of digital communication and an introduction to the concepts that lead to the implementation of digital systems. Topics covered are digital signal techniques, modulation and demodulation, error control coding and system synchronization, and application of phase-locked loops. The effects of noise and noise-induced design trade-offs are discussed and the complete design of a bit synchronizer is presented. **Prerequisite:** EET 206L. (Offered upon sufficient demand)
- EET 421 *Computer Design & Construction* – 3 hrs. This course covers the current state of the art in computer design as applied to industrial applications and computer networking. **This course covers the material necessary to take the A+ certification. Prerequisite:** EET 280 Computer Networking. (Offered Spring)
- EET 422L *Programmable Controllers* – 4 hrs. Designed to introduce the student to a wide range of industrial automatic controls. The programmable logic controller is the base of study with the emphasis on programming. Included are the various types of transducers common to the industrial environment and the interfacing of I/O devices to the PLC. Modes of control, process response, and the final correcting devices are discussed. **Prerequisite:** EET 218L. (Offered Fall)
- EET 428 *EET Capstone Design Phase I* – 1 hr. Designed to demonstrate proficiency in analysis, layout, and completion of an electrical project. This first course is provided to facilitate project selection, project planning/scheduling, literature survey, and proposal writing. The student must complete an acceptable project proposal including presentation. Meeting times are flexible. **Prerequisite:** Senior Standing. (Offered Fall and Spring)
- EET 429 *EET Capstone Design Phase II* – 1 hr. A continuation of EET 428, this course focuses on the completion of the project and presentation of the final results. The course is conducted to simulate the procedures utilized by local industries to conduct engineering projects. An objective of the course is to demonstrate and practice the diverse skills and teamwork required in the modern workplace. **Prerequisite:** EET 428. (Offered Fall and Spring)
- EET 477 *Digital Signal Processing* – 3 hrs. This course provides an understanding of the applications for digital signal processors (DSP). Processor architectures are compared and industry standard evaluation tools are utilized to familiarize the student with DSP programming. **Prerequisite:** EET 240L. (Offered upon sufficient demand)
- EET 486 *Advanced Microprocessors* – 3 hrs. A study of the 32-bit advanced processors from Motorola and Intel. Covers the architecture, memory design, and addressing, and the instruction set with machine language and C++ programming. **Prerequisite:** EET 240L and EET 318. (Offered upon sufficient demand)
- EET 490 *Special Topics in Electrical Engineering Technology* – 1 to 4 hrs. This course focuses on topics based on modern trends in electrical engineering technology. This course can be taken multiple times (on different topics) with students receiving additional credit each time. The specifics of each course will be identified at the beginning of each semester. **Prerequisite:** Junior Standing. (Offered upon sufficient demand)
- EET 499 *VLSI Circuit Design* – 4 hrs. A study of design and layout techniques for microelectronics, both digital and analog. An introduction of MOS VLSI design technology. Design application projects utilizing computer workstation resources may be undertaken at the discretion of the instructor. **Prerequisite:** EET 318. (Offered upon sufficient demand)

## MECHANICAL ENGINEERING TECHNOLOGY

Graduates of this program apply scientific and engineering principles to mechanical design, computer-aided design, product evaluation and development, manufacturing engineering, computer-aided manufacturing, fluid power, and automation. Graduates find employment in steel production and fabrication, aircraft and automobile fabrication and assembly, and defense and aerospace development.

## MECHANICAL ENGINEERING TECHNOLOGY

128 Credit Hours

Accredited by the Technology Accreditation Commission (TAC) of the  
Accreditation Board for Engineering and Technology (ABET)

111 Market Place, Suite 1050

Baltimore, MD 21202

410-347-7700

### Freshman Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
ENG 101 Composition I	3	ENG 102 Composition II	3
MTH 112 Pre-calculus Algebra	3	HIS 101 World History I	3
		MDT 112L Machine & Tool Drafting	3
		MTH 113 Pre-calculus Trigonometry	3
MDT 111L Technical Drafting	3	TBC 102 Microcomputer Skills for Tech.	<u>3</u>
ART 101 Art Appreciation	3		
ORI 101 Survival Skills	<u>1</u>		15
	15		

### Sophomore Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
ENG 203 World Literature I	3	MET 200 Electromechanical Principles	3
MTH 125 Calculus I	4	MTH 126 Calculus II	4
PHY 105 Physics I	4	CHE 101 General Chemistry I }	
TGC 217 Statics	3	CHE 101L General Chemistry I Lab } <b>or</b>	4
MDT 213 Computer Graphics	<u>3</u>	PHY 106 Physics II Lecture/Lab	(4)
	17	TGC 202 Applied C++ for Engr. Tech.	3
		TGC 218 Strength of Materials	<u>3</u>
			17

### Junior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
IT 311 Properties of Materials	3	ECO Economics <sup>1</sup>	3
EET 230L Applied Instrumentation	3	MUS 101 Music Appreciation	3
MET 202 Dynamics	3	MET 331L MET Lab II	1
MET 204 Fluid Mechanics & Hydraulics	3	MET 206 Thermodynamics & Heat Trans.	3
MET 330L MET Lab I	1	MET 227 Manufacturing Processes	3
TBC 212 Methods of Engineering Anal.	<u>3</u>	TBC 201 Technical Communication	<u>3</u>
	16		16

**Senior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
IT 310	Manufacturing Cost Analysis	3	ENG 205	General Speech	3
MDT 302	Technical Design Principles	3	MDT/MET	Electives	6
MET 413	Quality Control & Reliability	3	MET 402	Machine Design	3
MDT/MET	Elective	3	MET 431L	MET Lab IV	1
MET 430L	MET Lab III	1		<sup>2</sup> Social Science	<u>3</u>
HIS 102	World History II	<u>3</u>			16
		16			

<sup>1</sup>ECO 231 or ECO 232

<sup>2</sup>Economics, History, Anthropology, Geography, Political Science, Psychology, Sociology. All students must take a six-semester credit hour sequence in literature or history.

**TECHNICAL ELECTIVE COURSES**

The student will select three advisor-approved courses from the following list. Students may also select courses from other Engineering Technology programs if their advisor approves them as being related to the student's career goals.

Thermal Science

MET 405	Hydraulic Power	3
MET 407	Fundamentals of HVAC	3
MET 408	Thermal Design	3
MET 410	Propulsion Technology	3
MET 490	Special Topics in MET	3

Manufacturing

MET 415	Design of Manu. Facilities	3
MET 416	Operations Research	3
MET 490	Special Topics in MET	3

Mechanical Design

MDT 204L	Electronics Drafting	3
MDT 206	Architectural Drafting	3
MDT 210	Piping & Sheet Metal Draft	3
MDT 301	Descriptive Geometry	3
MDT 306	Structural Drafting	3
MDT 313	CAD Design & Drafting I	3
MDT 414	CAD Design & Drafting II	3
MET 409	Mechanical Vibration	3
MET 490	Special Topics in MET	3

**COURSE DESCRIPTIONS**

MDT 111L *Technical Drafting* – 3 hrs (6 hrs. Drafting Lab). An introductory study of technical drawing theory and practice, including lettering, use of drafting instruments, orthographic projection, sections, auxiliary views, pictorial sketching, and dimensioning. An introduction to computer-aided-drafting (CAD) is included. **Prerequisite: None.** (Offered Fall and Spring)

MDT 112L *Machine and Tool Drafting* – 3 hrs (6 hrs. Drafting Lab). A continuation of MDT 111L. Includes shop processes, theory and practice of dimensioning and tolerances, an introduction to detail and working drawings, pictorial drawing, reproduction of drawings, machine shop blueprint reading, and a continuation of CAD. **Prerequisite: MDT 111L.** (Offered Spring)

MDT 204L *Electrical/Electronics Drafting* – 3 hrs. (6 hrs. Drafting Lab) A study of specialized electronic drafting theory, practice of dimensions and tolerances. Detail and working drawings, pictorial drawing, and reproduction of drawings are covered. (An elective course in the Mechanical Design option) **Prerequisite: MDT 111L.** (Offered upon sufficient demand)

MDT 206 *Architectural Drafting* – 3 hrs. An overall study of architectural working drawings including blueprint reading, representation of buildings, and construction detailing. Perspective drawing, shades and shadowing, and rendering are included. **Prerequisite: MDT 111L.** (Offered upon sufficient demand)



- MDT 210 *Piping and Sheet Metal Drafting* – 3 hrs. A course on designing and drafting pipe systems. It includes symbols, methods of representing pipe and pipe fittings, specification of parts and language of piping, layout, and drafting of sheet metal ducts. All work is done using CAD. (An elective course in the Mechanical Design option) **Prerequisite: MDT 111L.** (Offered upon sufficient demand)
- MDT 213 *Computer Graphics* – 3 hrs. A first course in the use of AutoCad™ software. Students are taught methods of computer graphical representation in two dimensions. **Prerequisite: MDT 111L.** (Offered Fall)
- MDT 252 *AutoCAD™ for Apparel* – 3 hrs. (2 two-hour lecture/lab periods per week) An introductory study of AutoCAD™ for apparel design and the basic principles of computer-assisted drafting. Offers the students hands-on practical training for drafting applications. **Not for Engineering Technology majors. Prerequisite: none.** (Offered Spring)
- MDT 301 *Descriptive Geometry* – 3 hrs. (6 hrs. Drafting Lab) A study of fundamental concepts of descriptive geometry through an emphasis on logical reasoning, visualization and practical applications. This course is based on the principles of orthographic projection: true length of a line, point of view of a line, edge view of a plane, and true shape of a plane. (An elective course in the Mechanical Design option) **Prerequisite: MDT 112L.** (Offered upon sufficient demand)
- MDT 302L *Technical Design Principles* – 3 hrs. A study of power drives including gear, chain, and V-belt drives; shafts; keys, splines, and snap rings; springs; power screws; rolling and journal bearings; and brakes, clutches, flywheels, and couplings. Use of the computer is required. **Prerequisite: TGC 218.** (Offered Fall)
- MDT 306 *Structural Drafting* – 3 hrs. A study of the drafting and design of structural systems in steel, wood, and concrete with emphasis on the composition characteristics of the material. (An elective course in the Mechanical Design option). **Prerequisites: TGC 218 and MDT 111L.** (Offered upon sufficient demand)
- MDT 313 *Computer-Aided Drafting and Design I* – 3 hrs. This course offers hands-on training in two- and three-dimensional computer-aided design software. (An elective course in the Mechanical Design option) **Prerequisite: MDT 213.** (Offered upon sufficient demand)
- MDT 414 *Computer-Aided Drafting and Design II* – 3 hrs. A continuation of MDT 313. Creation of a full-scale three-dimensional computer model design. Various checks, such as corridor clearance, and horizontal and vertical layout schemes that can be carried out using a model, and error-reduction design methods not possible with two-dimensional modeling techniques are presented. (An elective course in the Mechanical Design option.) **Prerequisite: MDT 313.** (Offered upon sufficient demand)
- MET 200 *Electromechanical Principles* – 3 hrs. A survey of the principles of DC circuits, AC circuits, and electronics. These principles will then be applied to the design of electromechanical devices such as motors, transducers, solenoids, and controls. This course is designed for non-EET majors who need a knowledge of electromechanical devices and measuring instruments. **Prerequisite: MTH 113.** (Offered Spring)
- MET 202 *Dynamics* – 3 hrs. A study of the movement of bodies and the description of their motion resulting from applied forces. The kinematic concepts of displacement, velocity, and acceleration, force-system kinetics, and the application of momentum and energy conservation laws are covered. **Prerequisite: TGC 217.** (Offered Fall)
- MET 204 *Fluid Mechanics and Hydraulics* – 3 hrs. A study of the fundamentals of fluid mechanics including fluid properties, fluid statics and dynamics, continuity and energy principles. Fluid flow in piping systems is covered, as well as open channel flow, pneumatics, and hydraulics. Use of the computer is required. **Prerequisite: TGC 217.** (Offered Fall)

- MET 206 *Thermodynamics and Heat Transfer* – 3 hrs. A study of the basic laws of thermodynamics, the thermodynamic properties of fluids, and the flow of heat energy by conduction, convection, and radiation. Applications include power plants, internal combustion engines, compressors, turbines, refrigeration, and heat exchangers. Use of the computer is required. **Prerequisite:** TGC 217. (Offered Spring)
- MET 227 *Manufacturing Processes* -- 3 hrs. A study of the traditional manufacturing processes such as machining, casting, hot and cold forming, finishing, heat-treating, and joining. Nontraditional machining processes such as chemical machining, electrical discharge machining, laser beam machining, and plasma beam machining will also be covered. **Prerequisite:** None. (Offered Spring)
- MET330L *Mechanical Engineering Technology Lab I* – 1 hr. This course will include laboratory projects in statics, fluid mechanics, and hydraulics. Lab preparation sessions will review theory before each project. Computer generated reports will be turned in by each student for each project and some oral presentations will be required. A specific lab report format will be adhered to. **Prerequisites or Co-requisites:** TGC 217 and MET 204. (Offered Fall)
- MET331L *Mechanical Engineering Technology Lab II* – 1 hr. This course will include laboratory projects in thermodynamics, heat transfer, and electromechanics. Lab preparation sessions will review theory before each project. Computer generated reports will be turned in by each student for each project and some oral presentations will be required. A specific lab report format will be adhered to. **Prerequisites or Co-requisites:** MET 200 and MET 206 (Offered Spring)
- MET 402 *Machine Design* – 3 hrs. A study of machine elements, strength of materials in mechanical design, stress analysis, and various types of power transmission. A design project is conducted along with the lectures. **Prerequisite:** MDT 302. (Offered Spring)
- MET 405 *Hydraulic Power* – 3 hrs. A course in the design and analysis of hydraulic power systems. Topics include: hydraulic system analysis using the energy equation; design configurations for controlling flow and pressure; operating characteristics of pumps, valves, heat exchangers, accumulators, and accessories and design and analysis of hydraulic systems for some typical applications. **Prerequisites:** MET 204 and MET 206. (Offered upon sufficient demand)
- MET 407 *Fundamentals of Heating, Ventilating, and Air Conditioning* – 3 hrs. Study of the basic principles of commercial and residential air conditioning and heating systems. The calculation of heating and cooling loads and the use of the psychometric chart is covered. Use of the computer is required. **Prerequisite:** MET 206. (Offered Fall in alternate years)
- MET 408 *Thermal Design* – 3 hrs. A review and advanced study of the principles of heat transfer. Practical systems involving thermal energy utilization and transfer will be designed. Use of the computer is required. **Prerequisite:** MET 206. (Offered Fall in alternate years)
- MET 409 *Mechanical Vibration* – 3 hrs. A study of the response of structures to vibrational motion. Includes free and forced motion, and damped and undamped systems. Concepts of natural mode, natural frequency, and resonance phenomena are covered. Use of the computer is required. **Prerequisites:** MET 202 and TGC 218. (Offered upon sufficient demand)
- MET 410 *Propulsion Technology* – 3 hrs. Study of power generation through the internal combustion process. Included in the study are engines, the turbine, and the rocket engine concept. Use of the computer is required. **Prerequisite:** MET 206. (Offered upon sufficient demand)
- MET 413 *Quality Control and Reliability* – 3 hrs. Fundamental working concepts and methods of measuring, evaluating and interpreting industrial data to insure product quality, emphasizing compatibility analysis and statistical control charts. Reliability theory is also covered. Use of the computer is required. **Prerequisite:** Senior standing or permission of instructor. (Offered Fall)

- MET 415 *Design of Manufacturing Facilities* – 3 hrs. Methods for developing optimal plant layout and materials handling systems are studied. Emphasis is placed on the interrelationship of materials handling systems and equipment location for smooth product flow. A term project provides experience in an actual manufacturing facilities design. Use of the computer is required. **Prerequisite: Senior standing or permission of instructor.** (Offered upon sufficient demand)
- MET 416 *Operations Research* – 3 hrs. Quantitative techniques used in the solution of manufacturing operations problems are studied. Topics include planning and control methods (CPM and PERT), linear programming, queuing theory, and simulation. Use of the computer is required. **Prerequisite: Senior standing or permission of instructor.** (Offered upon sufficient demand)
- MET 430L *Mechanical Engineering Technology Lab III* – 1 hr. This course will include laboratory projects in manufacturing processes, strength of materials, and properties of materials. Lab preparation sessions will review theory before each project. Computer generated reports will be turned in by each student for each project and some oral presentations will be required. A specific lab report format will be adhered to. **Prerequisites or co-requisites: MET 227, TGC 218 and INT 311.** (Offered Fall)
- MET431L *Mechanical Engineering Technology Lab IV* – 1 hr. This course will include laboratory projects in quality control and machine design. Lab preparation sessions will review theory before each project. Computer generated reports will be turned in by each student for each project and some oral presentations will be required. A specific lab report format will be adhered to. **Prerequisites or Co-requisites: MET 413 and MET 402.** (Offered Spring)
- MET 490 *Special Topics in Mechanical Engineering Technology* – 1 to 4 hr. This course focuses on topics based on modern trends in mechanical engineering technology. This course can be taken multiple times (in different topics) with students receiving additional credit each time. The specifics of each course will be identified at the beginning of each semester. **Prerequisite: Junior Standing.** (Offered upon sufficient demand)
- TBC 102 *Microcomputer Skills for Technology* – 3 hrs. An introduction to the personal computer as a tool for engineering technology. This course covers computer terminology, Microsoft Windows™, word processing for technical reports, and spreadsheet programs as a management and scientific tool. **Prerequisite: None.** (Offered Fall and Spring)
- TBC 201 *Technical Communications* – 3 hrs. **Online Class.** This course covers all aspects of communication that the technical person is likely to encounter in industry. It emphasizes techniques for clear, concise expression of thoughts in written and oral communication. The basic principles and procedures for organizing technical reports, letters, and presentations are explained. The student will learn how to communicate ideas in writing clearly and efficiently. Students will learn how to plan a writing task, prepare technical correspondence, write informal and formal reports, use graphic aids in reports, make oral presentations, and use presentation software. **Prerequisite: None.** (Offered Fall and Spring)
- TBC 212 *Methods of Engineering Analysis* – 3 hrs. This course focuses on the application of algebra, trigonometry and calculus to engineering problems. Microsoft Excel™ is used for curve fitting, solving single and simultaneous algebraic and differential equations. Probability, statistics, and special functions are also addressed. **Prerequisite: TBC 102.** (Offered Fall)
- TGC 202 *Applied C++ for Engineering Technology* – 3 hrs. An introduction to the applications of the C++ programming language in the fields of engineering and technology. The course focuses on how C++ is used to solve engineering problems, integrate software into hardware systems and extend the functionality of many industry standard software applications. **Prerequisite: TBC 102.** (Offered Spring)

- TGC 217 *Statics* – 3 hrs. A study of force systems in equilibrium and their action on bodies at rest. Also covers the methods of joints and sections for the solution of trusses, friction, and first and second moments of areas. The course emphasizes development of problem solving skills. **Prerequisite: MTH 113.** (Offered Fall and Spring)
- TGC 218 *Strength of Materials* – 3 hrs. A study of the concepts of stress, strain, and Hooke’s Law. Also studied are the strength and deformation of axial force members, shafts, beams, and columns, and an introduction to combined stress. **Prerequisite: TGC 217.** (Offered Spring)

**INDUSTRIAL TECHNOLOGY**  
332-333 Engineering and Technology Building  
(256) 372-5573

### INTRODUCTION

Industrial Technology is a field of study designed to prepare technical and/or management oriented professionals for employment in business, industry, education, and government. Industrial Technology is primarily involved with the management, operation, and maintenance of complex technological systems. The Industrial Technology program provides students with knowledge and understanding of people, tools, materials, machines, and processes and their relationship to industrial production. The Industrial Technology professionals work with managers, engineers, production employees, scientists, and supervisors in the industrial world.

By definition, Industrial Technology leads to a bachelor’s degree. The Department offers an inverted Bachelor of Science Degree program in Industrial Technology for the Associate of Applied Science Degree (or its equivalency) graduate. The program is inverted in terms of when courses are completed. The student completes 36-42 semester hours technical coursework, 6-12 semester hours of management coursework, and some of his/her general education coursework at the 2-year college level. The combined technical and management coursework cannot exceed 48 semester hours. The students may be awarded 18 semester hours of credit for validated wage earning work experience in a technical specialty. A passing score on an approved occupational proficiency examination may be required for some credit. The student then transfers to AAMU to complete the 36 semester hours of coursework in an area under the Applied Technology Option or Technical-Industrial Training and Development Concentrations, and the remaining general education coursework. The required 44 semester hours of general education coursework may also be completed at any regionally accredited 2-year or 4-year college. Only coursework with a “C” grade or higher is accepted for transfer credit. This curriculum arrangement will allow the student to be gainfully employed in his/her technical specialty after he/she has completed the AAS degree program (or its equivalency), and enroll as a full-time or part-time student in the Bachelor of Science Degree program in Industrial Technology. A student who meet all admission requirements of the University’s Teacher Education Program maybe admitted to the teaching field program in either Technical Education or Technology Education

The Bachelor of Science Degree program in Industrial Technology is also available to graduates who have completed an Associate of Science Degree Program at a regionally accredited community or junior college. A total of 64 semester hours of general education coursework maybe transferred into Industrial Technology. All coursework that may be accepted under this transfer option is listed in the Statewide Transfer & Articulation Reporting System (STARS).

### MISSION/OBJECTIVES

The mission of the Industrial Technology program is to prepare students to function effectively and efficiently as a manager or technologist in today’s ever-changing, competitive workplace. This is accomplished through a curriculum that blends technical and managerial concepts with subjects in communication, humanities and fine arts, science and mathematics, and history, behavioral and social sciences to prepare students to be contributing citizens in today’s society. The objectives of the Industrial Technology program are to:

1. Provide students with the necessary depth and breadth in mathematics, science, and other academic subjects, and an understanding of their relationships to Industrial Technology.
2. Provide students with knowledge about the development of technology; its effects on people, the environment, culture; and industry; and its organization, personnel systems, techniques, resources, and products, and the impact of these on society and culture.
3. Provide students with knowledge about graphics communication technology/printing production management and mechanical drafting/design technology, including the efficient use of communication resources to transfer information to extend human potential.
4. Provide students with knowledge about construction technology to include efficient use of resources to build structures or construct onsite structures.
5. Provide students with knowledge of manufacturing to include efficient use of resources to extract and convert raw/recycled materials into industrial and consumer goods.
6. Provide students with knowledge of transportation to include efficiently using resources to obtain time and to attain and maintain direct physical contact and exchange among individuals and societal units through the movement of materials/goods and people.
7. Provide students with skills knowledge and creative ability to solve technological problems in today's industry, manage resources effectively and efficiently, and maintain workplaces free of recognizable health and safety hazards.
8. Provide students with knowledge to develop instructional materials and train the workforce.
9. Provide students with skills to effectively and efficiently use equipment, machines, tools, and resources of industry in a safe manner.

## **PROGRAM OFFERINGS**

The bachelor's degree program in Industrial Technology includes the following seven (7) curriculum concentrations:

- Graphics Communication Technology/Printing Production Management Concentration.
- Industrial/Safety Management and Technology Concentration.
- Manufacturing/Quality Management and Technology Concentration.
- Mechanical Drafting/Design Technology Concentration.
- Technical Education Concentration.
- Applied Technology and Management Option (a completed AAS Degree or equivalency required)
- Technology Education

In cooperation with the School of Education, the Department of Technology offers the required professional and technical coursework for the secondary teaching field programs in Technical Education and Technology Education. The curriculum sequences for these two teaching field programs are outlined in this Undergraduate Bulletin under the School of Education, Department of Curriculum and Instruction.

## **FINANCIAL ASSISTANCE/SCHOLARSHIPS**

All prospective students should contact the Financial Aid Office and/or Admissions Office to seek information on available forms of financial aid and scholarships.

## **COOPERATIVE EDUCATION/INTERNSHIPS**

Students are encouraged to complete an industrial internship or co-op work experience as part of their of study. The exact type and length of the experience depends upon the individual student's interests, needs, and backgrounds. Students receive course credit for the internship or co-op work experience; and financial compensation for the coordinated, supervised, co-op work experience, which is most valuable after graduation. Students must make arrangement with the Internship Work Experience Coordinator prior to enrolling in these courses.

## **STUDENT/PROFESSIONAL ORGANIZATIONS**

The following student/professional organizations are of interest to students in the Industrial Technology and Education Program in the School of Engineering and Technology, Department of Technology:

- National Association of Industrial Technology (NAIT) University Chapter (Industrial Technology).
- Technology Student Association (TSA) (Technology Education).
- Iota Lambda Sigma (Technical Education/Trades and Industrial Education).
- Graphic Arts Communication Club (Graphic Arts Communication/Printing Production Management).

## **SPECIAL ADMISSIONS CRITERIA**

All students admitted to the University are eligible for the Bachelor of Science Degree program in Industrial Technology. Students seeking admission to the teaching field programs in Technical Education or Technology Education must satisfy all admission requirements of the School of Education with respect to the Teacher Education Program.

## **SPECIAL FEES/ASSESSMENTS**

Specific fees are charged for selected laboratory courses in Industrial Technology and are listed in the laboratory fee schedule in the University's Undergraduate Bulletin.

## **GRADUATION/PROGRAM REQUIREMENTS FOR INDUSTRIAL TECHNOLOGY PROGRAM**

- **University General Education Requirements (44 semester credit hours).** See general education requirements in the University's Undergraduate Bulletin.
- **Industrial Technology Basis Courses (12 semester hours):** INT105, MDT111, MTH113, and TBC201.

- **Graphics Communication Technology/Printing Production Management Concentration (39 semester hours):** INT101, INT106, INT110, INT213, INT214, INT217, INT307, INT308, INT417, INT418, INT455, and INT456; 44-semester hours of general education; 12-semester hours in Industrial Technology; 25-semester hours of specified coursework; and 9-semester hours of approved elective coursework.
- **Industrial/Safety Management and Technology Concentration (36-semester hours):** INT200, INT300, INT310; INT311, INT327, INT333, INT334, INT341, INT420, INT422, INT425, and INT426; 44-semester hours in general education; 12-semester hours in Industrial Technology basic coursework; 29-semester hours of specified technical coursework; and 6-semester hours of approved elective coursework.
- **Manufacturing/Quality Management and Technology Concentration (36-semester hours):** INT200, INT206, INT304, INT310, INT311, INT327, INT333, INT334, INT400, INT403, INT404, INT430, and INT484; 44-semester hours in general education; 12-semester hours in Industrial Technology; 26-semester hours of specified technical coursework; and 9-semester hours of approved elective coursework.
- **Mechanical Drafting/Design Technology Concentration (36-semester hours):** MDT111, MDT112, MDT204, MDT206, MDT210, MDT213, MDT301, MDT302, MDT306, MDT313, MDT407, and MDT408; 44-semester hours in general education; 12-semester hours in Industrial Technology; 24-semester hours of specified technical coursework; and 12-semester hours of approved elective coursework.
- **Technical Education Major (teaching) aligned with Secondary Education (42-semester hours):** INT410, TBC201, TTE118, TTE302, TTE305, TTE403, TTE404, TTE405, TTE406, TTE407, TTE435, TTE440, TTE474, INT105, and MDT111; 44-semester hours in general education; 2-semester hours in professional studies; and 12-semester hours in Internship (TTE495).
- **Technology Education Major (teaching) aligned with Secondary Education (41-semester hours):** INT102, INT105, INT205, INT207, INT221, INT303, INT306, INT314, INT421, MDT111, TTE303, TTE304, TTE401, and TTE404; 44-semester hours in general education; 28-semester hours in professional studies; 12-semester hours in Directed Teaching (TTE495).
- **Technical-Industrial Training and Development Concentration (36-semester hours):** TTE302, TTE305, TTE404, TTE406, TTE407, TTE435, TTE450, TTE474, TTE475, and 6-semester hours of approved electives for the Industrial Technology Major; 44-semester hours in general education; and 48-semester hours of coursework in a completed Industrial Technology discipline or related technologies at the AAS degree level or its equivalency.
- **Applied Technology and Management Option (48-semester hours):** Completed Industrial Technology or related technology program at the AAS Degree level or its equivalency); 44-semester hours in general education; 12- to 18- semester hours of advisor approved technology management emphasis coursework in either construction management, industrial management, manufacturing management, printing management, safety management, or supervisory management; and 18- to 24-semester hours of concentrated coursework in a technology discipline.
- **Approved elective coursework for Industrial Technology Major:** CWE220, CWE320, CWE420, INT405, INT406, INT408, INT410, INT490, INT491, MGT207, MGT213, MGT308, MGT315, MGT322, MGT413, MGT433, MKT315, TTE303, TTE304, TTE401, TTE399, TTE403, TTE405, TTE450, any BIO, CET, CHE, CMP, EET, MDT, MET, MTH, PHY, TBC, or TGC course.
- **Career/Technical Certificate Requirements for an Endorsement in Technical Education:**

**Level 1 Certificate Endorsed in Technical Education:**

A minimum of 14,000 clock hours (seven years) of work experience in the past ten years as a wage earner in the technical enterprise to be taught and completed technical associate degree in a post-secondary institution; or completion of an approved postsecondary career/technical program and 6,000 clock hours (three years) of work experience within the past eight years immediately preceding the submission date of the application in the technical enterprise in the occupation that will be taught.

**Level 2 Certificate Endorsed in Technical Education:**

- TTE302 Curriculum Development and Evaluation in Career/Technical Education (3 hrs.)
- TTE305 Learning Resources and Technology in Career/Technical Education (3 hrs.)
- TTE404 Classroom/Laboratory Management in Career/Technical Education (3 hrs.)
- TTE406 Methods of Teaching Career/Technical Education (3 hrs.)
- TTE440 Special Needs and Career/Technical Education (3 hrs.)

Completion of the New Teacher Institute  
 Passing score on an approved occupational proficiency examination

**Level 3 Certificate Endorsed in Technical Education:**

- TTE407 Career/Technical Student Organizations (3 hrs.)
- TTE435 Safety Principles and Practices in Career/Technical Education (3 hrs.)
- TTE474 Foundations and Principles of Career/Technical Education (3 hrs.)

3 semester hours of Computer Applications  
 44 semester hours of General Education coursework in Areas I-V

**Level 4 Certificate Endorsed in Technical Education:**

Completion of the approved teacher education program in Technical Education at bachelor's degree level; or  
 Completion of the approved teacher education program in Technical Education at the Alternative-A level.

**Level 5 Certificate Endorsed in Technical Education:**

Completion of the approved teacher education program in Technical Education at the master's degree level.

**•Career/Technical Certificate Requirements for Endorsements in Healthcare Science and Technology**

**Level 4 Certificate Endorsed in Healthcare Science and Technology:**

Is eligible to hold the Level 2 or Level 3 certificate endorsed in Healthcare Science and Technology; has completed the New Teacher Institute; and has completed with a "C" or better the courses required for the Level 2 Certificate Endorsed in Technical Education.

**Level 5 Certificate Endorsed in Healthcare Science and Technology:**

Completion of the approved teacher education program in Technical Education at the Alternative-A level.

**INDUSTIAL TECHNOLOGY MAJOR**

Graphics Communication Technology/Printing Production Management Concentration  
 127 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs..</i>
ENG 101	Composition I <b>or</b>	(3)	ENG 102	Composition II <b>or</b>	(3)
ENG 101H	Honors Composition I	(3)	ENG 102H	Honors Composition II	(3)
MTH 112	Pre-calculus Algebra	3	INT 105	Intro. Graphics Com/Cmp. Tech.	3
INT 101	Printing Industry/Typography	3	INT 110	Graphics Art Processes	3
INT 106	Image Conversion	3	MDT 111	Technical Drafting	3
INT 102	Intro. to Ind./Applications Tech.	3	MTH 113	Pre-calculus Trigonometry	3
ORI 101	Survival Skills	<u>1</u>		University Requirements	<u>2</u>
		15			17



### Sophomore Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
CHE 111	Applied Chemistry I	3	CHE 112	Applied Chemistry II	3
CHE 111L	Applied Chemistry I Lab	1	CHE 112L	Applied Chemistry II Lab	1
HIS	Approved History Elective	3	INT 214	Adv. Offset-Image Transfer	3
INT 200	Occupational Safety and Health	3	INT 217	Graphics Design and Planning	3
INT 213	Offset Image Transfer	3	MDT 213	Computer Graphics	3
MUS 101	Music Appreciation <b>or</b>	(3)		Approved Social Science Course	<u>3</u>
ART 101	Art Appreciation	<u>(3)</u>			16
		18			

### Junior Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ECO	Approved Economics Course	3	ENG	Approved Literature Course	3
ENG	Approved Literature Course	3	ENG 205	General Speech	3
HIS	Approved History Course	3	INT 307	Printing Management	3
INT 301	Printing Estimating	3	INT 308	Printing Inks and Substrates	3
MDT 313	CADD I	3	MGT 207	Legal Environments and Ethics	<u>3</u>
TBC 201	Technical Communications <b>or</b>	3			15
OSM 310	Business Communication	<u>(3)</u>			
		18			

### Senior Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
INT 417	Electronics Publishing I	3	INT 418	Electronics Publishing II	3
INT 455	Quality in Printing Industry	3	INT 456	Senior Problems/Seminar	3
MGT 315	Principles of Management	3	MGT 433	Human Resources Management	3
MKT 315	Principles of Marketing	3		Approved Elective	3
	Approved Elective	<u>3</u>		Approved Elective	<u>3</u>
		15			15

## INDUSTRIAL TECHNOLOGY MAJOR

Industrial/Safety Management and Technology Concentration

127 Credit Hours

Career Information: This option is designed to provide students with an understanding of people, tools, materials, machines, and processes, and their relationship to industrial production; students are prepared to solve technical and human problems in different industrial situations. An Industrial Safety Management and Technology graduate is a valuable liaison person linking the technical/engineering with the supervision/management components.

### Freshman Year

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 101	Composition I <b>or</b>	3	ENG 102	Composition II <b>or</b>	3
ENG 101H	Honors Composition I	(3)	ENG 102H	Honors Composition II	(3)
MTH 112	Pre-calculus Algebra	3	INT 105	Intro. Graphics Com/Cmp. Tech.	3
PHY 103L	General Physics I	4	HIS 101	World History I	3
INT 106	Image Conversion	3	MUS 101	Music Appreciation <b>or</b>	3
INT 102	Intro. to Ind./Applications Tech.	3	ART 101	Art Appreciation	(3)
ORI 101	Survival Skills	<u>1</u>	MTH 113	Pre-calculus Trigonometry	3
		16		University Requirements	<u>2</u>
					17

**Sophomore Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
INT 200	Occupational Safety and Health	3	HIS 203	Found. Of American His/Gov't.	3
INT 207	Intro. To CADD: Const./Mfg.	3	ENG 202	Survey English Literature II <b>or</b>	3
INT 210	Mfg./Machine Tools Tech.	3	ENG 204	World Literature II	(3)
INT 221	Materials and Processes I	3	INT 205	Intro. to Ind. P/E Control Sys.	3
ENG 201	Survey of English Lit. I <b>or</b>	3	INT 222	Materials and Processes II	3
ENG 203	World Literature I	<u>(3)</u>		Science Elective with Lab	<u>4</u>
		15			16

**Junior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ECO	Required Economics Course	3	ENG 205	General Speech	3
INT 300	Time and Motion Studies	3	INT 306	Communications Technologies	3
INT 303	Transportation Tech.: P/E Sys.	3	INT 310	Mfg. Cost Analysis	3
INT 311	Properties of Materials	3	INT 314	Construction Technologies	3
INT 327	Applied Statistics in Industry	3	PSY 201	General Psychology <b>or</b>	3
TBC 201	Technical Communications <b>or</b>	3	SOC 201	Intro. to Sociology	<u>(3)</u>
OSM 310	Business Communication	<u>(3)</u>			15
		18			

**Senior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
INT 333	Plant Layout/Mtls. Handling	3	INT 420	Industrial Hygiene	3
INT 421	Bio-related Technologies	3	INT 422	Ind. Hazardous Mtls. Mgt.	3
INT 425	Industrial Safety Standards I	3	INT 334	Production and Inven. Controls	3
INT 341	Fire Prev./Protection in Ind.	3	INT 426	Industrial Safety Standards II	3
	Advisor Approved Elective	<u>2</u>		Advisor Approved Elective	<u>2</u>
		15			15

**INDUSTIAL TECHNOLOGY MAJOR**

Manufacturing/Quality Management and Technology Concentration  
127 Credit Hours

**Freshman Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 101	Composition I <b>or</b>	3	ENG 102	Composition II <b>or</b>	3
ENG 101H	Honors Composition I	(3)	ENG 102H	Honors Composition II	(3)
MTH 112	Pre-calculus Algebra	3	INT 105	Intro. Graphics Com/Cmp. Tech.	3
PHY 103L	General Physics I	4	HIS	Required History Course	3
MDT 111	Technical Drafting	3	MTH 113	Pre-calculus Trigonometry	3
INT 102	Intro. to Ind./Applications Tech.	3		Fine Arts Elective	3
ORI 101	Survival Skills	<u>1</u>		University Requirements	<u>2</u>
		16			17

**Sophomore Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG	Required Literature Course	3	ENG 205	General Speech	3
INT 207	Intro. To CADD: Const./Mfg.	3	INT 205	Intro. to Ind. P/E Control Sys.	3
INT 210	Mfg./Machine Tools Tech.	3	INT 206	Computer Applications in Mfg.	3
INT 221	Materials and Processes I	3	INT 222	Materials and Processes II	3
	Science Elective with Lab	<u>4</u>		Required Humanities Course	<u>3</u>
		16			15

### Junior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
INT 200 Occupational Safety/Health	3	INT 304 Mfg. Organizations and Mgt.	3
INT 311 Properties of Materials	3	INT 310 Mfg. Cost Analysis	3
INT 316 Intro. to CNC	3	INT 317 Industrial Robotics	3
INT 327 Applied Statistics in Industry	3	INT 334 Production/Inventory Controls	3
TBC 201 Technical Communications <b>or</b>	3	Required Social Science Course	<u>3</u>
OSM 310 Business Communication	(3)		15
Social Science Elective	<u>3</u>		
	18		

### Senior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
INT 400 Quality Assurance/Mat. Testing	3	INT 430 Design and Mfg. Problems	3
INT 403 Statistical Quality Controls	3	INT 484 Intro. to CIM	3
INT 404 Improved Mfg. Systems	3	ECO Required Economics Course	3
INT 333 Plant Layout/Materials Handling	3	Approved Mgt. Elective	3
Approved Area II Elective	<u>3</u>	Approved Mgt. Elective	<u>3</u>
	15		15

## INDUSTIAL TECHNOLOGY MAJOR

Mechanical Drafting/Design Technology Concentration  
127 Credit Hours

### Freshman Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
ENG 101 Composition I <b>or</b>	3	ENG 102 Composition II <b>or</b>	3
ENG 101H Honors Composition I	(3)	ENG 102H Honors Composition II	(3)
MTH 112 Pre-calculus Algebra	3	INT 105 Intro. Graphics Com/Cmp. Tech.	3
PHY 103L General Physics I	4	MDT 112 Machine and Tools Drafting	3
MDT 111 Technical Drafting	3	MTH 113 Pre-calculus Trigonometry	3
INT 102 Intro. to Ind./Applications Tech.	3	MUS 101 Music Appreciation <b>or</b>	3
ORI 101 Survival Skills	<u>1</u>	ART 101 Art Appreciation	(3)
	16	University Requirements	<u>2</u>
			17

### Sophomore Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
HIS Required History Course	3	INT 217 Graphics Planning and Design	3
INT 200 Occupational Safety/Health	3	INT 222 Materials and Processes II	3
INT 221 Materials and Processes I	3	MDT 206 Architectural Drafting	3
MDT 204 Electrical/Electronics Drafting	3	MDT 213 Computer Graphics	3
MDT 210 Piping/Sheet Metal drafting	<u>3</u>	Science Elective with Lab	<u>4</u>
	15		16

**Junior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
INT 311	Properties of Materials	3	ENG 205	General Speech	3
INT 327	Applied Statistics in Industry	3	MDT 302	Technical Design Principles	3
ENG	Required Literature Course	3	MDT 306	Structural Drafting	3
MDT 301	Descriptive Geometry	3	TBC 201	Technical Communications <b>or</b>	(3)
MDT 313	CADD I	<u>3</u>	OSM 310	Business Communications	(3)
		15		Humanities Elective	3
				Social Science Elective	<u>3</u>
					18

**Senior Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ECO	Required Economics Course	3	INT 408	Mfg. And Ergonomics	3
INT 417	Electronics Publishing I	3	MDT 414	CADD II	3
MDT 407	Mechanical Design	3		Advisor Approved Elective	3
	Advisor Approved Elective	3		Advisor Approved Elective	3
	Advisor Approved Elective	<u>3</u>		Social Science Elective	<u>3</u>
		15			15

**INDUSTRIAL TECHNOLOGY MAJOR**

Technical-Industrial Training and Development Option  
 (Minimum AAS Degree or equivalency is required for this option)  
 127-128 Credit Hours

**Career Information:** This concentration is designed to prepare students for teaching positions in a career/technical program in high schools, technical colleges, technical institutes, business and industry, and government. A minimum of three (3) years validated wage earning work experience is required.

**Freshman Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG 101	Composition I <b>or</b>	(3)	ENG 102	Composition II <b>or</b>	(3)
ENG 101H	Honors Composition I	(3)	ENG 102H	Honors Composition II	(3)
MTH 112	Pre-calculus Algebra	3	MTH 113	Pre-calculus Trigonometry <b>or</b>	(3)
PHY 103L	General Physics I	4	TTE 118	Technical Mathematics	(3)
HIS	Required History Course	3		Fine Arts Elective	3
ORI 101	Survival Skills	<u>1</u>		Technical Course	3
		16		Technical Course	3
				University Requirements	<u>2</u>
					17

**Sophomore Year**

<i>First Semester</i>		<i>Sem.Hrs.</i>	<i>Second Semester</i>		<i>Sem.Hrs.</i>
ENG	Required Literature Course	3	ENG	Literature Elective	3
INT 200	Occupational Safety/Health	3	INT 105	Intro. Graphics Com/Cmp Tech	3
HIS	History Elective	3		Science Elective with Lab	4
	Technical Course	3		Technical Course	3
	Technical Course	3		Technical Course	<u>3</u>
ECO 200	Basic Economics	<u>3</u>			16

18

### Junior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
TTE 302 Curr. Dev./Eval. In C/TE	3	ENG 205 General Speech	3
TTE 305 Lrng. Resources/Tech. in C/TE	3	PSY 201 General Psychology <b>or</b>	(3)
TBC 201 Technical Communication <b>or</b>	(3)	SOC 201 Introduction to Sociology	(3)
OSM 310 Business Communications	(3)	TTE 407 C/T Student Organizations	3
Technical Course	3	Technical Course	<u>3</u>
Technical Course	<u>3</u>		15
	15		

### Senior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
TTE 404 CR/Lab Organization & Mgt.	3	TTE 440 Special Needs Students & C/TE	3
TTE 406 Methods of Teaching C/TE	3	TTE 450 Practicum	3
TTE 435 Safety Prin./Practices in C/TE	3	TTE 475 Eval. Students Ach. In C/TE	3
Technical Course	3	Technical Course	3
Elective Course	<u>3</u>	Elective Course	<u>3</u>
	15		15

## INDUSTIAL TECHNOLOGY MAJOR

Applied Technology and Management Option (2+2)  
(AAS Degree Transfer Program)  
64 Credit Hours

### Junior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
General Education	10	General Education	10
Management Emphasis Course	3	Management Emphasis Course	3
Approved Technical Elective	<u>3</u>	Approved Technical Elective	<u>3</u>
	16		16

### Senior Year

<i>First Semester</i>	<i>Sem.Hrs.</i>	<i>Second Semester</i>	<i>Sem.Hrs.</i>
General Education	4	General Education	4
Management Emphasis Course	3	Management Emphasis Course	3
Approved Technical Elective	3	Approved Technical Elective	3
Approved Technical Elective	3	Approved Technical Elective	3
Approved Technical Elective	<u>3</u>	Approved Technical Elective	<u>3</u>
	16		16

**Management Emphasis Courses:** Students must complete 12- to 18-semester hours of coursework in one of the following technology management emphasis areas:

- Printing Production Management: INT217, INT301, INT307, INT308, INT327, INT455, INT456, and TBC201 or OSM310.
- Industrial Technology Management: INT300, INT310, INT327, INT333, INT334, INT401, and TBC201 or OSM310.
- Manufacturing Technology Management: INT300, INT304, INT327, INT310, INT311, INT430, and INT484.

- Quality Technology Management: INT300, INT310, INT311, INT327, INT400, INT403, INT404, INT408 and INT445.
- Safety Technology Management: INT341, INT342, INT420, INT422, INT425, INT426, and INT445.
- Supervisory Technology Management: INT300, INT405, INT406, INT410, INT490, INT491, MGT315, MGT322, and MGT433.

**Approved Technical Elective Courses:** Students must complete 18- to 24-semester hours of advisor approved technical coursework in a technology discipline. At least 12-semester hours must be at the 300-400 level.

## COURSE DESCRIPTIONS

- INT101 *Printing Industry/Typography* – 3 hrs. Elementary principles of typesetting, including layout of the California job case and simple exercises in hand composition; setting simple jobs; advanced techniques of typesetting, composition of color forms, programs, announcements, invitations, and setting display composition. 2Lect/3lab. **Pre-requisites: None.** (Offered Fall Semester)
- ITE 102 *Introduction to Industrial/Application Technology (formerly Introduction to Technological Systems)* – 2 hrs. An introductory course in technology. This course explains technology, what it is, how it works, and how it affect our lives. The course centers on the four basic areas of industrial technology systems of manufacturing, construction, communication and transportation. It introduces students to important topics such as resources, design, production systems, and bio-related systems. It also help students develop problem-solving abilities, enhance creativity, assess and apply technology, and develop communication skills. Guided tours and field trips are included. Students are expected to choose specialized areas of study in Industrial Technology at the end of this course. **Prerequisites: None.** (Offered Fall )
- INT105 *Introduction to Graphics Communication/Computer Technology* – 3 hrs. Course introduces the student to all major aspects of graphic communication; and the uses of the computer as a tool in technology. (Offered Spring)
- INT106 *Image Conversion* – 3 hrs. Fundamentals of offset presswork; preparation of the one color presswork. **Prerequisites: None.** (Offered Fall)
- INT110 *Graphic Arts Processes* – 3 hrs. A study of photographic processes for black and white copy, introduction to color applications, film processing, quality control. **Prerequisites: None.** (Offered Spring)
- INT200 *Occupational Safety and Health* – 3 hrs. An introductory study of the significance of maintaining quality occupational safety and health standards in the work place; safety education and promotion; and occupational safety and health requirements. **Prerequisites: None.** (Offered Fall and Summer based on need)
- INT205 *Introduction to Industrial Power and Energy Control Systems (formerly, Power and Energy Systems)* – 3 hrs. A basic study of energy sources, means of harnessing and transmitting energy and the effects of power systems. **Prerequisites: None.** (Offered Spring)
- INT206 *Computer Applications in Manufacturing* – 3 hrs. **Prerequisites: None.** (Offered Fall ).
- INT207 *Introduction to CADD: Construction and Manufacturing* – 3 hrs. The use of computer in the design or constructed and manufactured goods. **Prerequisites: MDT111 and INT105.** (Offered Fall)

- INT210 *Manufacturing and Machine Tools Technology (formerly Manufacturing and Machine Tools Operation)* – 3 hrs. A laboratory based course covering precision measurement, screw threads, cutting tool materials, cutting fluids, machinability of metals, the selection and production of metals, basic metallurgical theory, and heat treatment. **Prerequisites: None.** (Offered Fall).
- INT213 *Offset-Image Transfer* – 3 hrs. Fundamentals of offset presswork; preparation of the press, one color presswork; methods of offset presswork; including press preparation, stripping and platemaking, make-ready, press running; mechanism and upkeep; running difficult papers and forms; and multi-color work. **Prerequisites: INT102, INT106, and INT110.** (Offered Fall)
- ITE 217 *Graphic Design and Planning* – 3 hrs. Computer based course in designing and composing such types of printing requirements as calling cards, invitations, announcements, broadsides, poster, tickets, booklets, catalogs, type and color harmony, color mixing, paper. **Prerequisites: INT213.** (Offered Spring)
- INT221 *Materials and Processes I (formerly IT107 Industrial Materials and Processes)* – 3 hrs. The first part of a 2-part course in which comprehensive instruction is provided on various methods of processing metals, plastics, ceramics, and composite materials. Provides the foundations for advanced instruction in manufacturing, industrial materials, automation, process planning, and quality controls. **Prerequisites: None.** (Offered Fall)
- INT222 *Materials and Processes II (formerly IT108 Industrial Materials and Processes I)* – 3 hrs. Continuation of INT221 Materials and Processes. (Offered Spring)
- INT300 *Time and Motion Studies* – 3 hrs. Introduction to methods engineering in business and industry including improving methods of performing and measuring work completed by individual or groups of employees through motion analysis, charting techniques, and principles of motion economy. Use of the computer is required. **Prerequisites: Junior Standing.** (Offered Fall and Summer on request)
- INT301 *Printing Estimating* – 3 hrs. A study of the responsibility of the estimator in the printing plant and the importance of estimating; estimating various kinds of composition, presswork, paper, and other cost elements which enter into the production of typical jobs. **Prerequisites: Junior Standing** (Offered Fall)
- INT303 *Transportation Technology: Power and Energy Systems (formerly Transportation Systems)* – 3 hrs. An investigation of transportation systems beyond the capability of man. Emphasis placed on air, land, water, and space travel; and power/energy systems employed in transportation technology. **Prerequisite: Junior Standing.** (Offered Fall)
- INT304 *Manufacturing Organizations and Management (formerly Production Systems)* – 3 hrs. A study of the organization and management of resources and systems in today's manufacturing industry. **Prerequisite: Junior Standing** (Offered Spring and Summer on request)
- INT306 *Communication Technologies (formerly Communication Systems)* – 3 hrs. A laboratory based course designed to provide the technology education teacher with a working knowledge of various modes of communication. **Prerequisite: Admission to Teacher Education Program.** (Offered Fall)
- INT307 *Printing Management* – 3 hrs. A course in planning, organizing, and maintaining the printing plant from organization and operations of various departments, layout of the shop, equipment selection and acquisition, materials, and location. **Prerequisite: INT301.** (Offered Spring)
- INT308 *Printing Ink and Substrates* – 3 hrs.

- INT310 *Manufacturing Cost Analysis* – 3 hrs. Introduction to principles of accounting, and the concepts and techniques of cost accounting. Emphasis placed on the application of cost information to the production of manufacturing goods. Use of computer required. **Prerequisite: Junior Standing** (Offered Spring)
- INT311 *Properties of Materials* – 3 hrs. Study of the mechanical and physical properties of ferrous and nonferrous metals and nonmetallic materials. Prediction of failure mechanisms, including corrosion, fatigue, and fracture. Students will gain experience in use of laboratory testing machines. **Prerequisites: INT221 and INT222.** (Offered Fall)
- INT314 *Construction Technologies (formerly IT208 Construction Systems)* – 3 hrs. A study of the construction industry with regard to concepts of construction technology through experiences in planning, organizing, and controlling of all available resources to produce constructed products on and off-site. Student is expected to build a construction project in the laboratory. **Prerequisite: Junior Standing.** (Offered Spring)
- INT316 *Introduction to Computer Numerical Controls* – 3 hrs. Computer programming and manual programming for both NC mills and lathes. The transfer of part descriptions into a detailed process plan, tool selection and finally into NC machine code. Verification accomplished through computer graphics and laboratory work. **Prerequisites: INT206, INT210, INT221, and INT222.** (Offered Fall)
- INT317 *Industrial Robotics* – 3 hrs. A study of the principles, techniques, and applications of robotics and automated systems. **Prerequisite: INT316.** (Offered Spring)
- INT327 *Applied Statistics in Industry* – 3 hrs. Course introduces students to the applications of statistics in industry with emphasis of designing experiments, descriptive statistics, correlation and regression, probability and sampling, and tests of significance. Use of the computer is required. **Prerequisite: Junior Standing.** (Offered Fall)
- INT333 *Plant Layout and Materials Handling* – 3 hrs. Survey and application of principles and methods used for solving plant layout and materials handling problems in industry. **Prerequisite: Junior Standing** (Offered Fall)
- INT334 *Production and Inventory Controls* – 3 hrs. Principles and techniques of minimizing cost of ordering, receiving, storing, issuing, scheduling, routing, dispatching, expediting, and controlling materials, parts, subassemblies, and final assemblies of a manufacturing system. **Prerequisite: Junior Standing** (Offered Spring)
- INT341 *Fire Protection and Protection for Industry* – 3 hrs. An analysis of equipment, principles, standards, and systems essential to an effective fire protection and prevention program in industrial factories and plants. **Prerequisite: Junior Standing** (Offered Fall)
- INT342 *Industrial Safety: Management & Technology* – 3 hrs. Principles and procedures for investigating industrial accidents; root cause analysis; preparation and maintenance of occupational safety and health reports; concept of hazardous avoidance, information systems, and controls; non-compliance and abatement. **Prerequisite: INT200.** (Offered Spring)
- INT400 *Quality Assurance and Materials Testing* – 3 hrs. Destructive and nondestructive testing procedures and equipment for determining mechanical, physical, and other properties of ceramics, metals, woods, composite materials, and polymers. **Prerequisites: INT221, INT222, and INT311** (Offered Fall Semester)
- INT401 *Maintenance Management* – 3 hrs. The organization and management of a factory or plant maintenance system involving the administration of maintenance personnel, planning and scheduling of work, maintenance of basic environment systems, project control and cost control for maintenance operation. **Prerequisite: Permission of Instructor.** (Offered as needed)



- INT403 *Statistical Quality Control Concepts* – 3 hrs.
- INT404 *Improved Manufacturing Systems* – 3 hrs. An analysis of contemporary systems and theories for productivity improvements and quality management in industry. **Prerequisite: Senior Standing** (Offered Fall)
- INT405 *Industrial Supervision* – 3 hrs. An analysis of supervisors' job with respect to their roles and responsibilities for supervising the work of subordinates and employing technology systems in the production of consumer goods and services.
- INT406 *Industrial Psychology (formerly TGC406 Industrial Psychology)* – 3 hrs. A survey of scope of research activities in industry with emphasis on performance criteria and prediction, job analysis, wage and job evaluation, organizational theories and structures, industrial leadership, management development, morale and industrial relations, consumer research, and advertising and selling. **Prerequisites: Senior Standing** (Offered Fall and Summer)
- INT408 *Manufacturing and Ergonomics* – 3 hrs. Survey of human factor engineering theory, research and applications with particular reference to quality assurance and safety. Systems framework with specific emphasis on relationships among systems components. Emphasis on operator constraints in the design of work processes, work stations, and instrumentation. **Prerequisites: Senior Standing** (Offered Fall and Summer)
- INT410 *Industrial Management* – 3 hrs. Principles and practices in managing a business or industrial enterprise; organization and management structure; procurement; quality and quantity control; research and development; management science; personnel management; labor-employee relations; and marketing. **Prerequisites: Permission of the instructor.** (Offered as needed)
- INT417/418 *Electronic Publishing I, II* – 3 hrs. Fundamental of computerized typesetting embracing systems commands for setting simple exercises, straight matter, tabular matter, ruling, run-arounds, and the more intricate types of composition. The mechanisms of the system is thoroughly analyzed. **Prerequisites: Senior Standing.** (Offered Fall and Spring)
- INT420 *Industrial Hygiene* – 3 hrs. Course covers federal, state, and professional standards applicable to health and environmental controls, and personal protection equipment in factories and plants. **Prerequisites: Senior Standing.** (Offered Spring)
- INT421 *Bio-Related Technologies: Innovations, Issues, and Perspectives* – 3 hrs. Developments in bio-related technologies and their effects on the economy, environment, individual, and society. An analysis of innovations, issues, and perspectives in bio-related technologies and other related technologies (communication, construction, manufacturing, and transportation). **Prerequisites: Senior Standing.** (Offered Spring)
- INT422 *Industrial Hazardous Materials Management* – 3 hrs. Specific OSH, NRC, ANSI and other standards as applied to the usage, storage, transportation, and disposition of industrial hazardous materials. **Prerequisites: Senior Standing** (Offered Fall)
- INT425/426 *Industrial Safety Standards I, II* – 3 hrs each. Specific federal and state OSH standards as applied to buildings and facilities, materials handling and storage, machine and machine guarding, welding, electrical hazards, construction, and transportation in factories and plants. **Prerequisites: Senior Standing.** (Offered Fall and Spring)
- INT430 *Design and Manufacturing Problems* – 3 hrs. A study of mechanical design procedures and problems of recent manufacturing developments, including critical path scheduling and machine relations, are covered. Use of the computer is required. **Prerequisite: Senior Standing.** (Offered Spring)

SCHOOL OF ENGINEERING AND TECHNOLOGY

- INT455 *Quality Controls in the Printing Industry* – 3 hrs. An analysis of industrial standards and methods of quality controls in the printing industry. **Prerequisites: Senior Standing.** (Offered Fall)
- INT456 *Senior Project/Seminar* – 3 hrs. Selection by the student of a significant problem in his/her area of concentration for group or independent investigation, write-up and reporting. Students are required to attend weekly seminar sessions. **Prerequisites: Approval of instructor required.** (Offered Fall and Spring)
- INT484 *Introduction to Computer Integrated Manufacturing* – 3 hrs. A laboratory based course designed to integrate the total manufacturing system. Topics include flow line production, materials handling, group technology, and flexible and computer integrated manufacturing. **Prerequisites: Senior Standing.** (Offered Spring)
- INT490/491 *Internship I, II* – 1-3 hrs. Practical experiences in the work environment in which the student is required to observe, shadow, interview, and participate in actual tasks performed in the occupation. Prior approval from the Internship Coordinator is required one semester in advance of the semester of enrollment. **Prerequisites: Senior standing.** (Offered Fall, Spring and Summer)
- TTE118 *Technical Mathematics* – 3 hrs.
- TTE 299 *Technical Specialty Transfer Credits* – 3-18 hrs. Credits awarded for completed course work in a post-secondary community/technical college, military schools, or business and industry.
- TTE302 *Curriculum Development and Evaluation in Career/Technical Education (formerly Course Development and Evaluation in Career/Technical Education)* – 3 hrs. An analysis of methods and procedures used in analyzing occupations for teaching content; organization and sequence of instruction; development of objectives and learning outcomes. **Prerequisite: Level 1 Career/Technical Certificate.** (Offered Fall and Summer)
- TTE303 *Teaching Subjects in Technology: Career Discoveries Course* – 3 hrs. Course is designed to the provide teacher candidate with knowledge and understanding to teach technology subjects in a technology education program at the secondary level (Grades 6-10). The candidate teacher is required to develop lesson plans to be used in teaching and evaluating students performance in career discoveries course in grades 6-8. **Prerequisite: Admission to the Teacher Education Program.** (Offered Fall)
- TTE304 *Teaching Subjects in Technology: Career Explorations Course* – 3 hrs. Course is designed to the provide teacher candidate with knowledge and understanding to teach technology subjects in a technology education program at the secondary level (Grades 6-10). The candidate teacher is required to develop lesson plans to be used in teaching and evaluating students performance in career explorations course in grades 9-10. **Prerequisite: Admission to the Teacher Education Program.** (Offered Fall)
- TTE305 *Learning Resources and Technology in Career/Technical Education* – 3 hrs. A study of principles and methods essential to the development and use of technology in career or technical education program. **Prerequisite: Level 1 Career/Technical Certificate** (Offered Fall and Summer)
- TTE399 *Supervised Occupational Development* – 3-12 hrs. An assessment of the student's occupational knowledge and skills through individualized activities. Additional formal course work may be required. **Prerequisite: Completion of the required minimum 1-year work experience.**
- TTE401 *Planning and Organizing Technology Education Programs* – 3 hrs. Course covers curriculum, program of study, history and foundations of technology education, technology student association, program planning and evaluation, and community relations as applied to the secondary technology education program. **Prerequisite: Permission of Instructor.** (Offered Fall and Summer as needed)

- TTE 403 *Career Information and Guidance* – 3 hrs. Course covers research and development in theories of vocational development and occupational choice; and models of career education programs.
- TTE 404 *Classroom/Laboratory Management and Student Leadership Development* – 3 hrs. Physical aspects of buildings, laboratories, and shops. Purchase and inventory of supplies, materials, and equipment; selection, acquisition and installation of equipment; equipment agreements and maintenance; development of desirable shop layout; The basic philosophy of exploratory and specialized occupational training; Industrial safety, public relations, use of instructional aids and development of programs for special groups.
- TTE 405 *Functions of the Coordinator* – 3 hrs. A study of the role and responsibilities of the High School Program Coordinator; areas essential to planning, organizing, and maintaining cooperative vocational education programs; and designing the related subject curriculum.
- TTE 406 *Methods of Teaching Career/Technical Education* – 3 hrs. An analysis of appropriate materials and methods used in teaching trade and technical subjects in a career/technical education program. Designing instruction for students with special needs.
- TTE 407 *Career/Technical Student Organizations* – 3 hrs. Course covers the role and responsibilities of the teacher in advising the career/technical education student organization.
- TTE435 *Safety Principles and Practices in Career/Technical Education* – 3 hrs. The roles and responsibilities of the technical education teacher in maintaining classrooms, laboratories, and shops free of recognized safety and health hazards; instructor liability; and federal and state laws governing safety in a school environment. **Prerequisite: Level 2 Career/Technical Certificate.** (Offered Spring and Summer upon demand)
- TTE440 *Vocational Education for Special Needs Students* – 3 hrs. Materials and methods suited to the teaching of students with special needs in a career/technical education program at the secondary and post secondary levels. **Prerequisite: Level 1 Career/Technical Certificate.** (Offered Spring and Summer).
- TTE450 *Practicum* – 3 hrs. (may be repeated one time). Practical experience in a instructional position at the secondary or post-secondary level. Approval of the teaching field specialist required. (Offered Fall and Spring).
- TTE474 *Foundations and Principles of Career/Technical Education (formerly TTE301 Principles of Career/Technical Education)* – 3 hrs. An investigation of the origin of and development of career and technical education through significant periods; applicable federal and state public laws impacting career and technical education; and foundations of career and technical education. **Prerequisite: Level 2 Career/Technical Endorsement Certificate.** (Offered Fall and Summer)
- TTE475 *Evaluating Student Achievement in Career/Technical Education.* – 3 hrs. Methods and procedures for developing and administering achievement and performance tests in a career/technical education program at the secondary or post-secondary level. **Prerequisite: Level 2 Career/Technical Certificate.** (Offered Spring and Summer)
- TTE495 *Directed Teaching* – 12 hrs. Twelve-week period of full-time student teaching in either technical education or technology education under the supervision of a master teacher. Students meet weekly on campus in a seminar arrangement to discuss problems and successes encountered during the student teaching experience. Students are required to prepare a folio outlining their activities and experiences in the schools. **Prerequisite: Approval of Director of Field Experience.** (Offered Fall and Spring)

**DEPARTMENT OF COMPUTER SCIENCE**

302 Engineering and Technology Building  
(256) 372-5570

**INTRODUCTION**

Computer Science continues to be a rapidly growing field with a wide variety of occupational opportunities. The program area offers one degree and courses that lead to a minor for students in other disciplines. Virtually all courses require practice in programming to prepare students for the job market or graduate school.

**MISSION**

The Computer Science Program provides a course of study designed to give students a thorough grounding in both the theoretical and practical aspects of Computer Science. The curriculum provides students with an in depth background in both the hardware and software aspects of the industry.

**REQUIREMENTS FOR GRADUATION**

Majors in Computer Science must earn a grade of ‘C’ or better in all Computer Science courses. Students must complete 128 semester hours of course work outlined below. The Computer Science major consists of 16 required courses (48 hours) and an additional 7 courses (21 hours) of Computer Science electives, of which 2 courses (6 hours) must be at the senior level (400 or greater). **The prerequisites must be carefully followed.**

CMP 102	Intro to Programming I	CMP 103	Computer Math
CMP 109	Intro to Programming II	CMP 204	Visual Programming
CMP 208	Logical Foundations	CMP 215	Data Structures
CMP 220	Intro to Switching Theory	CMP 303	Assembly Language
CMP 305	Numerical Analysis	CMP 380	Computer Organization
CMP 384	Operating Systems	CMP 401	Software Engineering
CMP 403	Senior Problems	CMP 410	Seminar
CMP 425	Theory of Algorithms	CMP 488	Intro to Data Base Sys.,

**CURRICULUM FOR A MINOR IN COMPUTER SCIENCE**

Students may complete a minor in Computer Science by earning 18 semester hours, (six courses) of credit. Four courses (12 hours) are required:

<u>Course Number</u>	<u>Course Title</u>	<u>Semester Hours</u>
CMP 102	Intro to Programming I	3
CMP 103	Computer Mathematics	3
CMP 109	Intro to Programming II	3
CMP 215	Data Structures	3

The two remaining courses are electives (6 semester hours) but must be selected from Computer Science courses at the 300 or 400 level. Prerequisites must be met for courses selected.

## Computer Science Major

128 credit hours

### Freshman Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ORI 101 Survival Skills	1	<sup>2</sup> ENG 102 Composition II	3
<sup>1</sup> ENG 101 Composition I	3	MTH 126 Calculus II	4
MTH 125 Calculus I	4	<sup>3</sup> HIS History II	3
<sup>3</sup> HIS History I	3	CMP 103 Computer Mathematics	3
CMP 102 Intro. to Programming I	3	CMP 109 Intro. to Programming II	<u>3</u>
<sup>4</sup> Health Science/Phys. Ed	<u>2</u>		16
	16		

<sup>1</sup>ENG 103 may be taken by international students;

<sup>2</sup>ENG 104 may be taken by international students;

<sup>3</sup>HIS 101 and HIS 102; or HIS 201 and HIS 202; <sup>4</sup>HED 101, NHM 103, or FAS 101

### Sophomore Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
<sup>5</sup> ENG Literature	3	<sup>5</sup> ENG Literature	3
PHY 105 Physics	4	PHY 106 Physics II	4
<sup>6</sup> CHE or BIO	4	ART 101 Art Appreciation	3
CMP 204 Visual Programming	3	CMP 215 Data Structures	3
CMP 208 Logical Found. of Comp.	<u>3</u>	CMP 220 Intro. to Switching Theory	<u>3</u>
	17		16

<sup>5</sup>ENG 201 and ENG 202; or ENG 203 and ENG 204; <sup>6</sup>CHE 101 and CHE 101L or BIO 103 and BIO 103L

### Junior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
ENG 205 General Speech I	3	<sup>7</sup> Social Science	3
MTH 237 Intro. to Linear Algebra	3	ECO 200 Basic Economics	3
CMP 303 Assembly Language	3	CMP 380 Computer Organization	3
CMP 305 Numerical Analysis	3	CMP 384 Operating Systems	3
Elective	<u>3</u>	Elective	3
	15	Elective	<u>3</u>
			18

<sup>7</sup>PHL 201, PSY 201, SOC 201, or GEO 213

### Senior Year

<i>First Semester</i>	<i>Sem. Hrs.</i>	<i>Second Semester</i>	<i>Sem. Hrs.</i>
MTH 453 Probability & Statistics	3	CMP 403 Senior Problem	3
CMP 401 Software Engineering	3	CMP 410 Seminar	3
CMP 425 Theory of Algorithms	3	CMP 488 Intro. to Database Systems	3
Elective	3	Elective	3
Elective	<u>3</u>	Elective	<u>3</u>
	15		15

## COURSE DESCRIPTIONS

- CMP 101 *Fundamentals of Computer and information Systems* – 3 hrs. This course is designed to introduce students to computers and information processing. The beginning student will be exposed to the historical, current, and projected roles of information systems as they affect organizations and society. Students will be introduced to computing systems' components and systems development. Also, they will be introduced to the concepts of formal problems and their solutions using computer applications. **No credit to computer science majors. Prerequisite: None.**
- CMP 102 *Introduction to Programming I* – 3 hrs. This course concentrates on the process of computer problem solving. The idea of an algorithm is covered and flow charting skills are taught as a means of logical problem solving. The core elements of high level language are also taught. The student is expected to solve routine programming problems. **Prerequisite: None.**
- CMP 103 *Computer Mathematics* – 3 hrs. Mathematics concepts common to computer science applications are covered in this course. These topics in discrete math include number bases, sets, relations, functions, graph theory, and trees. Some problems may be illustrated by student prepared programs. **Prerequisites: CMP 102 and MTH 112 or equivalent.**
- CMP 109 *Introduction to Programming II* – 3 hrs. A continuation of the subject matter of CMP 102. More advanced programming concepts are covered here. Topics include control structures, arrays, procedures, files, and recursion. Several programming exercises are assigned. **Prerequisite: CMP 102.**
- CMP 204 *Visual Programming* – 3 hrs. This course introduces fundamental concepts of visual programming languages such as Visual Basic or Visual Java. Emphasis will be placed on solving real world problems. Students will be asked to design and code using these languages in an efficient manner. **Prerequisite: CMP 109.**
- CMP 208 *Logical Foundations of Computing* – 3 hrs. This is a math-oriented course that covers Boolean algebra, digital logic, combinatorial circuits and Karnaugh maps. Programming assignments will be part of the course. **Prerequisite: CMP 103.**
- CMP 215 *Data Structures* – 3 hrs. This course concentrates on the ways data can be organized and accessed. The idea of abstract data types is introduced and real data structures such as lists, linked lists, record, stacks, trees, and graphs are explained in terms of their basic structure and in the ways that they can be used in practical programming problems. Several programming assignments are required. **Prerequisites: CMP 103 and CMP 10.**
- CMP 220 *Introduction to Switching Theory* – 3 hrs. This course contains a review of Boolean algebra and combinatorial circuits, then covers sequential circuits. The hardware implementations of routine digital system components such as counters and shift registers are also taught. **Prerequisite: CMP 208.**
- CMP 303 *Assembly Language* – 3 hrs. The architecture and organization of a selected machine will be discussed in this class. The assembly language of this machine will be taught and students will learn the basics of addressing modes, representation of data control structures, memory organization, and the assembly/relocation process. Programming assignments will allow the student to become proficient in the assembly language. **Prerequisites: CMP 103 and CMP 109**
- CMP 305 *Numerical Analysis* – 3 hrs. This course will investigate the use of several fundamental algorithms to solve mathematical problems common to science and engineering applications. Methods illustrated will include numerical interpolation, integration, and the solution of differential equations. Programming assignments will be made to illustrate the numerical concepts. **Prerequisites: MTH 126 or MTH 146 and CMP 102.**

- CMP 309 *Computer Graphics* – 3 hrs. This course covers the means of visually displaying data. Hardware graphics systems are discussed, as well as the data structures and software techniques used in setting up graphical displays. **Prerequisites: CMP 204, CMP 215 and MTH 237.**
- CMP 311 *Introduction to Simulation* – 3 hrs. The basics of simulating real world situations with the computer form the content of this course. Mathematical modeling is discussed, elements of probability and statistics, Monte Carlo sampling, and uses of simulation languages are also undertaken. Programming assignments are made to illustrate these basic concepts. **Prerequisites: CMP 215 and CMP 305.**
- CMP 320 *Intro to Multimedia Authoring* – 3 hrs. This course focuses on the basic concepts of computer-based multimedia production. Topics included are essentials of interactive multimedia authoring, design planning of a multimedia production, building blocks for multimedia productions (text, graphics, sound and video), introduction to HyperCard and HyperCard objects (buttons, fields, card, background), use of Hypertalk programming language, and introduction to the Authorware authoring tool. Each student is required to complete a semester project. **Prerequisite: CMP 215.**
- CMP 329 *Object Oriented Design* – 3 hrs. This course deals with the concepts involved in the object-oriented approach to data structure and programming. Inheritance and object-oriented applications are dealt with; programming projects will be assigned. **Prerequisite: CMP 215.**
- CMP 330 *Computerization in Society* – 3hrs. This course examines computing as a social process with emphasis on ethical issues and the social impact of computerization on local and global organizations. **Prerequisite: junior standing.**
- CMP 380 *Computer Organization* – 3 hrs. The primary components, hardware and software, of a computer system are addressed in this course. The organization of the CPU, main memory, interrupt structure, and addressing techniques are assemblers, and linker/loaders are also taught. **Prerequisites: CMP 220 and CMP 30.**
- CMP 384 *Operating Systems* – 3 hrs. The use of the operating system and other software systems is the core content of this course. Topics include tasking and processes, scheduling, task coordination, device management, file systems, security, and networking. **Prerequisites: CMP 303 and junior standing.**
- CMP 401 *Software Engineering* – 3 hrs. This course covers the ideas involved in large scale programming design. The software life cycle is covered along with design specifications, verification and validation, and the use of various supporting CASE tools. The student is expected to design and document a software system of some kind and may be asked to code some of the design. **Prerequisites: CMP 215, CMP 384, and senior standing.**
- CMP 403 *Senior Problem* – 3 hrs. During this course, the student is expected to code a single, meaningful project begun earlier in CMP 401 and present the results of this project in class. This project must meet set standards of design and documentation. Topics of professional ethics and responsibilities will also be discussed. **Prerequisites: CMP 401 and senior standing.**
- CMP 410 *Seminar* – 3 hrs. This is a course devoted to a different topic each semester. This allows an in-depth examination of a variety of subjects of current importance in the changing field of computer science. Guest lectures may be used; students may be required to do individual research. **Prerequisite: Senior standing.**
- CMP 425 *Theory of Algorithms* – 3 hrs. Formal properties of algorithms are covered here. The use of big O notation is covered, along with its use in algorithm analysis. Other topics include recursion, finite automata, and NP complete problems. Examples of several routine algorithms such as searching and sorting are done and assigned as programming projects. **Prerequisites: CMP 215 and CMP 305.**

- CMP 440 *Programming Languages* – 3 hrs. In this course, comparisons are made between several modern programming languages. Language syntax, use, and structure are covered. Programming assignments in these languages are made. **Prerequisite: CMP 384.**
- CMP 450 *Artificial Intelligence* – 3 hrs. This is an introduction to the uses and techniques of artificial intelligence. Topics covered include knowledge representation, natural languages, machine learning, vision, and expert systems. Programming projects will be assigned. **Prerequisite: CMP 425.**
- CMP 475 *Microprocessor* – 3 hrs. This is a course including general hardware, software, and systems design techniques in microprocessor-based microcomputers. Examples will be taken from a current microprocessor and projects using this micro will be assigned to the student. **Prerequisites: CMP 380 and senior standing.**
- CMP 483 *Compilers* – 3 hrs. This is a study of formal grammars, syntactic and semantic analysis, and code generation, and other topics necessary in the understanding of how compilers translate high-level languages into machine form. Programming projects will be assigned. **Prerequisites: CMP 215 and CMP 380.**
- CMP 485 *Introduction to Data Communications and Networks* – 3 hrs. This is a course covering data communications concepts and systems, communications networks, communication processors, network protocol, and local area networks. **Prerequisites: Senior standing.**
- CMP 488 *Introduction to Database Systems* – 3 hrs. A study of the basic issues in database design, including database interfaces, data structures used, the relational model, and query languages. A commercially available database package will be used to give students exposure to these concepts. **Prerequisites: CMP 215 and CMP 384.**
- CMP 490 *High Performance Computing* – 3 hrs. This course serves as an introduction to the areas of parallel and structured computers. The course will discuss distributed computers in networks, multiprocessors, and pipelines. Architectural considerations, algorithm design, and performance measures will also be covered. **Prerequisites: CMP 380 and CMP 425.**





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Note: Cooperative Extension participants affiliated with Alabama A&M University are listed in the Faculty section of this bulletin.

Note: A comprehensive roster of Cooperative Extension participants affiliated with Auburn University can be located in the [Auburn University Bulletin](#).

