Alabama Agricultural and Mechanical University

Undergraduate Bulletin

2008 - 2011

4900 Meridian Street
Normal, Alabama 35762

(256) 372-5000

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 A&M University is accredited by the COMMISSION ON COLLEGES: Southern Association of Colleges and Schools. Inquiries regarding the institution's accreditation status may be addressed to:

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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 doors opened on May 1, 1875, as the Huntsville Normal School. Industrial education was added in 1878, generating widespread attention. This 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 in the three-fold function of teaching, research, extension and other public service. Alabama A&M University, a center for 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. Further, the University 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.

In cooperation with businesses, industry, governmental agencies, and other private and community-based institutions, Alabama A&M University provides a laboratory where theory is put into practice, in a productive environment.

ROLE

The role of Alabama A&M University in higher education is consistent with its mission, which 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 the traditional American universities that were based upon the European system oriented toward 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 to build a strong America. As a land-grant institution, the role of the University is embodied in the following functions:

A. TEACHING: The first and foremost responsibility is to provide students with an education that is built upon the liberal arts, including emphasis in the 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 through a comprehensive, extended educational 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 a 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 the Regional In-service Education Center, the Teacher Service Center, partner programs with high schools, Center *for* Aging and Lifelong Learning, Urban and Rural Research Center, the Family Center, the program of formal and informal Continuing Education, the Drug Abuse Prevention Center, and the Center *for* Entrepreneurial and Economic Development. The university faculty and staff and students undertake additional funded projects with specific outreach components.

SCOPE

As a comprehensive university (Carnegie classification: Masters [Large]), Alabama A&M offers programs at the baccalaureate, master's, 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 four (4) areas; four (4) educational specialists programs; and twenty-two (22) master's 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 undergraduate programs, 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 programs to satisfy future needs, will continue to be enhanced and developed at the

University. Particular emphasis will be placed on programs which are 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 at AAMU 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 also 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 inform 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, the 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. An important creative output of the university includes research papers, review articles, books and the publication of poetry, essays, plays, historical accounts and 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 with an end result of 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 academics and academic support programs are divided into six schools and one college. These are: 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 approximately 2002-acre AAMU campus is situated at Normal, Alabama, within the city limits of Huntsville, Alabama. The campus proper comprises 200 acres. 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.

ACCESS TO LEARNING

"Access to Learning" identifies the University's program for providing equal access to all educational programs, and ensuring compliance with applicable laws, including Section 504 of the Rehabilitation Act of 1973, and the applicable titles of the Americans with Disabilities Act (ADA) of 1990. Questions that may arise regarding University compliance with Section 504 of the Rehabilitation Act, eligibility for the program or filing complaints should directed to Sanoyia L. Williams, Coordinator of the Access to Learning Program, 203 Ralph H. Lee Student Center, Alabama A&M University, Normal, AL 35762, telephone number 256-372-4263. The Coordinator of the Access to Learning Program will work with appropriate faculty, staff and administrators under the authority of the Office of the Vice President for Academic Affairs to provide assistance and/or seek resolutions for persons with handicaps or disabilities. A manual describing the program and complaint procedures has been distributed to the Learning Resources Center and all offices on campus, and is available for reviewing upon request.

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:

Academic Deans of the Southern States
Accreditation Board for Engineering and Technology:
Engineering Accreditation Commission(EAC) and Technology Accreditation Commission(TAC)
Alabama Association for Institutional Research
Alabama Council of Graduate Deans
Alabama Educational Association
Alabama Library Association
Alabama Library Exchange
Alabama State Department of Education
American Association of Colleges for Teacher Education
American Association of Collegiate Registrars and Admissions Officers
American Association of Family and Consumer Sciences
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
American Society for Engineering Education
American Speech and Hearing Association
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
Institute of Food Technologists
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
National Education Association
Network of Alabama Academic Libraries
Planning Accreditation Board
Southern Association of Colleges and Schools
Southwestern Athletic Conference
Southern Regional Education Board

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.

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 reverse side of the Admission Medical Record is not part of the admission process; however, it is required in order to occupy residence halls.

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

- **High School Graduates/Freshman Students.** Request that your high school principal or guidance counselor forward an official copy of your high school transcript to the Office of Admissions. 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 a passing GED score. 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.** Request that the registrar of each institution which you have attended forward an official copy of your transcript to the Office of Admissions. 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 transferable credit 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 transferable credit hours will be admitted as a high school graduate; and must request high school transcript and ACT/SAT scores; 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

- **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.

- **Special Students.** Students must show evidence of high school completion. Special students must make application for admission each semester in attendance. Students admitted to the University as special students are permitted to take a maximum of 12 semester hours before meeting requirements for regular status.

  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.

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 Admissions, Alabama A&M University, Box 284, Normal, Alabama 35762.

Admission Requirements

Transfer/Readmit. Alabama A&M University students who have attended another institution(s) after leaving the university must apply to return. Students must request that the registrar of each institution which you have attended forward an official copy of your transcript to the Office of Admissions. An official copy of your transcript(s) must be in the Office of Admissions by the deadline date stated for the application in the section above, except from those school(s) in which applicant is currently enrolled. Transfer/Readmit students are considered for admission only when they have been in good standing with the institution form which they are transferring. This means that the student must have a cumulative grade point average of 2.0, and can not be on probation or suspension. Students must provide official transcripts from all institution(s) attended and list each school on their application for readmission to the university. Colleges or universities 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 credits are not accepted by the university for developmental (remedial) courses, religious courses and orientation.

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

Students transferring from 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 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 for 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.

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 who are admitted to the University on a "Conditional" basis will have one semester to remove the "Conditional" status. If the "Conditional" status is not removed, the student will be notified of his 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 or her total load must not exceed the established 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 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 meeting of the class at the visiting 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. 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.

- Enclose with the application the required $25.00 non-refundable application fee. Only a cashier's check, certified 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 that 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:

Semester/Session	Application Deadline
Fall	June 15
Spring	November 1
Summer	Apr 1

Special Programs

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. AAMU upon the student's graduation from high school and enrollment at AAMU will award credit earned for such course work toward a degree.

- 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. Credit earned for such course work will be awarded toward a degree upon the student's graduation from high school and enrollment at AAMU.

TRANSFER OF CREDITS

Entering Students

From U.S. Colleges and Universities

Students who transfer from another two- or four-year institution must submit, in advance of 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 from other 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 or she is able to pursue successfully the curriculum in which he or 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.

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. Advanced Placement 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 of 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: 19 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 it 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 course work based on semester hours, credit hours awarded for course work 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 systems 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 or 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 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 regular registration periods held in April for the fall semester, in November for the 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 with 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 the 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 with 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 or 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 student 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 $130.00 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 enroll 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 or 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

Dropping/Adding Courses

Once a student has completed registration, all changes in his or 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's 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.

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.

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

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" below:

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 and/or 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 or her enrollment at any time other than at the end of a semester or summer term, he or she must complete a withdrawal form obtained from the Registrar's Office. The student must clear all AAMU accounts as listed on the form. 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 or she will forfeit all rights to a statement of honorable dismissal, thereby jeopardizing re-entry into AAMU or transfer to another accredited institution.

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.

Emergency Separation for Military Purposes

Students who exit the University because of the 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 chairperson 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. 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.

Classifications of Students

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

Classification	Cumulative Hours Earned
Freshmen	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, approval by the dean of the school and 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.

The maximum load for the summer session shall be 10 semester hours. With permission, through channels to the Provost and Vice President for Academic Affairs, two additional semester hours may be allowed providing the student will be eligible for graduation the same semester by virtue of the additional hours. 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.

3. 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 competence, skills and strategies that students 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 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 indicated below:

   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, 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 by members of student organizations sponsored by academic units, trips for University classes, trips for participation at/in intercollegiate athletic events.

8. Authorized excuses, dispatched from the appropriate offices, teachers, coaches or sponsors over signature of the Department Chairperson and Dean or Director, 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		Hours Attempted		Quality Points Earned	Grade Point Average
A	4	x	4	=	16	
B	3	x	3	=	9	
C	2	x	3	=	6	
D	1	x	2	=	2	
F	0	x	3	=	0	
W	0	x	0	=	0	
TOTAL			15	=	33	2.2

Grade Point Average(GPA) = Quality points earned ÷ Hours attempted = 33/15 = 2.2

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 or 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 results in 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.

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 his or her 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 or she receives a grade of "F" by his or 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; thus, a student may not be granted a grade-by-grade 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.

Academic Bankruptcy forms are available in the Office of Academic Affairs, Office of the Registrar, and Academic Units. Students should consult with the academic advisor and obtain advisor's signature. Completed forms should be returned to the Office of Academic Affairs for review by the Academic Appeals Committee.

Procedures:

1. Obtain Application for Academic Bankruptcy Form from the Office of the Provost and Vice President for Academic Affairs, Office of the registrar or from academic units.

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 the 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 or 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 or 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 or 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 or she approves additional directory information given without specific approval.

To ensure prompt delivery of all AAMU correspondence, students should complete change of address and change of name in the Office of the Registrar immediately after such changes in status occur.

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/Selection 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 or her cumulative grade point average is 2.00 or above.

Classification	Cumulative Grade Point Average
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 to earn the minimum GPA for his or 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 or 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 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 or 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 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 or 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 five faculty members, one from each undergraduate school--and a representative from the University College, a representative from the Student Government Association, and a representative from 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:

   July 1 **Fall Semester**
   January 1 **Spring Semester**
   June 1 **Summer Session(s)**

2. Appeal letters should include the following:

   - Term for re-admittance (Fall, Spring, Summer)
   - Student I.D. Number
   - Return address to receive response to your request
   - Typed ONLY (No hand written requests)
   - 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 handled as a final 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, (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 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 had no disciplinary restrictions for the semester, is eligible for the Dean's List. It is compiled at the end of each semester.

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 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.

Award	Cumulative GPA	Minimum Credit Hours at AAMU
Cum Laude	3.0 – 3.49	30
Magna cum laude	3.5 – 3.79	30
Summa cum laude	3.8 or above	95

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 required 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 or her major and minor areas of specialization.

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

Undergraduate degrees' 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.

CATALOG 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. If the initial period of enrollment, however, is interrupted for two or more years, the student must follow the AAMU Bulletin in use at the time of re-retry. Students may move forward to a more recent AAMU Bulletin with the permission of their advisors. Students must repeat 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.

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

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.

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 advisor-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.

Mathematics

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

Natural/Physical Sciences

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

AREA IV:

History, Social, and Behavioral Sciences. Requirements include **twelve (12)** semester hours with at least **3 hours** in history, **3 hours** in economics, and at least **6** semester hours from among 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.

Social Sciences:

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
UPL 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 a sequence) and a six-semester-hour sequence in literature.

AREA V:

Other Requirements. (Requirement of one (l) 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.

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

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

PED 101	Fitness for Life	PED 131	Beginning Swimming/Aquatic Education
PED 107	Gymnastics	PED 133	Intermediate Swimming
PED 109	Tennis	PED 140	Golf for Business and Life

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
MIS 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/Military Science. Upon completion of general studies courses in the health sciences/physical education/military science, the student should achieve the following competencies:

1. Understand contemporary wellness issues and the relationship between nutrition and health promotion in the United States.
2. Identify and be aware of health fraud 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 participation in leisure time, physical activities.

Computer Literacy.

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 section of the *AAMU Bulletin* that applies.

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 courses (300-400).
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 1st for May graduates; July 1st for July graduates; and November 1st for December graduates.
8. The student's past academic program shall be evaluated, his or 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 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. 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. 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:

Graduation Date	Filing Date
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 degree 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

Multiple Majors

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.

Second Baccalaureate

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 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 or 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*.
- 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 in advance from the school offering the program and the Office of Academic Affairs.
- Earn at least one-half the courses in his or her major sequence at AAMU, and present for graduation no more than 25 semester hours of work completed through distance learning courses. All distance learning 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 or her graduating class unless excused in writing by the Provost and Vice President for Academic Affairs.

SUMMER SCHOOL

AAMU offers one academic term each summer. The final course offerings for the summer are determined by the need for specific courses expressed during the registration period in the spring semester.

UNIVERSITY COLLEGE

Dr. Lloyd Walker, Interim Dean
117 Buchanan Hall
(256) 372-5750
lloyd.walker@aamu.edu

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 skins and competencies, collegiate adjustments, career goals, and education plans-commensurate with students' abilities and interest are actualized.

Academic support services provided by the University College include the Academic Advising Center, the Academic Assistance Program, New Student Orientation Program (SOAR, BULLDOG WEEK, and OPERATION TRANSITION), TRIO/Special Programs, Testing Services, the Computer Instruction Assistance Laboratory, and the North Alabama Center for Educational Excellence (NACEE) Satellite Program·

New Student Orientation Program

SOAR (Student Orientation and Registration)

The SOAR program allows students accepted for an entering class to come to campus for a brief orientation sessions prior to the start of their matriculation at AAMU. However, the main objective of SOAR is completion of placement testing and course registration. There are also opportunities provided for students and parents to meet with key university administrators and interact with staff from key offices, such as the Office of Financial Aid and the Housing Office.

BULLDOG WEEK

In conjunction with the Student Government Association and the Office of Student Activities, BULLDOG WEEK is a continuation of the orientation process which began at SOAR. Educational sessions such as Credit Management, HIV Prevention, AAMU History, and others are presented to aid students in their transition from high school to college. The culmination of the week's activities is the revered *Torch-lighting Ceremony*, at which time the students are officially welcomed into the AAMU family.

ORI 101

Survival Skills for University Life - I hour A course assisting 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, 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. Students who are 27 years of age or older, may opt to enroll in ORI 101 as an independent study course. The payment of the enrollment fee, however, is required. Upper-classmen who failed to complete the ORI 101 requirement prior to exiting University College will also be required to pay the requisite fee to be allowed to enroll in either the independent study or the general course. 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 (sophomore status or higher), of college credit to the university 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 and acquiring an AAMU Bulletin and other student reference documents/publications; and so forth.

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 have taken and passed: 6 semester ho.urs of written English Composition with a grade of C or higher IS required in each course); 4 hours of science including a 3 semester hour course and a 1 hour lab); 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.

University College Exit Criteria

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

1. Complete the 22 semester credit hours specified for the freshman regular (non-transitional/developmental) curriculum.

2. Declare a major by completing an official "Declaration of Major Form.

3. Meet all requirements for admission to the school, department, or program of the intended major.

Freshmen Assessments

COMPASS: This is a placement assessment that provides administrators with accurate measure of a student's mathematics, reading and English abilities. First-time freshmen must complete the first administration of COMPASS in order to receive a class schedule.

The Cooperative Institutional Research Program (CIRP). This is a survey administered to all first-time students. CIRP allows AAMU administrators to assess first-time students as an institutional group by providing a profile of entering freshmen. class. CIRP records a student's demographic characteristics, expectations ~f the college experience, secondary school experiences, degree goals, and intended career choice, college financing, attitudes, values, and life goals, reasons for attending college, self-efficacy and motivation.

Your First College Year Survey (YFCYS). This survey assesses the academic and personal development of students over the first year of college. Its purpose is to identify features of the first-year that encourage student learning, involvement, satisfaction, and success thereby enhance first-year programs and retention strategies. The survey covers academic skills and achievement, classroom, residential and employment experiences, interactions with peers and faculty, satisfaction with curricular and extracurricular experiences, self-confidence and feeling of personal success. The YFCYS is administered at the completion of the freshman year.

Transitional Education Program

The Transitional 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: Reading - 3 hours. 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. Students who score below the requisite score on the COMPASS are required to enroll. This is a two consecutive semester course.

EDU 150: College Reading - 3 hours. A course providing both individualized and group reading instruction to improve advanced reading, thinking, listening and study skills which are essential to success at the college level. Students who score below the requisite score on the Reading component of the COMPASS are required to enroll in this level of the course. This is a one semester course.

ENG 100: Developmental English - 3 hours. A course in which functional aid in preparing freshmen to enter Composition I is presented. It stresses fundamentals of the English language with practical use in writing. Students who pass this course may proceed to Communication Skills 1. Placement is determined by the student's score on the English/Writing component of the COMPASS assessment. Those who do not complete the course must re-enroll in it during the next semester in which they are enrolled at AAMU.

ENG 100L: Developmental English Laboratory – No credit hours. This lab provides tutorial assistance and individualized study of the grammatical, mechanical, and writing skills covered in ENG 100. ENG 100L is a Co-requisite for the Developmental English class, ENG 100.

MTH 100: Developmental Mathematics - 3 hours. A course covering 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.

MTH 101: Elementary Algebra – 3 hours. 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. Pre-requisite: MTH 100 or a satisfactory score on the Mathematics component of the COMPASS.

MTH 105: Intermediate Algebra – 3 hours. This course covers exponents, roots and radicals, polynomial and non-linear systems of equations. NOTE: MTH 105 is an intensive intermediate algebra course designed for students in science, technology, engineering and mathematics (STEM) degree programs where MTH 125, Calculus I, is the initial course in their curriculum. This course is designed to prepare students for MTH 115.

MTH 115: Pre-Calculus Algebra and Trigonometry – 4 hours. This course covers functions, logarithms and exponential, trigonometric functions and inverse trigonometric functions, trigonometric identities and equations, vectors, complex numbers, polar coordinates, systems of linear and quadratic equations/inequalities and the binomial theorems. MTH 115 is an intensive pre-calculus preparatory course designed for students in science, technology, engineering, and mathematics (STEM) degree programs where MTH 125, Calculus I, is the initial course of their degree program

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. Assistance is also provided to undecided majors who are in the process of determining their educational plans.

The specific objectives of the academic advising center are as follows:

1. To assist students in developing educational programs which 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 Alabama A&M University.

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 towards achievement of educational goals.

5. To assist students in the completion of requirements for entry into the degree-granting programs of their choice.

All students are assigned an advisor in the academic advising center until they exit University College.

The Office of Retention and Academic Support

Suite 100 Buchanan Hall
(256) 372-5490

The Office of Retention and Academic Support (ORAS) is an initiative 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 accomplishes this mission by committing to shared values and by offering the highest level of service to the students it serves. Strategies for accomplishing the mission of ORAS include: academic coaching through Intrusive Academic and Probation Services (IAPS); individual and group peer tutoring via the Tutorial Assistance Network (TAN); continuous academic strengthening through the Learning Strategies Workshops; and supplemental academic instruction via the Computerized Learning Assistance Center (CLAC).

ORAS Values:

The Office of Retention and Academic Support believes the primary key to creating an excellent organization is by focusing on the values that guide its staff's actions. Services are offered to students, faculty, staff and the community based on core values that include integrity, accountability, scholarship, independent learning, resourcefulness, challenge and commitment.

- ORAS is an office where students, faculty, staff and community are treated with respect and dignity and made to feel appreciated and welcome as a part of the university community.
- ORAS requires its staff to demonstrate integrity and honesty in all of its programs and services.
- ORAS takes responsibility for decisions and actions and encourages the students to embrace personal responsibility in all facets of their lives.
- ORAS is committed to a team work environment where every staff member is valued, treated with respect, encouraged to contribute and recognized and rewarded for his or her efforts.
- ORAS pushes its staff and students to aspire to the highest level of excellence in all aspects of their lives.
- ORAS works tirelessly to keep its commitments to the students and the university community.

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.

Computerized Learning Assistance Center (CLAC)

The computerized learning assistance center (CLAC) is located in 103 Buchanan Hall. Students have the opportunity to utilize the lab to access computer software and websites that accompany class text material and use supplemental aids such as archived exams and notes from courses as well as video and audio material.

Tutorial Assistance Network (TAN)

ORAS coordinates and maintains a campus wide peer tutorial program. Tutors are available in most academic courses and offer tutoring at no cost to the student. Individual and small group tutoring is provided for those students who are interested in regular, weekly tutoring assistance and walk-in tutoring is available in some courses for students who require periodic tutoring. Students may be assigned tutors by visiting the TAN office located in 100-C Buchanan Hall and completing a tutorial request application. For more information, call (256) 372-5487.

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 alternately on Tuesdays and Thursdays from 12:30 p.m. to 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 academic assistance in order to successfully complete their course requirements. ORAS contacts each student referred by faculty to extend intrusive assistance through IAPS and TAN services.

Changing Lanes First Year Mentoring Program

Changing Lanes First Year Mentoring Program helps entering freshmen stay on the road! Coordinated by the Office of Retention and Academic Support, Changing Lanes provides incoming students with the opportunity to interact outside of the classroom with Alabama A&M University's top faculty and professional staff. The purpose of the program is to help incoming students adjust to the campus culture so they can grow to be successful academically, professionally and in life. Mentoring relationships are established based on the student's chosen major or interests. Once matched, mentors and protégés will have many opportunities to interact throughout the year. Proteges will not only receive one-on-one mentoring, but they will interact with other mentors and protégés socially, dialogue on topics that will enhance their personal growth in forums, and receive a semester newsletter that will highlight mentor and protégé achievements

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 registration procedures can be obtained from the Testing Services Center.

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 assistance for post-secondary school and graduate/professional school, 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.

HONORS CENTER PROGRAM

Honors House
(256) 372-5859

The AAMU 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 learning 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 which is both challenging and rewarding, one which prepares participants to enter and to successfully complete graduate and professional programs of study.

3. To encourage and stimulate learning outside 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 maximum 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.

Honors Center 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.

4. 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 required 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.

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 in order to remain eligible for participation in the program:

- Enroll in a minimum of twelve (12) hours of course work 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 at least 50% of all honors program 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); 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 semester hours of honors course work each semester as a freshman and sophomore, if available.

- Enroll in IDS 301 Honors Seminar as a junior and must enroll in IDS 401 Senior Honor Project as a senior.

- Enroll in CDS

- 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. A course placing 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	105H	Honors Physics
CHE	101H	Honors Chemistry
SOC	201H	Honors Introduction to Sociology
PHL	101H	Honors Philosophy

Withdrawal

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

Reinstatement

Students dropped or who withdraw from the Honors Program may apply to be reinstated upon attaining the required minimum grade point average based on their classification, and receiving a positive recommendation from the Honors Program advisory council.

OFFICE OF CONTINUING EDUCATION AND NON-TRADITIONAL STUDIES (OCEANS)

300 Bibb Graves Hall
256-372-5753

Mission

The Office of Continuing Education and Non-Traditional Studies (OCEANS) at Alabama A&M University reflects the uniqueness of the traditional land-grant institution which integrates professional, vocational, and liberal arts pursuits with teaching, research and outreach programs. OCEANS, in concert with academic schools, provide lifelong learning opportunities for the individual and the community. OCEANS is dedicated to the delivery of quality credit and non-credit programs that are designed to enrich lives and position individuals at the forefront of technological and educational advances. OCEANS serves as an advocate to systematically enhance access to the University's programs, courses, and services. In this capacity, OCEANS functions as the University's vehicle to originate, develop, and nurture innovative programs and projects for the campus and larger community.

Vision

It is the vision of OCEANS to function as the University's clearinghouse for non-traditional academic credit and a portal through which professional/personal enhancement services can be accessed from anywhere, anytime and in a format consistent with the needs of the non-traditional student.

Goals

The goals of OCEANS are consistent with goals and objectives of the University. Accordingly, all programs and courses are designed to provide lifelong educational opportunities for individual with diverse educational needs and backgrounds. Specifically, OCEANS is committed to:

1. Provide comprehensive outreach programs designed to attract students who require additional studies to meet the changing knowledge requirements in the professional work environments.

2. Design, develop, and deliver courses and programs that address the holistic needs of the non-traditional student to include education, work, and family.

3. Provide an atmosphere of scholarly excellence that utilizes life-long learning experiences to complement students' educational and personal needs.

OCEANS activities are clustered around two basic program functions: academic credit and non-academic credit. OCEANS, in partnership with academic schools, endeavors to offer a broad array of courses in a delivery format (evening, weekend and digitally) that meets the needs of working adults who are challenged to access classes in the traditional Monday-Friday, 8-5 framework.

Academic Credit

OCEANS serves as a clearinghouse for non-traditional credit awarded in several degree completion programs. The non-traditional credit awards may vary by discipline, but generally encompass:

- Credit to adults who posses a diploma, degree, or certificate in the intended field of study, from a regionally accredited technical or career college.
- Credit to adults who posses 6 years of work-related learning embracing the intended field of study.
- Credit for courses completed through CLEP, DANTES, PEP, military programs and ACE.

Programs that currently utilize the non-traditional credit award process include:

Industrial Technology

- Applied Technology
- Technical Teacher Education

Non-Academic Credit

OCEANS's non-academic credit programs are designed to meet the needs of the Huntsville/Madison County citizens, businessmen, and governmental agencies. Non-academic programs include short courses, workshops/seminars, and conferences/symposiums in a wide variety of subjects offered as a service to the community, without academic credit. University faculty and non-faculty administer these program offerings. OCEANS offers the following non-credit courses: Certified Business Professional, Computer Technology, Microsoft Office XP, CompTIA A +, Network +, Security +, MCSE and GRE Review Course.

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 student may register as an Alabama resident for tuition purposes only upon showing that he or she has been a resident of Alabama for a period of at least twelve (12) months prior to initial registration.
   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 or she may register as an Alabama resident for tuition purposes only upon showing that his or 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 or her spouse and 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 or 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 typically be classified as non-resident students. However, 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 or 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 another 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 may be imposed by AAMU.

Changes in Residency 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 or 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 or she considers to be his or 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 or her petition for Alabama residency may request a review of that decision before 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 and Fees

UNDERGRADUATE

Students registering for ten (10) or more credit hours are assessed mandatory fees of $265.00 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 $270.00 per semester. Students are entitled to entry to athletic events and student activities. Students registering for six (6) hours or less are assessed mandatory fees of $180.00 per semester. All students are assessed a $5.00 **graduate registration fee.**

OTHER FEES AND DEPOSITS
(Required of students only when applicable)[1]

Add/Drop Fee Per Form	$ 25.00
*Application Fee (Undergraduate State/Non-State Residents)	25.00
*Application Fee (Undergraduate International Students)	25.00
Audit Fee (per hour)	130.00
Campus Parking Permit (Students per year)	60.00
Campus Parking Permit (Students Summer)`	5.00
Campus Parking Permit (Students/Shuttle Only)	35.00
Cooperative Education (Undergraduate State Residents)	390.00
Cooperative Education (Undergraduate Non-Residents)	780.00
English Competency Examination	15.00
*Extended Payment Exam (Per Transaction)	25.00
Graduation Fee (Undergraduate)	35.00
Graduation Fee (Graduate)	50.00
Graduation Fee (Ph.D.)	60.00
*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**

[1]Acadmic 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 Immigration and Naturalization Service (INS) regulations concerning the INS Form I-20, Section 8, for financial assurance. 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	$1,378.00
Foster Living/Learning Complex	1,378.00
All Other Dormitories	742.00

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. **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	$928.00
Option 2:	21 meals a week per semester	$1007.00

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 $900.00 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.**

REMITTANCE

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 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 Cahier's Department. The University accepts the following methods of payment: cash, money order, traveler's check, cashier's check, certified check, and VISA and MasterCard Credit Cards. Additionally, VISA and MasterCard Credit Cards are accepted by telephone.

When paying by MasterCard or VISA Credit Card, the student must have approved permission by issued credit card holder. The University reserves the right to contact any cardholder.

No portion of a check or money order made payable to AAMU will be given as change to a student, except in cases where a written request from the parent accompanies the payment. The University does not cash personal checks, certified checks, traveler's checks, money orders or cashier's checks. Monies for books and other personal items should be provided to the student via money order, cashier's check, or certified check.

Students are expected to meet all financial obligations by the specified due date. The University reserves the right to deny admission and to withhold transcripts of any students who fail to meet promptly his/her financial obligations to the University. 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 POLICY

The 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%

NO REFUND AFTER THE THIRTIETH CALENDAR DAY
Note: The tuition refund percentage is based on the total tuition charged and not the amount paid. Full refund will be issued if a course is cancelled by the university.

PAYMENTS PAID BY CREDIT CARD WILL BE CREDITED TO THE CARDHOLDER'S CARD UPON OFFICIAL WITHDRAWAL FROM THE UNIVERSITY OR DROPPING OF CLASS.

THE CREDIT CARD THAT WAS PRESENTED FOR PAYMENT OF TUITION MUST BE PRESENTED FOR CREDIT. (NO EXCEPTIONS)

Students scheduled to receive Financial Aid, who are not planning to attend a session for which they have registered, must notify the Financial Aid Office in writing prior to the first day of class to cancel their 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 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, room and board, 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 form to student. If the term is still in session, the staff member will indicate current term. Student will proceed to Office of Financial Aid for verification of financial status. Cancellation of requests for Financial Aid must be verified or processed. If approved by Financial Aid Officer, the student returns form to Office of Registrar. Courses will be removed from the student's record. Student will present approved document to 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 or she officially withdraws from the University.

Withdrawing from the Residence 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:

75% of the unexpended portion of the rent for residence hall will be refunded if the student withdraws before the fourth week of classes. .....

50% of the unexpended portion of the rent for residence hall will be refunded if the student withdraws after the fourth week of classes.

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 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 at Alabama Agricultural and Mechanical University provides financial assistance to students who need aid in order to attend the University. The University believes that the amount of aid granted should be based on financial need. Students seeking assistance are required to file an application for Federal Student Financial Aid annually. Applications for aid should be completed in January or February of the year prior to the academic year in which the student will need assistance.

Application materials and a brochure describing available aid programs may be obtained from the Office of Student Financial Aid, 211 Patton Hall, and/or on the web at www.aamu.edu/finaid. The financial aid which students may receive includes scholarships, grants, loans and part-time employment.

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- 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' courses 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, for undergraduates with exceptional financial need (lowest Expected Family Contributions) 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.

- **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.** This is 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).** These 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, 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 located 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.

Satisfactory Academic Progress

Alabama A&M University is required by federal law (34 CFR 668.16) to define and enforce standards of Satisfactory Academic Progress (SAP, see page 22). 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 Program)
Federal Parent PLUS Loans
Federal Stafford Student Loans (Subsidized and Unsubsidized)
Federal Work-Study
Federal Perkins Loans

A preliminary SAP measurement is run during the midterm grade reporting process of each academic year (spring term). Students deemed not to be making Satisfactory Academic Progress are placed on **Financial Aid Alert** and sent a notification letter in March. At this point, it is suggested that the student attend summer school. It is also recommended that the student seek help from *Office of Retention and Academic Support* to improve academic standing. During the summer term, students placed on Financial Aid Alert are afforded an opportunity to receive aid and improve their quantitative and qualitative standing.

Subsequently, SAP is measured at the end of every academic year (July). Those students who have not improved their academic standing are placed on financial aid suspension and notified by letter that their aid has been cancelled for the fall and spring terms. Thus, students with unsatisfactory academic progress must appeal to receive aid for the fall and spring terms.

In addition, at the point that the Financial Aid Office receives the student's financial aid application for processing. The student's academic progress is measured using three components: **Academic standing; hours attempted, hours attempted and earned;** and **maximum time frame.** If the student does not meet the minimum requirements for the three components, the student is not eligible for federal assistance.

Academic Standing

Undergraduate students must have a cumulative 2.00 grade point average (GPA) by the end of 24 attempted credit hours. Students placed on academic probation, temporary suspension, and probation after suspension must complete the financial aid appeal process in order to qualify for financial aid.

Hours Attempted and Earned

Students must successfully complete at least 67% of their credit hours at Alabama A&M University. All hours attempted, including classes that may have been dropped and withdrawals, will be included in the Satisfactory Academic Progress calculation. Below you will find the minimum requirements for hours attempted, completion percentage, and cumulative GPA:

Non-credit courses will not be counted in hours attempted, but earned credit hours for remedial courses will be recorded as hours attempted. A student must remove an incomplete (I) grade within the time frame indicated in the University's catalog or receive a grade of F. An incomplete grade will have the same effect as a failing grade with regard to earned credit hours.

All academic work, including work voided by AAMU's academic bankruptcy option, must be considered in determining federal financial aid eligibility. The Federal Student Aid program regulations make no

provision for the concept of academic amnesty or academic renewal. Therefore, a school must always include courses applicable to a student's major (whenever taken) in evaluating a student's satisfactory academic progress.

Maximum Time Frame

An undergraduate student is allowed a maximum of 192 credit hours to complete degree requirements. Unless the student can provide documentation of a graduation date of two semesters or less at the time of the appeal, federal financial assistance for undergraduate work will not be extended beyond this time frame.

Transfer students who are considered in good academic standing from the previous schools attended will be eligible for federal Title IV funds. Transfer credits will also be included in calculation of the maximum time frame.

Financial Aid Appeal Notification

Financial Aid Analysts and Specialists typically assess satisfactory academic progress for each student at the end of each academic year. However, in the case of mid-year transfer or reinstatement cases, a student's academic record is reviewed to determine eligibility for federal assistance. If the student is not making satisfactory academic progress, notification is sent in the form of a letter informing the student of his or her noncompliance. A student may apply for financial aid reinstatement by requesting a financial aid appeal. The financial aid appeal process allows the student to explain extenuating or unforeseeable circumstances that may have hindered the student's academic progress.

Financial Aid Appeals Procedures

Phase One: Student Appeals to the Director of Financial Aid

Step 1: Student must complete the financial aid appeal form on the Financial Aid web page. Appeals based on extenuating circumstances (i.e., student injury or illness, death of student's relative, and/or other circumstances resulting in undue hardship to student) should be accompanied by documentation (if requested by the Director).

Step 2: The financial aid director will review the appeals provided within 48 to 72 hours. The director may render one of the following decisions:

Decision	Description
Pending	Additional information is needed to render a decision. Temporarily Suspended – no decision granted until the issue is cleared with Admissions.
Financial Aid Warning	Student may continue to receive student financial aid. Student must, however, have the minimum University required GPA at the conclusion of the academic year.
Financial Aid Probation	Student may continue to receive student financial aid. Financial aid eligibility is contingent upon the student attending all of the *Office of Retention and Academic Support (ORAS)* sessions until the end of the academic year and attaining the minimum GPA/completion rate required by the student's university classification. Students who **do not** meet the ORAS requirement will have their aid suspended immediately and must (1) re-appeal, (2) show evidence that their academic standing improved even though they were noncompliant, and (3) provide a letter of support from an ORAS representative.
Financial Aid Probation- Reduction or Suspension of Loan Eligibility	A student may continue to receive student financial aid. Student loans will be reduced or suspended for one year. Student loan reinstatement is contingent upon the student attending all of the *Office of Retention and Academic Support (ORAS)* sessions until the end of the academic year and attaining the minimum GPA/completion rate required by the student's university classification. Students that **do not** meet the ORAS requirement will have their aid suspended immediately and must (1) re-appeal, (2) show evidence that their academic standing improved even though they were noncompliant, and (3) provide a letter of support from an ORAS representative.
Financial Aid Suspension Referred to Financial Aid Appeals Committee	Financial aid eligibility suspended for one year. Student may re-appeal to the Financial Aid Appeals Committee

Step 3. Financial Aid Analyst or specialist will communicate the director's decision to the student via a letter.

Step 4. Those decisions are then mailed to the student. Students may also check their SAP status on the web. If the appeal is denied or the student chooses to appeal this decision, he or she may appeal to the full Financial Aid Appeals Committee by asking the analyst to send information to the committee.

Phase Two: Financial Aid Committee Review

Step 1: Those appeals denied by the director will be automatically forwarded to the chairperson of the Financial Aid Appeals Committee.

Step 2: The Financial Aid Appeals Committee will review the appeals denied by the director. The committee will assess the explanation and documentation provided by the student and render one of the following decisions:

Decision	Description
Pending	Additional information is needed to render a decision.
	Temporarily Suspended – no decision granted until the issue is cleared with Admissions
Financial Aid Warning	Student may continue to receive student financial aid. Student must, however, have the minimum University required GPA at the conclusion of the academic year.
Financial Aid Probation	Student may continue to receive financial aid. Financial aid eligibility is contingent upon the student attending all of the *Office of Retention and Academic Support (ORAS*) sessions until the end of the academic year and maintaining the minimum GPA/completion rate required by the student's university classification. Students who **do not** meet the ORAS requirement will have their aid suspended immediately and must (1) reappeal, (2) show evidence that their academic standin improved even though they were noncompliant, and (3) provide a letter of support from an ORAS representative.
Financial Aid Probation-Reduction or Suspension of Loan Eligibility	A student may continue to receive student financial aid. Student loans will be reduced or suspended for one year. Student loan reinstatement is contingent upon the student's attending all of the *Office of Retention and Academic Support (ORA* sessions until the end of the academic year and attaining the minimum GPA/completion rate required by the student's university classification. Students who **do not** meet the ORAS requirement will have their aid suspended immediately and must re-appeal, (2) show evidence that their academic standing improved even though they were noncompliant, and (3) provide a letter of support from an ORAS representative.
Financial Aid Suspension – Referred to Financial Aid Appeals Committee	Financial aid eligibility suspended for one year. **The Committee's decision is final!**

Step 3: Financial aid analyst or specialist will communicate the Committee's decision to the student.

Verification

AAMU adheres to the following verification principles developed by the Nation Association of Student Financial Aid Administrators (NASFAA). To ensure that limited financial aid funds are awarded to eligible students in an equitable and consistent manner, all institutions must develop policies for verification of family reported information. Requirements for verification of family-reported information for purposes of qualifying for financial aid must be cost effective, flexible, and based upon acceptance of a reasonable tolerance range for error applied to award amounts.

While institutions vary widely by type, students served, and mission, minimum standards for verification must exist for all institutions. Verification procedures will be uniformly applied to all financial aid programs which require demonstrated financial need as eligibility criterion.

WHO
Alabama Agricultural and Mechanical University (AAMU) will verify 30% of the total number of aid applicants selected by the Federal Processor. In addition, efforts will be made to resolve all comments on the ISIR and conflicting documentation, or the AAMU Financial Aid Staff may question any aspect of an application.

WHAT
For applicants undergoing verification, AAMU will verify the items specified in the 34CFR Part 668.56. Specifically these items include for Title IV applicants: AGI; taxes paid; non-taxable income; household size, and number in postsecondary education. Additional items will also be verified when there is conflicting documentation on file or items selected by the AAMU Financial Aid Staff.

APPLICANT DEFINITITON
An applicant is anyone enrolled at AAMU who is eligible to receive an aid award.

APPLICANT'S RESPONSIBILITIES
It will be the applicant's responsibility to see that all documents requested are properly submitted with proper signatures. If a Pell or campus-based applicant's dependency status changes during the award year, updating will occur unless that change is a result of a change in marital status. Household size and number in postsecondary education can only be updated as a result of overpayment discovered during the verification process.

DOCUMENTATION
Documentation will consist of signed copies of most income-tax returns as well as the completed and signed appropriate verification form. Some exceptions to documentation may be made in conjunction with what is allowed by federal regulation.

TIME PERIOD
All applicants are encouraged to submit the required forms and documentation as quickly as possible. For campus-based funds, which are made reasonably available to all eligible students within the packaging policy, the application is not complete until the verification process has been completed. Normally, campus-based aid will not be awarded for a semester that is more than half over unless the Financial Aid director, Coordinator for Information Services, or Coordinator for Administrative Services decided to make an exception. For Pell recipients, the deadline is 120 days from the applicant's last date of enrollment or August 31, whichever comes first. This includes making any necessary corrections, submitting those corrections to the Central Processor, and submitting the new correct Student Aid Report (SAR) to the institution. For Federal loan applicants, AAMU will require verification to occur before determining eligibility; normally an applicant will not be certified for a period of enrollment that has already passed or if less than 30 days remain before the close of the semester. Specific documentation will use the time periods outlined in regulations.

INTERIM DISBURSEMENTS
No Title IV aid will be released until the student has completed the required verification process.

CONSEQUENCES
If a student fails to provide documentation or information within the required time frame, no Title IV aid will be released.

TOLERANCES
For the Federal Pell Grant Program, the tolerance values will be used in order to pay a student. If a student does not qualify for payment options based on tolerance, then a correction must be filed with the Central Processor.

NOTIFICATION
The AAMU Office of Student Financial Aid will inform a student of what is required for verification as processing occurs. Documents missing will be noted on the missing item list or a document-tracking letter and given or mailed to the student. If during the process of verification or updating, AAMU realizes that a Federal Loan or any other financial aid that exceeds tolerance levels, has been made and these exceed the student's need, the student will be notified of this action in writing. If in the verification process, it is discovered that the award amount would increase for a Pell grant, the student will be informed by AAMU and will only pay on the original ISIR until a new one is processed and originated.

REFERRAL PROCEDURES
The AAMU Office of Student Financial Aid follows the referral procedures mandated by Federal regulation. Information will be referred to the Secretary of Education, as outlined in the Verification handbook. Over-awards, as a result of Return of Title IV will be reported to the Federal Government if it exceeds $25.00.

Repayment of Unearned Federal Financial Aid

If students withdraw from school prior to completing over 60% of a term, they may be required to repay a portion of the federal financial aid received for that term. Federal aid includes Federal Stafford Loan, Federal Perkins Loan, Federal PLUS Loan, Federal Pell Grant, and Federal Supplemental Educational Opportunity Grant.

It is recommended that students try to complete one class, if possible, to avoid any financial hardship imposed by this new regulation. However, if withdrawal is necessary, it is important to understand the financial obligations.

How Much Must Be Paid When One Withdraws From School?

The amount of repayment depends upon the number of days that the student attended school in the term, the type of financial aid that was received, and whether or not AAMU refunds the tuition and fees. The attended portion of the term not attended represents the portion of aid that is determined to be *unearned.* If receiving loans only and AAMU refunds the amount of tuition and fees, the student will only be required to repay loans in accordance with the regular repayment schedule. All other students who withdraw prior to completing over 60% of a term must repay a portion of their federal financial aid.

When Will 100% of My Federal Financial Aid Be Earned?

If withdrawal procedures are initiated after completing over 60% of the term, the student will have earned 100% of the federal financial aid for that term and no repayment is required. This refers to students who are enrolled in at least one course that meets the full length of the standard term. If one is only enrolled in courses that are shorter than the full length of the standard term, the date for earning 100% of federal aid will vary.

When Does the AAMU Bursar Refund Tuition and Fees?

If withdrawal from AAMU occurs prior to the drop/add deadline for a term, then a full tuition refund will automatically be processed for the student. Contact the University Bursar at 256-372-5200.

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 also 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, on the second floor, living quarters for male faculty. 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. In January 1968, a new building was constructed and occupied. The building was named in honor of Dr. Joseph Fanning Drake, the fourth President of the University. The three-story structure contained more than 60,000 square feet of floor space designed to accommodate 300,000 volumes and seat 1,000 patrons. A comprehensive renovation of the LRC facility was completed August 2002. It is still a 3-story structure which includes a new front entrance, a Faculty Reading Room, a student and a staff lounge, an International Room, a fully interactive Multi-Purpose/Distance Learning Auditorium which will seat 200 people, patron lockers on all three floors, three classrooms, and two conference rooms (first floor Conference Room seats 20 people, second floor Conference Room seats 43 people). In addition, the Computer Lab with 50 PCs and a Multimedia Lab with 40 PCs, is housed on the first floor. Organizationally, the LRC is structured to provide library/media resources and services to a diverse clientele on campus, in the community, and at distance sites.

Today the LRC 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.

What are the library hours?

The J. F. Drake Memorial Learning Resources Center's (LRC) schedule is as follows:

Fall and Spring Semester	
Monday-Thursday	8:00 a.m.-12 a.m.
Friday	8:00 a.m.-5 p.m.
Saturday	10:00 a.m.-5 p.m.
Sunday	2:00 p.m.-10 p.m.

Summer Semester	
Monday-Thursday	8:00 a.m.-10:00 p.m.
Friday	7:30 a.m.-5 p.m.
Saturday	10:00 a.m.-5 p.m.
Sunday	2:00 p.m.-9 p.m.
Classes Not In Session	
Monday-Friday	8 a.m.-5 p.m.
Saturday and Sunday	CLOSED

What are the loan periods for library materials?

Undergraduate students may check out a maximum of 10 books at a time for a 30 day loan period. Graduate students may also check out a maximum of 10 books at a time for a 90 day loan period. You must have your CURRENT student ID with you to check out materials.

Where is the Reference Desk?

The Reference Department is on the Second Floor directly across from the Circulation Desk. Here you will find research assistance and bibliographic instruction. Included in this area are **INTERLIBRARY LOAN AND GOVERNMENT DOCUMENTS.** If you have any questions about researching your topics, need help finding materials or learning to use the catalog or databases, please ask the Librarian on duty.

Where is the circulation desk?

Located on the second floor, the circulation desk also houses reserve materials and the AV Collection. Class Reserve Materials are found at the Circulation Desk.

Faculty circulation privileges allow print materials to be checked out for an entire semester. AV materials may be checked out for 14 days.

LRC Collections

The Library houses 4 distinct collections as well as circulating materials. These collections include: The Black Collection ,The Juvenile Collection, The International Collection and the Archival and Historical Collection. See our website at www.aamu.edu/lrc for a full description of each collection.

Where are the magazines and journals?

The Serials Unit houses current journals, magazines, and newspapers, and also maintains bound volumes, microfilm, and microfiche collections. A "serial" is defined as any publication issued in successive parts which are intended to be continued indefinitely. These publications may be issued in print, non-print, and/or electronic format.

Accessing the Electronic Resources

You may access the databases from any workstation on campus from the LRC Homepage, http://www.aamu.edu/lrc. In addition, we've made it easy for you to access the LRC's databases and e-journals from off-campus by using EZproxy. USER AUTHENTICATION IS REQUIRED FOR ALL OFF-CAMPUS USE. YOU MUST BE REGISTERED WITH ALABAMA A&M UNIVERSITY AND HAVE A VALID EMAIL ACCOUNT. Your computer must be set up to allow cookies.

Is there a computer lab in the LRC?

The computer lab is located on the first floor of the LRC. There are 50 workstations available for research, word processing and other research related tasks.

The University Archives

Archives Unit is dedicated to collecting and organizing historical documents and materials that reflect the heritage of Alabama A&M University. It is the goal of the LRC Archives to make these items accessible to the campus community as well as the community at large while preserving their legacy. A wealth of information is available, such as early student publications and photographs. Most information is available by faculty, students, alumni, and the general public; however, in order to protect the records and to ensure their long term preservation and accessibility, materials in Archives do not circulate.

The first floor:

- Conference Room 1
- Lobby
- **Computer Lab**
- **Classroom 121**
- Student Lounge
- **Classroom 120**
- **Classroom 118**
- Electronic Resources & Systems
- Technical Services (Acquisitions, Cataloging and Collection Development)
- **Multipurpose Room**
- Multimedia Lab

The second floor:

- **Administrative Services**
- Lobby
- **Circulation**
- Conference Room 2
- OPACS
- **Reference**
- **Interlibrary loan**
- **Serials**
- **Government Documents**
- Collection 700-799-Fine Arts

The third floor:

- Lobby
- **Circulating Materials**: West Bay: 300-399, 500-599, 600-613 East Bay: 000-099, 100-199, 200-299, 614-699, 800-899, 900-999, 400-499 Room 308
- **Special Collections: West Bay: Juvenile Collection and Black Collection East Bay: International Collection Curriculum Collection: Room 311 Textbook Collection: Room 312**
- Archives
- Faculty Reading Room

OFFICE OF INTERNATIONAL PROGRAMS

Dr. B. Onuma Okezie
104 Carver Complex, Bonner Wing
(256) 372-5059
bo.okezie@aamu.edu
www.aamu.edu/international

Alabama A&M University 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.

Alabama A&M University 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.

The University 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 education development and programs. They serve as guide posts for faculty and staff involvement in international programs.

Three major thrusts of Alabama A&M University's International Programs are:

- **Developmental Assistance.** Under this thrust, AAMU is committed to playing a significant 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 development agencies in agriculture, natural resources and rural development, human nutrition and environmental issues, and institution building in many countries of sub-Saharan Africa, the Caribbean, Central America, Asia and the New Independent States (NIS) of the former Soviet Union

- **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 and governments in fulfilling their educational training program needs by providing a suitable learning environment for the many sponsored students who are sent to AAMU by these agencies and governments. Through the Office of International Programs, which serves as the sponsored students 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 teaching, research and public service, 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 Bureau of Educational and Cultural Affairs of the U.S. Department of State.

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'Ivore; 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 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, Pushkin; Main Botanical Gardens, Russian Academy of Sciences, Moscow, Russia; Tavrida National University, formerly Simferopol State University, Simferopol, Ukraine, and East European University of Economics and Management, formerly called Cherkassy Institute of Business Management, Cherkassy, Ukraine. These linkages provide opportunities for study abroad, exchanges, collaborative research, and programs for students and faculty at AAMU.

Alabama A&M University participates in the National Security Education Program (NSEP) and similar U.S. Government sponsored programs which provide 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 to up to two years.

The University is a member of the National Student Exchange (NSE) Consortium. Under this system, an AAMU student can attend another NSE-member institution while registered at 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 of AAMU. Costs for housing arrangement 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 or visit the website at www.aamu.edu.

STUDENT HEALTH SERVICES (SHS)

1003 Buchanan Way
(256) 372-5601

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. The Student Health Services is an outpatient center and provides both clinical and educational services for all students. 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). Student Health Services will monitor the student's health in collaboration with the PCP.

Student Health Services is staffed by physicians, medical assistants, nurses and a nurse practitioner. The Center's hours of operation are 8:00 a.m. to 5:00 p.m., Monday – Friday; closed weekends and holidays. Lunch hours are 2:00 p.m. to 3:00 p.m. Any student needing medical attention should report to SHS during its hours of operation. If you have an acute illness after hours please seek treatment at **University Walk-In Family** Care located at **501 Wynn Drive.** The telephone number is (256) 890-8700. The office hours are **Monday thru Friday, 8 a.m. – 7 p.m. Saturday, Sunday, and holidays, 9 a.m. – 5 p.m.** In the event of an emergency, the student should seek treatment at **Huntsville Hospital Emergency Room** located at **101 Sivley Road.** Please return to the Student Health Center the next business day for a referral.

ALABAMA A&M UNIVERSITY
Student Health Center Operating Hours

**Physician Schedule August 2008- May 2009*

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Dr. Martin Vann Sherrill	*12:00 pm – 1:30 pm*	*12:00 pm – 1:30 pm*	*12:00 pm – 1:30 pm*	*12:00 pm – 1:30 pm*	*12:00 pm – 1:30 pm*
Dr. Carolyn T. Morns		*8:00 am – 9:00 am*	*8:00 am – 9:00 am*	*10:00 am – 12:00 pm*	
Dr. Vivian Hicks	*8:30 am – 10:30 am*				*8:30 am – 10:30 am*
Dr. Jean Mathis (OB/GYN)	*2:00 pm – 5:00 pm*	*9:00 am – 12:00 pm*	*9:00 am – 12:00 pm*		

**Availability of specific physician subject to change. Please refer to online information.*
***Available August – May only*

DEPARTMENT OF PUBLIC SAFETY

Public Safety Building
(256) 372-5555

The Department of Public Safety is responsible for protecting life, property and enforcing the laws of the State of Alabama and Alabama A&M University. The Department mandates the preservation of peace and public order, crime prevention and the apprehension and prosecution of violators of the law. The Department of Public Safety is committed to the philosophy of community-oriented law enforcement and pledges the highest professional standards while providing an environment conducive to academic excellence. In addition, the Departments works cooperatively with other local law enforcement agencies to investigate violations of campus regulations and policies and state laws. The Department of Public Safety is committed to providing quality service 24 hours a day.

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 AAMU listeners, the business community as well as the Corporation for Public Broadcasting.

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, preparing for employment opportunities and 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 allows 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 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 resulting in a Win/Win combination.

Visit CDS website at 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

201 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. Robert Taylor, Dean
robert.taylor@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 agribusiness, 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 agribusiness, 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, Urban and Regional Planning, Family and Consumer Sciences, Food and Animal Sciences, and Natural Resources and Environmental Sciences. 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 Agriscience, Agriscience Education, Agricultural Economics, Agribusiness Management, , 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. Students may also pursue minors in Remote Sensing and Wildlife Biology.

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, 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 and Educational Specialist 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, 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 both public and private sectors 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 reflects broad-based course offerings to meet the needs of employment as well as graduate studies in this field. Emphasis is on the application of business and management principles in the agricultural 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 financial assistance provided by the federal and state governments, and AAMU's institutional aid programs, there are School of Agricultural and Environmental Sciences, and the Department of Agribusiness 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, Agribusiness Management or Agricultural Economics, a student must officially declare one of the above referenced programs as a major and complete all referenced course 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 point 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

First Semester			Sem Hrs	Second Semester			Sem Hrs.
ORI	101	Survival Skills	1	ENG	102	Composition II	3
ENG	101	Composition I	3	CHE	101	General Chemistry	3
MTH	112	Pre-Calculus Algebra	3	CHE	101L	General Chemistry 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 **OR**	3
			14	MUS	101	Music Appreciation	(3)
				HED/MSC/PED			2
							16

Sophomore Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
ENG	201	English Literature **OR**	3	ENG	202	English Literature **OR**	3
ENG	301	Survey of American Lit. **OR**	(3)	ENG	302	Survey of American Lit. **OR**	(3)
ENG	203	World Literature I	(3)	ENG	204	World Literature II	(3)
FED	212	Human Growth & Develop.	3	PSY	201	General Psychology	3
HIS	203	Found. of Amer. Hist. & Govt.	3	ENG	205	General Speech	3
AGB	211	Metal Fabrication	3	SPE	201	Intro. to Study of Except.	
Child	3						
FAS	112	Intro. to Animal Science	3	SPS	101	Introduction to Plant Science	4
AGB	221	Introduction to Ag. Economics	3	FED	200	Intro. to Teacher Education	2
			18				18

Junior Year

First Semester			Sem.	Second Semester			Sem Hrs.
FED	300	Foundations of Education	2	AGB	314	Small Structure Construction	3
PSY	403	Educational Psychology	3	AGB	212	Wood Technology	3
SPS	251	Intro to Soil Science	4	SPS	423	Ornamental I **OR**	3
SPS	281	Intro to Forestry	3	SPS	425	Lawn & Turf Management **OR**	(3)
AGB	302	Organ. & Admin. of C/TE	3	SPS	427	Ornamentals II	(3)
			15	AGB	301	Electrical Systems & Machines	3
				AGB	311	Small Power Unit & Equip.	3
				ECO	232	Principles of Microeconomics	3
							18

Senior Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
AGB	401	Methods of Teach. Agriscience	3	AGB	495	Internship	12
FED	404	Tests & Measurements	3				12
SED	409	Reading in the Content Area	3				
AGB	405	Extension Methods	3				
AGB	421	Agribusiness Management	3				
			15				

AGRICULTURAL SCIENCES

AGRISCIENCE
128 Credit Hours

Freshman year

First Semester			Sem Hrs.	Second Semester			Sem Hrs
ORI	101	Survival Skills	1	ENG	102	Composition II	3
AGB	101	Intro. to Careers in Agric.	1	MTH	112	Pre-Calculus Algebra	3
ENG	101	Composition I	3	PSY	201	General Psychology	3
HIS	101	World History	3	BIO	101	General Biology	3
AGB	199	Computers in Agriculture	3	BIO	101L	General Biology Lab	1
HED	101	Personal & Comm. Health	2	CHE	101	General Chemistry	3
MUS	101	Music Appreciation **OR**	3	CHE	101L	General Chemistry Lab	1
ART	101	Art Appreciation	(3)				17
			16				

Sophomore Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
HIS	203	American His & Government	3	ECO	232	Prin. of Microeconomics	3
ENG	201	English Literature I **OR**	3	ENG	205	General Speech	3
ENG	203	American Literature I	(3)	ENG	202	English Literature II **OR**	3
AGB	221	Intro. to Agric. Econ	3	ENG	204	American Literature II	(3)
SPS	101	Intro. to Plant Science	4	SPS	251	Intro. to Soil Science	4
AGB	299	Quantitative Apps. In Agrib.	3	FAS	112	Intro. Animal Science	3
			16				16

Junior Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
AGB	301	Electrical Systems	3	AGB	314	Small Structure Construction	3
AGB	311	Small Power Unit & Equip.	3	AGB	323	Agricultural Marketing	3
SPS	423	Ornamentals I	3	SPS	427	Ornamentals II	3
SPS	422	Landscape Design	3	SPS	425	Lawn/Turf Management	3
		Electives (Advisor Approved)	5			Elective (Advisor Approved)	5
			17				17

Senior Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs
AGB	405	Extension Methods	3	AGB	421	Agribusiness Management	3
AGB	422	Agricultural Financing	3	AGB	418	Agricultural Leadership	3
		Electives (Advisor Approved)	8			Electives (Advisor Approved)	9
			14				15

AGRICULTURAL ECONOMICS

128 Credit Hours

Freshman Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
ORI	101	Survival Skills	1	AGB	102	Intro. to Careers in Agriculture	1
ENG	101	*Communication Skills	3	ENG	102	*Communication Skills 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	201	Intro. to Sociology	(3)
NHM	103	Nutrition Today	(2)	SPS	101	Intro. to Plant Science	4
AGB	199	Computers in Agriculture	3				14
MUS	101	Music Appreciation **OR**	3				
ART	101	Art Appreciation	(3)				
			15				

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

Sophomore Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
AGB	221	Intro. to Agricultural Economics	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	4
ENG	205	General Speech	3				16
			18				

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
AGB	323	Agricultural Marketing	3	AGB	322	Farm Management	3
BUS	207	Legal Environment and Ethics	3	AGB	421	Agribusiness Management	3
ECO	402	Intermediate Microeconomics	3	ENG	304	Advanced Composition	3
ECO	413	Money and Banking	3	ECO	401	Intermediate Macroeconomics	3
MGT	315	Management Information Systems	3	ECO	414	Managerial Economics	3
		Electives (Advisor Approved)	3	AGB	424	International Ag. Develop. **OR**	3
			18	AGB	453	International Ag. Marketing	(3)
							18

Senior Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
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 **OR**	3
AGB	443	Economics of Food Distribution	3	AGB	424	International Agric. Develop.	(3)
		Electives (advisor approved)	3	AGB	418	Agricultural Leadership	3
			15			Electives (advisor approved)	2
							14

AGRIBUSINESS MANAGEMENT

128 Credit Hours

Freshman Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
ORI	101	Survival Skills	1	AGB	102	Intro. to Careers in Agriculture	1
ENG	101	*Communication Skills	3	ENG	102	*Communication Skills 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	201	Intro. to Sociology	(3)
NHM	103	Nutrition Today	(2)	SPS	101	Intro. to Plant Science	4
AGB	199	Computers in Agriculture	3				14
MUS	101	Music Appreciation **OR**	3				
ART	101	Art Appreciation	(3)				
			15				

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

Sophomore Year

First Semester			Sem Hrs.	Sem Hrs.		Second Semester	Sem Hrs.
AGB	221	Intro. to Agricultural Economics	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	4
ENG	205	General Speech	3				16
			18				

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
AGB	323	Agricultural Marketing	3	AGB	322	Farm Management	3
MGT	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	MIS	315	Management Info. Systems	3
		Electives (advisor approved)	6	AGB	424	Intern'l Agric. Develop. **OR**	3
			18	AGB	453	International Agric. Marketing	(3)
						Electives (advisor approved)	3
							18

Senior Year

First Semester			Sem Hrs.	Second Semester			Sem Hrs.
AGB	499	Research in Agribusiness	3	AGB	433	Agricultural Sales	3
AGB	422	Agricultural Finance	3	AGB	453	International Ag. Marketing **OR**	3
AGB	425	Agricultural Policy	3	AGB	424	International Ag. Develop.	(3)
		Electives (advisor approved)	6	MGT	433	Human Res. Management	3
			15	AGB	418	Agricultural Leadership	3
						Electives (advisor approved)	5
							14

LIST OF ELECTIVES

DEPARTMENT OF AGRIBUSINESS

Agricultural Economics Option

Course	Number	Course Title	Semester Hours
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

Course	Number	Course Title	Semester Hours
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

Course	Number	Course Title	Semester Hours
AGB	330	Internship	3 - 6
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
MGT	352	Entrepreneurship	3
MGT	433	Human Resources Management	3
SPS	490	Special Problems	3

DESCRIPTION OF COURSES

AGB 102 *Introduction to Careers in Agriculture* - 1 hr. This course provides the agribusiness student and 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: Non**e (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. The United States Department of Agricultural (USDA) data and graphical set 'World Agricultural Trends and Indicator (WATI)" and US Census of Agriculture databases will be utilized. **Prerequisite: Non**e (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 is 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: Non**e (Offered: Spring)

AGB 302 *Organization and Administration of Career Technology Education*- 3 hrs. A course dealing with 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: Non**e (Offered: Spring)

AGB 311 *Small Power Unit and Equipment* - 3 hrs. A course dealing 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: Non**e (Offered: Spring)

AGB 314 *Small Structure Construction* 3 hrs. 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 analyzed to obtain an income consistent with family resources applied to the individual farm. Emphasis on budgeting crop and livestock system, 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. Provision of supervised, on-the-job experiences with extension service, agribusiness firms, governmental agencies and farm cooperatives for upper level students. 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. Focus 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. A 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. **Prerequisite: None** (Offered: Fall)

AGB 405 *Extension Methods* - 3 hrs. Principles and procedures in developing extension programs in agriculture, with emphasis on program determination, teaching methods and relationship with teaching adults in the life-learning process. **Prerequisite: None** (Offered: Fall)

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 management of principles 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 232.** (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 organization as well as activities involved in day-to-day operations. Hands-on training in performing functions of an agribusiness salesperson is 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 occurring in the retail store. **Prerequisite: None** (Offered: Spring)

AGB 445 *Natural Resource Economics* - 3 hrs. Exposure of 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 population and government responses to increasing visibility of these issues. **Prerequisite: None** (Offered: Fall Even)

AGB 453 *International Agricultural Marketing* - 3 hrs. A course 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 495 *Directed Teaching* - 12 hrs. Practice teaching by students in vocational agriculture for twelve 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 499 *Research in Agribusiness* – 3 hr. Critical review of relevant research and group discussion of current development and problems related to the agricultural sector. Prerequisites: Junior or senior standing and consent of academic advisor. **Prerequisite: None** (Offered: Spring)

DEPARTMENT OF URBAN AND REGIONAL PLANNING

308 James Dawson Building
(256) 372-5425

INTRODUCTION

The Department of Urban and Regional Planning (URP) 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 STATEMENT

Alabama A&M University (AAMU) is a land grant institution that combines education, research and service in professional, vocational and liberal arts field. The Department of Urban and Regional Planning (URP) fulfills the mission of AAMU by providing 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 entry level professional planning careers in governmental agencies, land development, consulting businesses, community service organizations, community development corporations (CDCs), and private industry or for 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 the natural and social environment 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 concentration. 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's institutional aid programs, there are School of Agricultural and Environmental Sciences and Department of Urban and Regional Planning 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'S 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 PROGRAMS/RECOGNITION

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 specialized knowledge in a particular subject, 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 310, UPL 316, UPL 317, UPL 327, UPL 330, UPL 404, UPL 407, UPL 408, UPL 429, UPL 420), and
    - 12 credit hours on non-planning or required support courses (ENG 304, PSC 306, SPS 365, GEO 401).
- Complete 18 credit hours in an area of specialized knowledge in a particular subject.

All planning majors are required to select an area of specialized knowledge in a particular subject. This may be achieved by selecting a minor in a related area, such as political science, public history, sociology, business, economics, marketing, accounting, or computer science, or by following a special grouping of 18 credit hours which have been approved by the student's advisor. In all cases, the student's senior project must be directly related to a selected planning concentration.

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 the Bulletin. Transfer students pursuing a baccalaureate degree in the School of Agricultural & Environmental Science must earn at least 50 percent of the credit hours required for the degree at Alabama A&M University.

PROGRAM CURRICULA

122 credit hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem Hrs.
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]ENG	101	Composition I	3	MTH	110	Finite Mathematics **OR**	3
BIO	101	General Biology I	3	MTH	112	Pre-Calculus Algebra	(3)
BIO	101L	General Biology I Lab	1	HIS	101	World History **OR**	3
CMP	101	Fund. of Comp. & Info Systems **OR**		HIS	204	Intro. to Africana Studies	(3)
				PHY	101	Physical Science I &	3
AGB	199	Computers in Agriculture	3	PHY	101L	Physical Science Lab **OR**	1
UPL	101	Introduction to Planning	3	CHE	101	General Chemistry &	(3)
			14	CHE	101L	General Chemistry Lab **OR**	(1)
				BIO	102	General Biology II &	(3)
				BIO	102L	General Biology II Lab	(1)
				ART	101	Art Appreciation	3
							16

[1]ENG 103 may be taken by international students.
[2]ENG 104 may be taken by international students.

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem Hrs.
UPL	103	Community & You	3	PSC	206	State & Local Gov	3
ENG	203	World Literature I	3	ENG	206	World Literature II	3
ECO	231	Prin. Macroeconomics	3	NHM	103	Nutrition Today **OR**	(3)
UPL	203	Hist. Theory of Planning	3	FAS	101	Food & Survival of Man	2
ENG	205	General Speech	3	ECO	232	Prin. of Microeconomics	3
			15	GEO	401	Urban Geography	3
				UPL	201	Small Town Planning	3
							17

Junior Year

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

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem Hrs.
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
						Specialization Elective	3
			15			Free Elective	3
							15

Electives

Course Number	Course Title	Sem Hours.
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 credit hours required for minor in Urban Planning)

Course Number	Course Title	Sem. Hours.
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. Description of the planning profession which includes exposure to history, roles, values, urban design, quantitative methods and various functions performed by planning professionals. **Prerequisite: None** (Offered Fall)

UPL 103 *The Community and You* - 3 hrs. An examination of the role of citizens in the life and viability of communities which 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. **Prerequisite: None** (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. **Prerequisite: None** (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. **Prerequisite: None** (Offered Fall)

UPL 303 *Planning Research Methods I*. - 3 hrs. Methods and procedures in statistical evaluation, including their application to planning and urban analysis. **Prerequisite: None** (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. **Prerequisite: None** (Offered Fall)

UPL 316 *Planning Research Methods II* - 3 hrs. Techniques and methods involved in conducting research with consideration given to the relationship of research to the planning profession. **Prerequisite: None** (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 preparations of site and land use plans, and other planning documents. **Prerequisite: None** (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 and description and analysis of the social impact of physical development plans on urban societies. (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* - 3 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 training of 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 provisions of comprehensive health services and facilities. (Offered Summer, Odd Years)

UPL 438 *Transportation Modeling* - 3 hrs. An in-depth orientation to contemporary transportation planning computer model analysis techniques. Practical applications are provided so that students 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. A course focusing 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

Dr. Cynthia M. Smith, Chairperson
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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, and
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).

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 a minimum of 500 hours of clinical experiences/internships;
6. Completion of minors as required by majors;

7. **Application for entrance into teacher education. (See Guidelines for Admission under School of Education for procedures and requirements);
8. **Completion of School of Education Exit Assessment, and
9. Completion of required semester hours as listed by majors.

*See specific details by major.
**Family and Consumer Sciences Education.

FINANCIAL AID

Family and Consumer Sciences Awards

The Abigail K. Hobson Memorial Scholarship Award

Contributions from friends and alumni of the area are used to provide a cash award of $200.00 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 a concentration 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 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 Student Unit 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 a Family and Consumer Sciences major who have completed 45 semester hours or equivalent and rank in the top 25% of their class in the unit.

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) 372-5422

PURPOSE

The undergraduate major in Apparel, Merchandising and Design promotes and enhances 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 and Fashion Design. As structured, the programs provide unique opportunities and experiences to assist students in becoming creative, efficient and contributing members of society and 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, and 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 and merchandising,

2. provide support instruction for minors in other disciplines who desire to pursue careers related to clothing, and merchandising,

3. provide resource services to individuals in the urban and rural community, including parents, teachers, department store personnel and textile employees.

PROGRAM REQUIREMENTS

In addition to the academic course requirements, all students majoring in Apparel, Merchandising and Design must complete at least 500 hours of practical work in Apparel, Merchandising and Design, including completing AMD 411 – Directed Field Experience before graduating from Alabama A&M University.

APPAREL, MERCHANDISING AND DESIGN MAJOR

Fashion Design Concentration

128 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]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	Nutrition Today **OR**	2
FCS	101	Intro to the Profession	1	NHM	103	Personal & Comm. Health	(2)
			15				17

[1]ENG 103 may be taken by international students.

[2]ENG 104 may be taken by international students.

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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 English Lit. II	(3)
CHE	111	Applied Chemistry I	3	PSY	201	General Psychology **OR**	3
CHE	111L	Applied Chemistry I Lab	1	SOC	201	Intro to Sociology	(3)
ART	110	Fundamentals of Drawing	3	ECO	200	Basic Economics	3
AMD	201L	Basic Clothing Construction	3	ART	209	Composition with Drawing	3
AMD	203	Consumer Asp. Of Clothing	3	AMD	204L	Clothing Throughout the Life Cycle	3
			16	AMD	208	Ready-to-Wear Apparel Anal.	2
							17

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	3	ART	406	Fashion Illustration	3
			15				15

Summer

AMD	411	Directed Field Experience	6

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	3
		Electives	3	HDF	312	Family Resource Mgt.	3
			12				15

APPAREL, MERCHANDISING AND DESIGN MAJOR

Fashion Merchandising Concentration

128 Credit Hours

Freshman

First Semester			Sem. Hrs.	Second Semester			Sem.Hrs.
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]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 **OR**	2
MTH	112	Pre Calculus Algebra	3	HED	101	Personal and Comm. Health	2
			15				17

[1]ENG 103 may be taken by international students.

[2]ENG 104 may be taken by international students.

Sophomore

First Semester			Sem. Hrs.	Second Semester			Sem.Hrs.
ENG	203	World Literature I **OR**	3	ENG	204	World Literature II **OR**	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 **OR**	3
CHE	111L	Applied Chemistry Lab	1	PSY	201	General Psychology	(3)
ART	111	Two Dimensional Design	3	HDF	314	Family and Society	3
AMD	203	Consumer Aspects of Clothing	3	AMD	204L	Clothing Throughout the Life Cycle	3
AMD	201L	Basic Clothing Construction	3	AMD	208	Ready-to-Wear Apparel Anal.	2
			16	ECO	231	Principles of Macroeconomics	3
							17

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ACC	203	Intro. to Accounting I	3	ECO	232	Principles of Microeconomics	3
MKT	315	Principles of Marketing	3	AMD	302	Historic Costume	3
MKT	317	Retail Management	3	AMD	306	Fashion Merchandising II	3
AMD	303	Fashion Merchandising I	3	AMD	308	Visual Merchandising	3
AMD	307L	Flat Pattern Design	3	AMD	316L	Consumer Textiles II	3
AMD	315	Consumer Textiles I	3				15
			18				

Summer

AMD	411	Directed Field Experience	6

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem.Hrs.
ENG	205	General Speech	3	MKT	477	Marketing Management	3
MKT	323	Promotion Management	3	AMD	404L	Advanced Clothing & Design	3
FCS	420	Senior Seminar	1			Electives	3
MKT	332	Merchandising Techniques	3	HDF	312	Family Resource Mgt.	3
AMD	419	Merch. & Design Seminar	2				12
			12				

APPAREL, MERCHANDISING AND DESIGN MINOR

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

Course#	Course Title	Sem. Hrs.
AMD 104L	Art and Design	3
AMD 203	Consumer Aspects of Clothing	3
AMD 204L	Clothing Throughout the Life Cycle	3
AMD 201L	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
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 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* – 3 hrs. A study of the art elements and principles and their application to everyday life. **Prerequisite: None** (Offered Spring)

AMD 201L *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 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 201L, AMD 203** (Offered Spring)

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 II*- 3 hrs. An examination of 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 201L, AMD 203 and AMD 204L** (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 201L**

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. A study of 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 201L** (Offered Fall)

AMD 406L *Draping* - 3 hrs. One 1-hour lecture and two 2-hour lab periods per week. The principles and techniques of draping and dress designing based on the manipulation of fabric on a form. **Prerequisites: AMD 104L, AMD 201L, and AMD 307L** (Offered Spring)

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 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) 372-4107

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

provide opportunities for students to obtain strength in the management of individual and family resources.

PROGRAM REQUIREMENTS

In addition to the academic course requirements, all students majoring in Human Development and Family Studies must complete at least 500 hours of practical work in Human Development and Family Studies, which includes completing FCS 495 – Internship in FCS before graduating from Alabama A&M University.

HUMAN DEVELOPMENT AND FAMILY STUDIES MAJOR

128 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]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	2
BIO	101L	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 & Community Health **OR**	2	NHM	102	Principles of Nutrition	3
NHM	103	Nutrition Today	(2)				18
FCS	101	Intro. to the Profession	1				
			17				

[1]ENG 103 may be taken by international students.
[2]ENG 104 may be taken by international students.

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	203	World Literature I **OR**	3	ENG	204	World Literature II **OR**	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	HDF	211	Child Growth & Development	3
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	3				15
			18				

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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. & Resource Mgmt.	3
		Concentration Elective	2	HDF	314	Family & Society	3
			14				15

Senior Year

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

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

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.

Course #	Course Title	Sem. Hrs.
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 312	Family Economics and Resource Management	3
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

ON-LINE PROGRAM IN FAMILY FINANCIAL PLANNING

Family and Consumer Sciences Distance Instructional Alliance

The Department of Family and Consumer Sciences (FCS) at Alabama A & M University has joined with seven other 1890 FCS units to form the 1890 Family and consumer sciences-Distance Instructional Alliance (1890 FCS-DIA). The other institutions involved in the Alliance are Fort Valley State University (Georgia), North Carolina A & T, South Carolina State University, Southern University and A & M College (Louisiana), Tennessee State University, University of Arkansas at Pine Bluff and University of Maryland Eastern Shore. The Alliance pools the resources of the participating universities to offer programs collectively that each could not offer alone. The first program being offered by the Alliance is an 18-hour, on-line program in Family Financial Planning (FFP). Perspective participants in this program must be registered students at one of the member institutions.

For certification in Family Financial Planning, the student must complete all of the following courses.

HDF 301	Fundamentals of Family Financial Planning	3 hrs.
HDF 305	Insurance Planning for Families	3 hrs.
HDF 315	Income Tax Planning for Families	3 hrs.
HDF 405	Investment Planning for Families	3 hrs.
HDF 406	Retirement Planning for Families	3 hrs.
HDF 407	Estate Planning for Families	3 hrs.

FAMILY AND CONSUMER SCIENCES EDUCATION MAJOR

121-122 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]ENG	101	Composition I	3	MUS	101	Music Appreciation **OR**	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	3
HED	101	Personal & Comm. Health **OR**	2	PSY	201	General Psychology	3
PED		Physical Education Activity **OR**	(2)				18
MSC		Military Science I	(2)				
FCS	101	Intro. to the Profession	1				
			17				

[1]ENG 103 may be taken by international students.
[2]ENG 104 may be taken by international students.

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	201	Survey of English Literature I **OR**	3	ENG	202	Survey of English Literature II **OR**	3
ENG	301	Survey of American Lit I **OR**	(3)	ENG	302	Survey of American Lit II **OR**	(3)
ENG	203	World Literature I	(3)	ENG	204	World Literature II	(3)
CHE	111	Applied Chemistry I	3	ENG	205	General Speech	3
CHE	111L	Applied Chemistry I Lab	1	AMD	204L	Clothing Through. the Life Cycle	3
NHM	201L	Science of Food Preparation	3	FED	212	Human Growth & Develop.	3
SPE	201	Intro. to Study Except. Indiv.	3	ECO	200	Basic Economics	3
HIS	203	Found. Of Amer. History	3	FED	200	Introduction to Teacher Ed.	2
			16				17

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
HDF	201	Family Relations	3	HDF	314	Family and Society	3
AMD	203	Consumer Aspects of Clothing	3	HDF	304	Parenting	3
FCS	303	Career Tech. /FCS Education.	3	NHM	301L	Food Service Operations I	3
AMD	305	Housing and Interiors	3	HDF	312L	Family Econ. & Resource Mgmt.	3
			12	SED	307	Materials & Methods of Teaching In Secondary Schools	3
							15

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
FCS	401	Fam. & Con. Sc. Edu.	3	FCS	495	Internship in FCS	12
SED	409	Reading in Content Area	3				12
FED	404	Tests and Measurements	3				
PSY	403	Educational Psychology	3				
FCS	420	Seminar	1				
			13				

COURSE DESCRIPTIONS

FCS 101 *Introduction to the Profession* - 1 hr. General overview of Family and Consumer Sciences-its areas, its 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 and Spring)

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 Fall and Spring)

HDF 301 *Fundamentals of Family Financial Planning* – 3 hrs. Introduces students to the various financial planning topics that face families, such as the financial planning process, client/planner interactions, time value of money applications, personal financial statements, cash flow and debt management, asset acquisition, and education planning. Risk management, investment planning, retirement planning, plan integration, and ethics are also discussed. **Prerequisite: ECO 200, ECO 231 or ECO 232 and HDF 312**

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 305 *Insurance Planning for Families* – 3 hrs. Introduces students to risk management and insurance decisions in family financial planning. Topics include insurance for life, health, disability, property and liability risks, as well as annuities, group insurance, and long term care. **Prerequisite: HDF 301 or consent of instructor**

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 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 being and becoming are addressed**. Prerequisite: None** (Offered Spring, Odd Years)

HDF 312 *Family Economics and Resource Management* – 3 hrs. A study of the management of family resources, including credit, buymanship, and consumer issues, augmented with supervised learning experiences. **Prerequisite: None** (Offered Fall and Spring)

HDF 314 *Family and Society* - 3 hrs. A study of the socialization process of individuals and families in various cultures in North America and abroad, with emphasis on the humanizing or degenerating influences of the twentieth century. **Prerequisite: None** (Offered Fall and Spring)

HDF 315 *Income Tax Planning for Families* – 3 hrs. Provides an overview of current tax laws, income tax principles, and taxation terminology. The course focuses on tax planning considerations, computations, and tax planning strategies including tax pitfalls that impact financial planning for families. **Prerequisites: HDF 301 or consent of instructor**

HDF 318 *Workshop* - 3-6 hrs. Selected topics in Human Development and Family Studies. **Prerequisite: None** (Offered Fall and Spring)

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 405 *Investment Planning for Families* - 3 hrs. Provides the student with an understanding of the various types of securities trades in financial markets, investment theory and practice, portfolio construction and management, and investment strategies and tactics to meet a family's investment goals. **Prerequisites: HDF 301 or consent of instructor**

HDF 406 *Retirement Planning for Families* - 3 hrs. The intent of this course is to provide families with knowledge of both public and private retirement plans. The public plans include Social Security, Medicare, and Medicaid. The private plans include defined benefit and defined contribution plans and their regulatory provisions. The specifics of the various plans are analyzed as well as non-qualified deferred compensation plans. Finally, issues that individuals and families face in retirement, such as lifestyle choices and medical issues are discussed. **Prerequisites: HDF 301 or consent of instructor**

HDF 407 *Estate Planning for Families* – 3hrs. The course focuses on the efficient conversation and transfer of wealth, consistent with the family's goal. It is a study of the legal, tax, financial and non-financial aspects of this process, covering topics such as trusts, wills probate, advanced directives, charitable giving, wealth transfers and related taxes. **Prerequisites: HDF 301, HDF 305, HDF 315, HDF 405, and HDF 406 or consent of instructor**

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. A course providing 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. Provided are 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 and making use of innovations and technology in the teaching-learning process. The course also provides for the development and use of appropriate evaluation tools and techniques. **Prerequisites: FCS 101 and FCS 303** (Offered Fall, Even Years)

FCS 411 *Honors Courses in Family and Consumer Sciences* - 3 hrs. A special problems course for academically accelerated students which explores issues and trends in specialized areas, with some opportunity for research. Open to majors. **Prerequisites: Senior standing and G.P.A. of 3.3 or above** (On Hold)

FCS 420 *Senior Seminar* - 1 hr. A course which 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)

FCS 495 *Internship in FCS* - 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)

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 economic 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 concentrations within the Nutrition and Hospitality Management program are General Dietetics and Hospitality Management. The General Dietetics concentration is accredited as a Didactic Program in Dietetics (DPD) by the American Dietetic Association (ADA) and qualifies the student for admission to an accredited Dietetic Internship to become a registered dietitian. The DPD Program is accredited by the Commission on Accreditation for Dietetics Education (CADE) of the American Dietetic Association, 216 West Jackson Boulevard, Chicago 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;
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 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 complete at least 500 hours of practical work in Nutrition and Hospitality Management 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

126 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]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 **OR**	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.	3
FCS	101	Intro. to the Profession	1				16
			17				

[1]ENG 103 may be taken by international students

[2]ENG 104 may be taken by international students.

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	203	World Literature I **OR**	3	ENG	204	World Literature II **OR**	3
ENG	201	Survey of English Lit. I	(3)	ENG	202	Survey of English Lit. II	(3)
		Natural /Physical Sc.Elective	4	CHE	112	Natural/Physical Sc.Elective	4
ECO	200	Basic Economics	3	SOC	201	Sociology **OR**	3
NHM	201L	Science of Food Prep.	3	HDF	201	Family Relations	(3)
PSY	201	General Psychology	3	AGB	199	Computers in Agriculture **OR**	3
			16	MDT	252	Auto CAD for Apparel	(3)
				NHM	301L	Food Service Operations I	3
							16

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
HDF	314	Family & Society	3	ENG	205	General Speech	3
MKT	315	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	FAS	312	Food Service Health Mgt.	1
NHM	302L	Food Service Operations II	3			Hospitality Electives	3
			15	HDF	312	Family Economics/Resource Management	3
							16

Summer

NHM 402L Nutrition and Hospitality Management Internship 4 hrs.

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
MGT	207	Legal Environment & Ethics	3	FIN	313	Business Finance	3
NHM	403	Quantity Food Mgmt.	3	MGT	433	Human Resource Mgmt.	3
NHM	414	Hospitality Management Seminar	1	NHM	409L	Experimental Foods	3
		Hospitality Electives	6			Hospitality Electives	3
			13	FCS	420	Senior Seminar	1
							13

NUTRITION AND HOSPITALITY MANAGEMENT MAJOR

General Dietetics Concentration

133 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]ENG	101	Composition I	3	HIS	101	World History I	3
NHM	103	Nutrition Today	2	CHE	102	General Chemistry I	3
ART	101	Art Appreciation **OR**	3	CHE	102L	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	3
MTH	112	Pre Calculus Algebra	3				16
CHE	101	General Chemistry I	3				
CHE	101L	General Chemistry I Lab	1				
			17				

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	203	World Literature I **OR**	3	ENG	204	World Literature II **OR**	3
ENG	201	Survey of English Literature I	(3)	ENG	202	Survey of English Lit. II	(3)
BIO	103	Prin of Biology	3	BIO	330	Microbiology	3
BIO	103L	Prin of Biology Lab	1	BIO	330L	Microbiology Lab	1
CHE	301	Organic Chemistry I	3	CHE	302	Organic Chemistry II	3
CHE	301L	Organic Chemistry Lab	1	CHE	302L	Organic Chemistry Lab	1
ECO	200	Basic Economics	3	HDF	314	Family and Society	3
NHM	201L	Science of Food Preparation	3	NHM	301L	Food Service Operations I	3
			17				17

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	3
PSY	201	General Psychology	3	FAS	453L	Agricultural Biochemistry	4
NHM	302L	Food Service Operations II	3	NHM	306L	Maternal & Child Nutrition	3
HDF	312	Family Economic/Resource Management	3	NHM	405	Advanced Human Nutrition	3
CHE	302L	Organic Chemistry II Lab	1				17
			16				

Summer

NHM	402L	Nut. & Hosp Mgmt. Internship	4

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
AGB	199	Computers in Agriculture OR	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	Medical Nutrition Therapy II	3
PSY	403	Educational Psychology	3	NHM	409L	Experimental Foods	3
FAS	403	Food Science Seminar	1	NHM	410	Community Nutrition	3
NHM	407	Medical Nutrition Therapy I	3				13
SPS	430	Biometry	3				
			16				

Hospitality Management Electives:

Course #	Course Title	Sem. Hrs.
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 Operations	3
NHM 412	Special Problems	1-3
MKT 308	Salesmanship	3
ACC 219	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.

Course #		
* NHM 102L	Principles of Nutrition	3
NHM 201L	Science of Food Preparation	3
NHM 202	Introduction to Hospitality Management	3
NHM 206	Facilities Planning	3
NHM 301L	Food Service Operations I	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 402	Nutrition and Hospitality Management Internship	4
NHM 403	Quantity Food Management	3
NHM 404L	Nutrition for Early and Middle Childhood	3
**NHM405L	Advanced Human Nutrition	3
NHM 406L	International Cuisine and Catering	3
NHM 407	Medical Nutrition Therapy I	3
NHM 408L	Medical Nutrition 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)

NHM 201L *Science of Food Preparation* - 3 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 three major functions in the various types of establishments or operations. **Prerequisite None**. (Offered Spring)

NHM 206 *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 dietaries 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. Emphasis upon 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. The 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 402 *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. A 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 one-hour lectures and one three-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 *Medical Nutrition Therapy I* - 3 hrs. A study of the modification of normal diets in the applications of nutrition and medical therapy. **Prerequisite: NHM 405L**. (Offered Fall)

NHM 408L *Medical Nutrition Therapy II* - 3 hrs. Two, 1-hour lectures and one, 3-hour lab per week. Practical experience in nutrition and medical therapy 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 one-hour lectures and one, three-hour lab per week. A senior level course designed to acquaint the 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 use of this knowledge can be used to improve the quality of food products. **Prerequisite: NHM 201L** (Offered Spring)

NHM 410L *Community Nutrition* - 3 hrs. Two one-hour lectures and one, three-hour lab per week. A study of the nutritional needs of a community and the exploration, identification, and analysis of nutritional needs of various target groups such as schools, elderly, 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 which requires students to 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 the minor area of which 6 hours must be at the 300 level or above. Before selecting a minor, students must consult with their academic advisors early in the degree program selection process.

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
IFTSA (AAMU Chapter) / 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 financial assistance provided by federal and state governments and AAMU's institutional aid programs, there are School of Agricultural and Environmental Sciences, and Department of Food and Animal Sciences 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.

SPECIAL FEES – PER SEMESTER

(Non-Refundable)

Course #	*Course Title*	*Fees*
FAS 401L	Food Microbiology	20.00
FAS 407L	Food Chemistry	20.00
FAS 408L	Food Analysis	20.00
FAS 430L	Physiology of Reproduction	20.00
FAS 453L	Agricultural Biochemistry	20.00
FAS 461L	Food Engineering	20.00
FAS 472L	Food Processing	20.00

FOOD SCIENCE AND TECHNOLOGY MAJOR WITH MINOR IN CHEMISTRY

128 Credits Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem Hrs.
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]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	103	Principles of Biology Lab	1
CHE	101L	General Chemistry I Lab	1	CHE	102	General Chemistry II	3
FAS	102	Intro to Food Science	3	CHE	102L	General Chemistry II Lab	1
			14	FAS	101	Foods for Life	2
							16

[1]ENG 103 may be taken by international students
[2]ENG 104 may be taken by international students

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem Hrs.
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 **or**	3	FAS	351	Nutrition & Metabolism	3
MUS	101	Music Appreciation	(3)	CHE	221	Analytical Chemistry	3
		[3]Social Science	3	CHE	221L	Analytical Chemistry Lab	1
			15				17

[3]UPL 103, PSY 201, SOC 201, or GEO 213

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem.Hrs.
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	4
FAS	402	Meat Science & Tech. **or**	(3)				18
FAS	422	Poultry Products Tech.	3				
			18				

Senior Year

First Semester			Sem.Hrs.	Second Semester			Sem.Hrs
NRE	430	Biometry	3	FAS	403	Seminar	1
FAS	401L	Food Microbiology	4	FAS	408L	Food Analysis	4
FAS	407L	Food Chemistry	4	FAS	472L	Food Processing	4
FAS	461L	Food Engineering	4	FAS	490	Food Science Capstone	3
			15	FAS		Elective	3
							15

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

Minor	Total Hours	Courses			Sem. Hrs.
Animal Science	129	FAS	112	Introduction to Animal Science	3
		FAS	352	Feeds and Feeding	3
		FAS	353	Animal Breeding and Genetics	3
				in place of FAS elective	
Business	135	ACC	203	Introduction to Accounting I	3
		ACC	204	Introduction to Accounting II	3
		MKT	315	Principles of Marketing	3
		ECO	232	Principles of Microeconomics	3
		MGT	315	Principles of Management	
				in place of FAS Elective	3
Nutrition	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

Course #		Course Title	Sem.Hrs.
FAS	112	Introduction to Animal Science	3
FAS	312	Food Service Health Management	1
FAS	405	Special Problems	2-3
FAS	442	Fruits, Vegetables, Cereal Products	3
FAS	450	Regulations of Food Safety	3

ANIMAL SCIENCE MAJOR WITH MINOR IN CHEMISTRY

126 Credits Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	FAS	101	Foods for Life	2
[1]ENG	101	Composition I	3	[2]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	3	CHE	102L	General Chemistry II Lab	1
BIO	103	Principles of Biology	3	ART	101	Art Appreciation **or**	(3)
BIO	103L	Principles of Biology Lab	1	MUS	101	Music Appreciation	3
			18				18

[1]ENG 103 may be taken by international students.
[2]ENG 104 may be taken by international students.

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
MTH	125	Calculus I	4	HIS		History	3
FAS	325	Fundamentals of Poultry Sci	3	PHY	103	General Physics I	4
FAS	351	Nutrition & Metabolism	3	AGB	199	Computers in Ag.	3
CHE	221	Analytical Chem. I	3	FAS	352	Feeds and Feeding	3
CHE	221L	Analytical Chem. I Lab	1				16
			17				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	205	General Speech	3	CHE	302	Organic Chemistry II	3
CHE	301	Organic Chemistry I	3	CHE	302L	Organic Chem. II Lab	1
CHE	301L	Organic Chemistry I Lab	1	AGB	322	Farm Management	3
		[3]Social Science	3	FAS	354	Beef Cattle Production	3
FAS	311	Fundamentals of Dairy Sci.	3	ECO	200	Basic Economics	3
FAS	353	Animal Breeding & Genetics	3				13
			16				

[3]UPL 103, PSY 201, SOC 201, or GEO 213

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
NRE	430	Biometry	3	FAS	492	Animal Science Capstone	3
FAS	355	Livestock Judging	3	FAS	408L	Food Analysis	4
FAS	356	Swine Production	3	FAS	430L	Reproductive Phys.	4
FAS	403	Seminar	1	FAS	453L	Agricultural Biochem.	4
FAS		Elective	3				15
			13				

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

Minor	*Total Hours*	*Courses*			*Sem. Hrs.*
Agribusiness	127	AGB	323	Agricultural Marketing in place of CHE 302 and CHE 302L	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
Food Science	132	BIO	330	Microbiology	3
		BIO	330L	Microbiology Lab (Both above courses in place of AGB 322 Farm Management)	1
		FAS	306	Sensory Evaluation	3
		FAS	401L	Food Microbiology	4
		FAS	407L	Food Chemistry	4
		FAS	461L	Food Engineering The above three courses are in place of FAS 311, FAS 352, FAS 353, FAS 430L	4

Free Electives

Course #		*Course Title*	*Sem.Hrs.*
FAS	326	Poultry Production & Management	3
FAS	402	Meat Science & Tech.	3
FAS	422	Poultry Products Tech.	3
FAS	450	Regulations of Food Safety	3
FAS	405	Special Problems	2-3

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. **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 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* - 3hrs. 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)

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 and science**. 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 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: Bio 103, Senior standing or Consent of Instructor** (Offered Spring)

FAS 442 *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. 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**

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 NATURAL RESOURCES AND ENVIRONMENTAL SCIENCES

200 Carver Complex Thomas Wing Annex
Department Chair: Dr.Teferi Tsegaye (teferi.tsegaye@aamu.edu)
256-372-4214

MISSION STATEMENT

The Department of Natural Resources and Environmental Sciences is committed to the preparation of students and all citizens of Alabama for life in the global community through research, teaching, and outreach activities supporting NRES systems that foster viable communities, a diversified economy, and a healthy environment.

VISION STATEMENT

The Department of Natural Resources and Environmental Sciences will actively help Alabama manage its resources, ensure a sustainable environment, strengthen its communities, and diversify its economy, and will be the premier resource for Research, Teaching, and Outreach related to disciplines that encompass Natural Resources and Environmental Sciences.

INTRODUCTION

The Department of Natural Resources and Environmental Sciences (NRES) offers degree programs in Plant Science (Plant Science & Molecular Genetics Program), Environmental Science (Environmental, Soil & Water Science Program), and Forestry (Forestry, Ecology & Wildlife Program). Students who choose to major in Plant Science may specialize in either Horticulture or Crop Science. In the Environmental Science degree program, students can specialize in Soil Science or Environmental Science or Environmental Health Science. 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 or program coordinators 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 program 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, Wildlife Biology, or Fisheries 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 Natural Resources & Environmental Sciences 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 & Molecular Genetics Program (PSMGP) offers the degree in Plant Science, which has 2 majors. 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 (NRE prefix) required for a degree.

Environmental Science Degree

The Environmental, Soil & Water Science Program (ESWSP) offers the degree in Environmental Science, which has 2 majors. The major in Soil Science gives the student a strong background in the physical and biological sciences, along with its 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 (NRE prefix) required for a degree.

The concentration in ***Environmental Health Science*** affords students with the study of human activities and the effects of these on our ecosystem. Environmental health scientists safeguard and improve the quality of food, shelter, air, water and other natural resources.

Minor in Remote Sensing (RS) and Geographic Information Systems (GIS)

This minor in RS/GIS supports the Environmental, Soil and Water Science Program, the *Forestry, Ecology, and Wildlife Program* (FEWP and the Plant Science & Molecular Genetics Program (PSMGP) The RS/GIS minor is designed for students with diverse natural science and social science backgrounds who desire specialized training in the use of remote sensing and GIS in environmental and natural resource analysis and management. Students are trained for careers in the private, public and non-profit sectors where there is increasing demand for professionals with advanced technical skills who can organize and analyze spatial environmental data.

Forestry Degree

Mission Statement

The *Forestry, Ecology, and Wildlife Program* (FEWP), as the part of the total university, seeks to reflect the mission of the traditional land-grant institution, combining education, research, and service to the public and the forestry profession. Alabama A&M University remains committed to being the nation's premiere institution for preparing professionally trained African–American foresters. The undergraduate degree program is designed to educate broad based, ecologically sensitive resource managers. Such a background will enable graduates to succeed as professional land managers and practice conservation of forest and other natural resources. Faculty and students in the FEWP conduct basic and applied research of forest ecosystems and resources to provide needed information to land managers, resource planners, scientists, and society. As part of a historically black college or university, the FEWP addresses the needs of capable students who as a group are underrepresented in the forestry profession, as well as the needs of minority landowners that have historically been underserved by the forestry profession.

Alabama A&M University's professionally accredited (by the Society of American Foresters) forestry program 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. The FEWP offers the forestry degree; 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 preparation for graduate school or who are interested in a minor 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 (NRE prefix) required for a degree.

Minor in Wildlife Biology

This minor supports Alabama A&M University's Forestry program within the Forestry, Ecology & Wildlife Program.. It fulfills a major Program objective, namely, to increase the number of underrepresented minorities in scientific fields needed by various state and federal agencies that manage wildlife resources.

Minor in Fisheries

This minor supports Alabama A&M University's Forestry program within the Forestry Ecology and Wildlife Program. It fulfills a major Center objective, namely, to increase the number of underrepresented minorities in scientific fields needed by various state and federal agencies that manage fisheries and wildlife resources.

FINANCIAL ASSISTANCE/SCHOLARSHIPS

In addition to financial support available from university (need and merit-based) support programs, opportunities exist for student research 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, private forestry and biotech and other agribusiness industries.

STUDENT/PROFESSIONAL ORGANIZATIONS

Agronomy Club
Alpha Zeta
Environmental Science Club
Water Resources Club
Graduate Student Association – Department of Natural Resources and Environmental Sciences
Horticulture Club
Minorities in Agriculture, Natural Resources, and Related Sciences (MANNRS)
Society of American Foresters – Student Chapter
Association of Southern Forestry Clubs
Strategies for Ecology Education, Development and Sustainability (SEEDS) – Campus Ecology Chapter

SPECIAL PROGRAMS/AWARDS/RECOGNITIONS

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

GRADUATION REQUIREMENTS

University General Education Curriculum- Please refer to the General Education Requirements section of the Undergraduate Bulletin.

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 (**see General Education Requirements in the general information section of the Undergraduate Bulletin**); complete all courses as outlined in the curriculum with a minimum cumulative grade point average of 2.0; **complete all core courses in the major with a minimum cumulative grade point average of 2.0. All core courses for any major must be completed with a grade of "C" or better.** Core courses are the departmental courses (NRE prefix) required for a degree.

PROGRAM CURRICULA
[PLANT SCIENCE – HORTICULTURE MAJOR]

[128] Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	113	Pre-Calculus Trig.[2]	3
MTH	112	Pre-Calculus Algebra[2]	3	CHE	102	General Chemistry II	3
CHE	101	General Chemistry I	3	CHE	102	General Chemistry II Lab	1
CHE	101	General Chemistry I Lab	1	NRE	170	Intro to Environ. Science	3
NRE	101	Intro to Plant Science	4	HIS		History[3]	3
			15				16

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
		Literature[5]	3			Literature[5]	3
BIO	101	General Biology I	3			Health Science[4]	2
BIO	101	General Biology I Lab	1			Social Science [3, 6]	3
		Social Science [3, 6]	3	AG	199	Computers in Agriculture	3
NRE	251	Intro to Soil Science	4	NRE		Required Courses	3
NRE		Horticultural Electives	3	NRE		Horticultural Electives	3
			17				17

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
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	203	General Botany I Lab	1	BIO	204	General Botany II Lab	1
BIO	311	Principles of Genetics I	3	MUS	101	Music Appreciation **or**	3
BIO	311	Principles of Genetics I Lab	1	ART	101	Art Appreciation	**3**
NRE		Required Courses	3	NRE		Required Courses	3
ENG	205	General Speech	3	NRE		Horticultural Electives	3
			17				16

Senior Year

First Semester		*Sem. Hrs.*	*Second Semester*		*Sem. Hrs.*
NRE	Required Courses	6	NRE	Required Courses	6
NRE	Horticultural Electives	3	NRE	Horticultural Electives	3
	Advisor Approved Electives	6		Advisor Approved Electives	6
		15			15

[1]Must earn grade of C or better.
[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.
[3]HIS 101, HIS 102, HIS 201, HIS 202, HIS 204
[4]FAS 101, HED 101, NHM 103
[5]ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404
[6]PHL 201, PSY 201, SOC 201, or GEO 213

Requirements for Plant Science Degree, Horticulture Major (48-49 semester credit hours):
Required Plant Science Courses:

(For students choosing the Horticulture Major, each required course must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
NRE 101	Introduction to Plant Science	4
NRE 170	Introduction to Environmental Science	3
NRE 251	Introduction to Soil Science	4
NRE 411	Weed Science and Herbicide Technology	3
NRE 421	Plant Propagation	3
NRE 430	Biometry	3
NRE 432	Plant Disease Diagnosis	4
NRE 441	Phyto-physiology	4
NRE 477	Insect Biology and Pest Management	3
NRE 491	Seminar	1

Restricted Plant Science Electives (Five courses must be taken):
(For students choosing the Horticulture Major, each restricted elective course selected must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
NRE 401	Floral and Garden Center Management	4
NRE 422	Landscape Design and Construction	4
NRE 423	Ornamentals I- Trees and Shrubs	3
NRE 425	Lawn and Turf Management	3
NRE 427	Ornamentals II- Flowers and Foliage Plants	3
NRE 428	Fruit and Vegetable Production	3
NRE 495	Irrigation and Drainage Systems	3

[PLANT SCIENCE, CROP SCIENCE MAJOR]

[128] Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	113	Pre-Calculus Trig.[2]	3
MTH	112	Pre-Calculus Algebra[2]	3	CHE	102	General Chemistry II	3
CHE	101	General Chemistry I	3	CHE	102	General Chemistry II Lab	1
CHE	101	General Chemistry I Lab	1	NRE	170	Intro to Environ. Science	3
NRE	101	Intro to Plant Science	4	HIS		History[3]	3
			15				16

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
		Literature[5]	3			Literature[5]	3
BIO	101	General Biology I	3			Health Science[4]	2
BIO	101	General Biology I Lab	1			Social Science [3, 6]	3
CHE	201	Analytical Chemistry I	3	AG	199	Computers in Agriculture	3
CHE	201	Analytical Chemistry I Lab	1	NRE		Required Courses	6
		Social Science [3, 6]	3				17
NRE	251	Introduction to Soil Science	4				
			18				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
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	203	General Botany I Lab	1	BIO	204	General Botany II Lab	1
BIO	311	Principles of Genetics I	3	MUS	101	Music Appreciation **or**	3
BIO	311	Principles of Genetics I Lab	1	ART	101	Art Appreciation	**3**
NRE		Required Courses	3	NRE		Required Courses	6
ENG	205	General Speech	3				16
			17				

Senior Year

First Semester		*Sem. Hrs.*	*Second Semester*		*Sem. Hrs.*
NRE	Required Courses	8	NRE	Required Courses	8
	Advisor Approved Electives	7		Advisor Approved Electives	6
		15			14

[1]Must earn grade of C or better.
[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.
[3]HIS 101, HIS 102, HIS 201, HIS 202, HIS 204
[4]FAS 101, HED 101, NHM 103
[5]ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404
[6]PHL 201, PSY 201, SOC 201, or GEO 213

Requirements for Plant Science Degree, Crop Science Major (46 semester credit hours):

Required Plant Science Courses:
(For students choosing the Crop Science Major, each required course must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
NRE 101	Introduction to Plant Science	4
NRE 170	Introduction to Environmental Science	3
NRE 251	Introduction to Soil Science	4
NRE 410	Forage Management	3
NRE 411	Weed Science and Herbicide Technology	3
NRE 417	Sustainable Crop Production	3
NRE 430	Biometry	3
NRE 431	Principles of Plant Breeding	3
NRE 432	Plant Disease Diagnosis	4
NRE 440	Seed Production Practices	4
NRE 441	Phyto-physiology	4
NRE 470	Soil, Plant and Water Analysis	4
NRE 477	Insect Biology and Pest Management	3
NRE 491	Seminar	1

Restricted Plant Science Electives (Must select with Advisor's consent) :
(For students choosing the Crop Science Major, each restricted elective course selected must be completed with a grade of "C" or better)

NRE 365	Introduction to Geographic Information Systems	3
NRE 370	Natural Resource Management	3
NRE 406	Soil Microbiology	4
NRE 425	Lawn and Turf Management	3
NRE 433	Introduction to Molecular Genetics	3
NRE 433L	Introduction to Molecular Genetics Laboratory	1
NRE 435	Introduction to Bioinformatics	4
NRE 452	Soil Fertility and Fertilizers	3
NRE 494	Soil and water Conservation Applications	4
NRE 495	Irrigation and Drainage Systems	3

[ENVIRONMENTAL SCIENCE, SOIL SCIENCE MAJOR]

[128] Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	113	Pre-Calculus Trig.[2]	3
MTH	112	Pre-Calculus Algebra[2]	3	CHE	102	General Chemistry II	3
CHE	101	General Chemistry I	3	CHE	102	General Chemistry II Lab	1
CHE	101	General Chemistry I Lab	1	NRE	170	Intro to Environ. Science	3
NRE	101	Intro to Plant Science	4	HIS		History[3]	3
			15				16

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
		Literature[5]	3			Literature[5]	3
BIO	101	General Biology I	3	MTH	120	Calculus and Its Appls **or**	3
BIO	101	General Biology I Lab	1	MTH	125	Calculus	**3**
CHE	201	Analytical Chemistry I	3	BIO	102	General Biology II	3
CHE	201	Analytical Chemistry I Lab	1	BIO	102	General Biology II Lab	1
		Social Science [3, 6]	3			Social Science [3, 6]	3
NRE	251	Intro to Soil Science	4			Health Science[4]	2
			18	AG	199	Computers in Agriculture	3
							18

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	304	Advanced Composition	3	ENG	205	General Speech	3
CHE	301	Organic Chemistry I	3	CHE	302	Organic Chemistry II	3
CHE	301	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 **or**	3	NRE		Required Courses	7
ART	101	Art Appreciation	**3**				17
			14				

Senior Year

First Semester		*Sem. Hrs.*	*Second Semester*		*Sem. Hrs.*
NRE	Required Courses	9	NRE	Required Courses	12
	Advisor Approved Electives	6		Advisor Approved Electives	3
		15			15

[1]Must earn grade of C or better.
[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.
[3]HIS 101, HIS 102, HIS 201, HIS 202, HIS 204
[4]FAS 101, HED 101, NHM 103
[5]ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404
[6]PHL 201, PSY 201, SOC 201, or GEO 213

Requirements for Environmental Science Degree, Soil Science Major (40 semester credit hours):

Required Environmental Science Courses:
(For students choosing the Soil Science Major, each required course must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
NRE 101	Introduction to Plant Science	4
NRE 170	Introduction to Environmental Science	3
NRE 251	Introduction to Soil Science	4
NRE 350	Soil Morphology, Genesis, and Classification	4
NRE 351	Soil and Water Conservation	3
NRE 406	Soil Microbiology	4
NRE 417	Sustainable Crop Production	3
NRE 430	Biometry	3
NRE 452	Soil Fertility and Fertilizers	3
NRE 461	Soil Physics	4
NRE 470	Soil, Plant, and Water Analysis	4
NRE 491	Seminar	1
NRE 494	Soil and Water Conservation Applications	4
NRE 495	Irrigation and Drainage Systems	3

[ENVIRONMENTAL SCIENCE, ENVIRONMENTAL SCIENCE MAJOR]

[128] Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MT	113	Pre-Calculus Trig.[2]	3
MT	112	Pre-Calculus Algebra[2]	3	CHE	102	General Chemistry II	3
CHE	101	General Chemistry I	3	CHE	102	General Chemistry II Lab	1
CHE	101	General Chemistry I Lab	1	NRE	170	Intro to Environ. Science	3
NRE	101	Intro to Plant Science	4	HIS		History[3]	3
			15				16

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
		Literature[5]	3			Literature[5]	3
BIO	101	General Biology I	3	MTH	120	Calculus and Its Appls **or**	3
BIO	101	General Biology I Lab	1	MTH	125	Calculus	**4**
CHE	201	Analytical Chemistry I	3	BIO	102	General Biology II	3
CHE	201	Analytical Chemistry I Lab	1	BIO	102	General Biology II Lab	1
GEO	213	Principles of Geography	3			Social Science[3, 6]	3
NRE	251	Intro to Soil Science	4			Health Science[4]	2
			18	AG	199	Computers in Agriculture	3
							18

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	304	Advanced Composition	3	ENG	205	General Speech	3
CHE	202	Analytical Chemistry II	3	PHY	103	General Physics	4
CHE	202	Analytical Chemistry II Lab	1	CHE	302	Organic Chemistry II	3
CHE	301	Organic Chemistry I	3	CHE	302	Organic Chemistry II Lab	1
CHE	301	Organic Chemistry I Lab	1	ECO	231	Principles of Macroeconomics	3
NRE		Required Courses	4	NRE		Required Courses	3
MUS	101	Music Appreciation **or**	3				17
ART	101	Art Appreciation	**3**				
			18				

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*		*Sem. Hrs.*
BIO	330	Microbiology	3	NRE	Required Courses	6
BIO	330	Microbiology Lab	1		Environ. Science Electives	6
NRE		Required Courses	8			12
		Advisor Approved Electives	2			
			14			

[1]Must earn grade of C or better.
[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.
[3]HIS 101, HIS 102, HIS 201, HIS 202, HIS 204
[4]FAS 101, HED 101, NHM 103
[5]ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404

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

Required Environmental Science Courses:
(For students choosing the Environmental Science Major, each required course must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
NRE 101	Introduction to Plant Science	4
NRE 170	Introduction to Environmental Science	3
NRE 251	Introduction to Soil Science	4
NRE 406	Soil Microbiology	4
NRE 430	Biometry	3
NRE 451	Environmental Toxicology	3
NRE 453	Hazardous Waste Management	3
NRE 470	Soil, Plant, and Water Analysis	4
NRE 472	Soil, Water, and Air Pollution	3
NRE 491	Seminar	1

Restricted Environmental Science Electives (Must select six hours):
(For students choosing the Environmental Science Major, each restricted elective course selected must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
BIO 324	Ecotoxicology	3
NRE 365	Introduction to Geographic Information Systems	3
NRE 450	Earth Science	3
NRE 486	Environmental Policy and Law	3
UP 442	Planning and the Environment	3
NRE 475	Principles of Wetlands	3
NRE 452	Soil Fertility and Fertilizers	3
NRE 478	GIS, Spatial Analysis, and Modeling	4
NRE 494	Soil and Water Conservation Applications	4
NRE 495	Irrigation and Drainage Systems	3

Required Environmental Science Courses for **Environmental Health Sciences** Concentration: 21 semester credit hours.

(For students choosing the Environmental Health Science Concentration, each required course must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
NRE 223/BIO223	Introduction to Environmental Health Sciences	3
NRE 170	Introduction to Environmental Science	3
NRE 251	Introduction to Soil Science	4
NRE 400/BIO 401	Epidemiology	3
NRE 486	Environmental Policy and Law	3
NRE 406	Soil Microbiology	4
NRE 430	Biometry	3
NRE 451	Environmental Toxicology	3
NRE 453	Hazardous Waste Management	3
NRE 470	Soil, Plant, and Water Analysis	4
NRE 472	Soil, Water, and Air Pollution	3
NRE 493/BIO 490	Environmental Health Internships	3
NRE 365	Introduction to Geographic Information Systems (GIS)	3
NRE 491	Seminar	1

Requirements for Minor in Remote Sensing and Geographic Information Systems (18 semester credit hours):

Required Courses

Course	Course Title	Sem. Hrs.
NRE 365	Introduction to Geographic Information Systems	3
NRE 465	Applications of Geostatistics	3
NRE 476	Remote Sensing of the Environment	4

Restricted Electives (a minimum of 8 semester credit hours must be chosen):

Course	Course Title	Sem. Hrs.
NRE 366	Climate and Global Change	4
NRE 471	Aerial Photo-Interpretation	3
NRE 481	Hydrology and Watershed Management	3
NRE 478	GIS, Spatial Analysis, and Modeling	4
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
MTH383	Numerical Analysis	

[FORESTRY, FOREST MANAGEMENT MAJOR]

[128] Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	113	Pre-Calculus Trig.[2]	3
MTH	112	Pre-Calculus Algebra[2]	3	CHE	102	General Chemistry II	3
CHE	101	General Chemistry I	3	CHE	102	General Chemistry II Lab	1
CHE	101	General Chemistry I Lab	1	BIO	101	General Biology I	3
NRE	281	Intro to Forestry	3	BIO	101	General Biology I Lab	1
			14	HIS		History[3]	3
							17

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
		Literature[5]	3			Literature[5]	3
NRE	101	Introduction to Plant Science	4	ENG	205	General Speech	3
		Social Science [3, 6]	3			Social Science [3, 6]	3
NRE	251	Intro to Soil Science	4			Health Science[4]	2
NRE	282	Dendrology	3	ECO	232	Principles of Microeconomics	3
			17	AG	199	Computers in Agriculture	3
							17
		(Summer)					
NRE	380	**Forestry Field Techniques**	6				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*		*Sem. Hrs.*
ENG	304	Advanced Composition	3	NRE	Required Courses	8
NRE	365	Introduction to GIS	3	NRE	Required Courses	8
MUS	101	Music Appreciation **or**	3			16
ART	101	Art Appreciation	**3**			
NRE		Required Courses	9			
			18			

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*		*Sem. Hrs.*
MGT	315	Principles of Management **or**	3	NRE	Required Courses	7
AGB	421	Agribusiness Management	**3**		Advisor Approved Electives	4
NRE		Required Courses	9			11
			12			

[1]Must earn grade of C or better.
[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.
[3]HIS 101, HIS 102, HIS 201, HIS 202, HIS 204
[4]FAS 101, HED 101, NHM 103
[5]ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404
[6]PHL 201, PSY 201, SOC 201, or GEO 213

Requirements for Forestry Degree, Forest Management Major (64 semester credit hours):

Required Forestry Courses:

(For students choosing the Forest Management Major, each required course must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
NRE 101	Introduction to Plant Science	4
NRE 251	Introduction to Soil Science	4
NRE 281	Introduction to Forestry	3
NRE 282	Dendrology	3
NRE 365	Introduction to Geographic Information Systems	3
NRE 370	Natural Resource Management	3
NRE 371	Forest Mensuration	4
NRE 372	Forest Fire Ecology & Management	2
NRE 374	Silvics	3
NRE 376	Forest Pest Management	3
NRE 375	Silviculture	4
NRE 380	Forestry Field Techniques	6
NRE 381	Wood Products	3
NRE 387	Wildlife-Forestry Relationships	3
NRE 430	Biometry	3
NRE 471	Aerial Photo-Interpretation	3
NRE 480	Natural Resource Policy	3
NRE 483	Forest Resource Economics	3
NRE 489	Forest Ecological Management	3
NRE 491	Seminar	1

[FORESTRY, FOREST SCIENCE MAJOR]

[128] Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	113	Pre-Calculus Trig.[2]	3
MTH	112	Pre-Calculus Algebra[2]	3	CHE	102	General Chemistry II	3
CHE	101	General Chemistry I	3	CHE	102	General Chemistry II Lab	1
CHE	101	General Chemistry I Lab	1	BIO	101	General Biology I	3
NRE	281	Intro to Forestry	3	BIO	101	General Biology I Lab	1
			14	HIS		History[3]	3
							17

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
		Literature[5]	3			Literature[5]	3
NRE	101	Introduction to Plant Science	4	ENG	205	General Speech	3
		Social Science[3, 6]	3			Social Science[3, 6]	3
NRE	251	Intro to Soil Science	4			Health Science[4]	2
NRE	282	Dendrology	3	ECO	232	Principles of Microeconomics	3
			17	AG	199	Computers in Agriculture	3
							17

(Summer)

NRE	380	Forestry Field Techniques	6

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	304	Advanced Composition	3	MTH	125	Calculus I	4
MUS	101	Music Appreciation **or**	3	NRE		Required Courses	11
ART	101	Art Appreciation	**3**	NRE		Forestry Electives	2
NRE		Required Courses	3				17
NRE		Forestry Electives	3				
		Advisor Approved Electives	3				
			15				

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
NRE		Required Courses	6	NRE		Required Courses	7
NRE		Forestry Electives	3	NRE		Forestry Electives	3
		Advisor Approved Electives	3			Advisor Approved Electives	3
			12				13

[1]Must earn grade of C or better.
[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.
[3]HIS 101, HIS 102, HIS 201, HIS 202, HIS 204
[4]FAS 101, HED 101, NHM 103
[5]ENG 201, ENG 202; ENG 203, ENG 204; ENG 301, or ENG 404
[6]UPL 103, PSY 201, SOC 201, or GEO 213

Requirements for Forestry Degree, Forest Science Major (58 semester credit hours):
Required Forestry Courses:

(For students choosing the Forest Science Major, each required course must be completed

with a grade of "C" or better)

Course	Course Title	Sem. Hrs.
NRE 101	Introduction to Plant Science	4
NRE 251	Introduction to Soil Science	4
NRE 281	Introduction to Forestry	3
NRE 282	Dendrology	3
NRE 371	Forest Mensuration	4
NRE 374	Silvics	3
NRE 376	Forest Pest Management	3
NRE 375	Silviculture	4
NRE 380	Forestry Field Techniques	6
NRE 430	Biometry	3
NRE 480	Natural Resource Policy	3
NRE 483	Forest Resource Economics	3
NRE 489	Forest Ecological Management	3
NRE 491	Seminar	1

Restricted Forestry Electives (11 hours must be selected):

(For students choosing the Forest Science Major, each restricted elective course selected must be completed with a grade of "C" or better)

Course #	Course Title	Sem. Hrs.
NRE 286	Wildlife Biology & Identification	3
NRE 365	Introduction to Geographic Information Systems	3
NRE 370	Natural Resource Management	3
NRE 372	Forest Fire Ecology & Management	2
NRE 381	Wood Products	3
NRE 385	Forest Recreation	3
NRE 386	Principles of Wildlife Management	3
NRE 387	Wildlife-Forestry Relationships	3
NRE 432	Plant Disease Diagnosis	4
NRE 441	Phyto-physiology	4
NRE 452	Soil Fertility and Fertilizers	3
NRE 471	Aerial Photo-Interpretation	3
NRE 477	Insect Biology and Pest Management	3
NRE 481	Hydrology and Watershed Management	3
NRE 482	Forest Tree Improvement	3
NRE 484	Ecological Processes	3
NRE 486	Environmental Policy and Law	3

Requirements for Minor in Wildlife Biology (21 semester credit hours):

Required Courses

Course	Course Title	Sem. Hrs.
NRE 286	Wildlife Biology & Identification	3
NRE 386	Principles of Wildlife Management	3
NRE 387	Wildlife-Forestry Relationships	3

Restricted Electives (a minimum of 12 hours must be chosen):

BIO 201/201L	Invertebrate Zoology & Lab	4
BIO 202/202L	Comparative Vertebrate Anatomy & Lab	4
BIO 205/205L	Ecology & Lab	4
BIO 311/311L	Genetics & Lab	4
BIO 321/321L	Introduction to Parasitology & Lab	4
BIO 340/340L	Developmental Biology & Lab	4

BIO 402/402L	Limnology & Lab	4
BIO 411/411L	Cell Biology & Lab	4
BIO 481	Research in Biology	Credits arranged
NRE 475	Principles of Wetlands	3
NRE 477	Insect Biology & Pest Management	3
NRE 484	Ecological Processes	3
NRE 489	Forest Ecological Management	3
NRE 490	Special Problems in Plant & Soil Science	Credits arranged

Requirements for Minor in Fisheries (18 semester credit hours):
Required Courses

Course	Course Title	Sem. Hrs.
NRE 388	Principles of Fisheries Science	3
NRE 389	Fisheries Management and Aquaculture	3

Restricted Electives (a minimum of 12 hours must be chosen):

BIO 201/201L	Invertebrate Zoology & Lab	4
BIO 202/202L	Comparative Vertebrate Anatomy & Lab	4
BIO 205/205L	Ecology & Lab	4
BIO 311/311L	Genetics & Lab	4
BIO 321/321L	Introduction to Parasitology & Lab	4
BIO 340/340L	Developmental Biology & Lab	4
BIO 402/402L	Limnology & Lab	4
BIO 411/411L	Cell Biology & Lab	4
BIO 481	Research in Biology credits arranged	
NRE 475	Principles of Wetlands	3
NRE 477	Insect Biology & Pest Management	3
NRE 484	Ecological Processes	3
NRE 489	Forest Ecological Management	3
NRE 490	Special Problems in Plant & Soil Science credits arranged	

COURSE DESCRIPTIONS

NRE 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)

NRE 170 *Introduction to Environmental Science* - 3 hrs. 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. **Prerequisite: None** (Offered Spring)

NRE 223 *Introduction to Environmental Health Science* - 3 hrs. The fundamental of environmental health, covering environmental control agencies, elements of the environment suffering from pollution, environmental pollutants and their sources, effects of environmental pollution, and methods of pollution control. **Prerequisite: SPS 170, BIO 101, 101L, CHEM 101 and CHEM 101L or Instructor's consent**. Offered Fall and Spring.

NRE 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)

NRE 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 Spring & Fall)

NRE 282 *Dendrology* - 3 hrs. Identification, classification, and taxonomy of the commercially and ecologically important forest plants in the United States. **Prerequisite: None** (Offered Fall)

NRE 286 *Wildlife Biology and Identification* – 3 hrs. Identification, distribution, life history, and behavior of North American amphibians, reptiles, birds and mammals. Emphasis on ecological and zoological aspects of special relevance to management. A laboratory and field course in species identification, techniques of age and sex determination, and behavior analysis. **Prerequisite: none** (Offered Spring)

NRE 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: NRE 251** (Offered Fall, Odd Years)

NRE 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: NRE 251 and junior or senior standing** (Offered Spring, Even Years)

NRE 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)

NRE 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)

NRE 366 *Climate and Global Change* - 4 hrs. Climate and global change; relationships between the sun and the earth; 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. (Offered Summer)

NRE 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)

NRE 371 *Forest Mensurations* - 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: NRE 380 or consent of instructor Co-requisite: NRE 375** (Offered Spring)

NRE 372 *Forest Fire Ecology and Management* – 2 hrs. This course will describe the impacts of fire on various forested ecosystems and describe tools for prediction of both the effects and behavior of forest fires. Fire prevention and management techniques will also be discussed. **Prerequisite: NRE 282, NRE 374** (Offered Spring)

NRE 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: NRE 282** (Offered Fall)

NRE 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: NRE 380 or consent of instructor Co-requisite: NRE 371** (Offered Spring)

NRE 376 *Forest Pest Management* – 3 hrs. An introductory course on the biology, ecology and management of forest pests, with particular emphasis on insects and tree disease pathogens. The course includes a weekly three-hour laboratory, where students develop skills in insect and pathogen identification and learn to recognize pest problems via associated host tree symptoms. **Prerequisite: BIO 101 and BIO 204 or NRE 101** (Offered Spring)

NRE 380 *Forestry Field Techniques* - 6 hrs. A six-week, full-time summer course including timber harvesting techniques, field mensuration, and silvicultural practices. **Prerequisite: NRE 281 or consent of instructor (**Offered Summer)

NRE 381 *Wood Products* - 3 hrs. A study of the physical and chemical composition of wood and the products derived from wood. **Prerequisite: NRE 281** (Offered Fall)

NRE 385 *Forest Recreation* - 3 hrs. An introduction to forest recreation from the planning, policy, legal, and technical standpoints. Campgrounds, picnic areas, trail construction, visitor, 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: NRE 281** (Offered Spring)

NRE 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)

NRE 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: NRE 281** (Offered Spring)

NRE 388 *Principles of Fisheries Science*– 3 hrs. Hands-on introduction to fisheries science. Overview of the nature of fisheries, brief introduction to the physiological ecology of aquatic organisms, methods in the capture and identification of local fishes, introduction to trophic interactions, bioasessment, and habitat and water quality assessment. Fall

NRE 389 *Fisheries Management and Aquaculture – 3 hrs*. Hands-on introduction to the practice of fisheries management and aquaculture. Overview of common and experimental aquaculture methods. Examination of basic fisheries management techniques and experience in fisheries assessment. Spring.

NRE 400 Fundamentals of Epidemiology 3 hrs. Students will learn the fundamentals of epidemiology. Areas of emphasis include epidemiology definitions and practical applications, measures of morbidity and mortality, descriptive epidemiology, observational and experimental study designs, data interpretation issues, infectious disease epidemiology, environmental epidemiology, and chronic disease epidemiology. Prerequisites: CHEM 101 and CHEM 101L,

NRE 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: NRE 101 or consent of instructor** (Offered Spring, Odd Years)

NRE 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, BlO 101L, BIO 102, BIO 102L, BIO 330, and BIO 330L. Seniors and graduate students only** (Offered Spring)

NRE 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: NRE 101 or BIO 204 and BIO 204L (**Offered Spring, Odd Years)

NRE 411 *Weed Science and Herbicide Technology* - 3 hrs. 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. **Prerequisite: NRE 101 or BIO 204 and BIO 204L** (Offered Fall, Odd Years)

NRE 417 *Sustainable Crop Production* – 3 hrs. Principles of sustainable agriculture with modern crop production practices, management of biological, physical, and human resources to optimize field crop production in a sustainable and cost-effective manner. Emerging biotechnologies, precision agriculture, etc. are highlighted. **Prerequisite: NRE 101 or equivalent** (Offered Spring)

NRE 421 *Plant Propagation* - 3 hrs. A study of the principles, processes, methods, and materials involved in sexual and asexual propagation of plants. **Prerequisites: NRE 101 or consent of instructor** (Offered Spring, Odd Years)

NRE 422 *Landscape Design and Construction* - 4 hrs. A study of the principles of landscape design, including symbols, styles, finished drawings, selection and arrangement of plants, sections and elevations design of construction features and computer-aided drawing. **Prerequisite: NRE 423** (Offered Spring, Even Years)

NRE 423 *Ornamentals I – Trees and Shrubs* - 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: NRE 101, or consent of instructor** (Offered Fall, Odd Years)

NRE 425 *Lawn and 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: NRE 101 or equivalent** (Offered Spring, Even Years)

NRE 427 *Ornamentals II – Flowers and Foliage Plants* - 3 hrs. Identification, culture, and use of herbaceous annuals and perennials, bulbs, herbs and ornamental grasses. Flower bed and border preparation and maintenance; selection, installation, and care of tropical foliage plants in interior settings; use of light, plant acclimatization, growing media, fertilizers, containers, and pest control. **Prerequisite: NRE 101 or consent of instructor** (Offered Fall, Even Years)

NRE 428 *Fruit and Vegetable 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: NRE 101 or consent of instructor** (Offered Spring, Even Years)

NRE 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)

NRE 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)

NRE 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)

NRE 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)

NRE 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: NRE 433** (Offered Fall)

NRE 435 *Introduction to Bioinformatics* – 4 hrs. An interdisciplinary course melding information and biological sciences. Structure and function of proteins and nucleic acids; retrieval and interpretation of bioinformation, algorithms and software for sequence alignment, similarity searching of sequence databases. **Prerequisite: General Biology/Biochemistry, some familiarity with computer programming** (Offered Fall)

NRE 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: NRE 101 or NRE 310** (Offered Fall, Even Years)

NRE 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: NRE 101** (Offered Fall).

NRE 445 Bioinformatics Applications. 4 hrs. Analysis of vast amounts of data generated due to the recent advances in genomic technologies such as, high-throughput sequencing, functional genomics and proteomics, is essential for the understanding of biological function and variation. This course emphasizes mastering of various tools used for analyzing DNA, RNA and protein data, understanding of underlying algorithms, and their application to biological problems. Prerequisites: BIO103 or equivalent upon Instructor's consent**.** (Offered Spring)

NRE 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 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 are addressed. **Prerequisite: None** (Offered Fall, Even Years)

NRE 451 *Environmental Toxicology* - 3 hrs. Toxic effects of environmental chemicals on living systems, the chemical and biological characteristics of major pollutants, their origins and uses, and the exposure, transformation and elimination of toxic substances by biological systems. **Prerequisites: CHE 102, CHE 302, or consent of instructor** (Offered Fall, Odd Years)

NRE 452 *Soil Fertility and Fertilizers* - 3 hrs. A study of the relationship of soil chemistry, forms of nutrients in soils, and 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 NRE 251** (Offered Fall, Even Years)

NRE 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)

NRE 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 l0lL, CHE 102, CHE 102L, and NRE 251** (Offered Spring, Odd Years)

NRE 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 NRE 251** (Offered Fall, Even Years)

NRE 465 *Applications of Geostatistics* – 3 hrs. Use of geostatistical models in sampling experimental design, mapping contaminant concentration, risk analysis, remediation, planning and probability analyses. Conceptual development of theory and action in managing natural resources. **Prerequisites: MTH 112, MTH 113, and NRE 430 or equivalent statistics** (Offered Spring, Even Years)

NRE 470 *Soil, Plant, and Water Analysis* - 4 hrs. Chemical and instrumental methods in the analysis of soil, plant, and water samples; experimental and descriptive inorganic and organic analyses; atomic and molecular absorption and emission spectroscopy, mass spectrometry, X-ray diffraction and fluorescence, gas and ion chromatography, and ion-selective electrodes. **Prerequisites: CHE 102, CHE 202 and NRE 251** (Offered Spring, Even Years)

NRE 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)

NRE 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. **Prerequisites: CHE 102, CHE 102L, and NRE 251** (Offered Spring, Even Years)

NRE 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. **Prerequisite: CHE 102, CHE 102L, and NRE 251** (Offered Fall, Even Years)

NRE 476 *Remote Sensing of the Environment I* - 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)

NRE 477 *Insect Biology and Pest Management* - 3 hrs. Biology of insects, 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)

NRE 478 *GIS, Spatial Analysis, and Modeling* **–4 hrs.** This intermediate Geographic Information Systems course prepares students for advanced principles of GIS class. Principles and methods of spatial analysis and their application to different disciplines such as urban planning, environmental science, and natural resource management. Integrate geographic concepts and techniques used in spatial analysis, network analysis and 3D analysis with both raster and vector data structures. **Prerequisite: NRE 365 (Offered Spring)**

NRE 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)

NRE 481 *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)

NRE 482 *Forest Tree Improvement* – 3 hrs. Practical problems, concepts and techniques to genetic improvement of forest trees. **Prerequisite: Consent of instructor** (Offered Spring, Even Years)

NRE 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)

NRE 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: NRE 374 or consent of instructor (**Offered Fall, Odd Years).

NRE 486 *Environmental Policy and Law* - 3 hrs. An understanding of 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).

NRE 488 *Wildlife Techniques:* - 3 hrs. Field and lab procedures for determining sex and age, capture and marking, physiological indices, harvest surveys, population estimation procedures, and habitat evaluation. Includes mapping with geographic information systems, orienteering and field safety. Introduce students to a broad range of methods and equipment used by wildlife professionals to gather information on wild animals and their habitat. In addition, this course will emphasize the characteristics of a particular technique that might make it superior to others in practical situations. Prerequisite: None (Offered Fall)

NRE 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: NRE 371** (Offered Spring)

NRE 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)

NRE 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)

NRE 493 *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. Courses will be determined between home institution advisor, student, and host institution mentor. **Prerequisite: None** (Offered Fall, Spring and Summer).

NRE 494 *Irrigation and Drainage Systems* – 4 hrs. Students will learn designing and construction of irrigation and drainage structures. This course integrates soil and water physics; irrigation development; crop water requirements & scheduling; irrigation planning and design; drainage criteria; design discharges; surface/sub-surface drainage systems design; irrigation drainage structures; land grading and excavation; lab and field exercises and measurements. **Prerequisite:** For NRES students: NRE 351; For Civil Engineering students: EGC 305; CE 305; **or** Instructor's permission. Offered Spring.

NRE 495 *Soil and Water Conservation Applications* – 3 hrs. Advanced theory and practice of soil and water conservation engineering. Applications of soil and water conservation theory and practice. Design and construction of effective soil and water conservation structures.

NRE 496 *Environmental Health Internships* 3 hrs. Those students enrolled in Environmental Health Science program will gain additional field experience, career mentoring, and research opportunities through summer employment/internships with partners such as state and local Departments of Public Health, Environmental Protection Agency (EPA), the Centers for Disease Control (CDC), National Institutes of Environmental Health Sciences (NIEHS), and biotech industries involved in biomedical research, etc. **Prerequisites:** Must have completed all course requirements and Consent of Instructor.

SCHOOL OF ARTS AND SCIENCES

Dr. Matthew E. Edwards, Dean
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323 V. Murray Chambers Building
(256) 372-5300

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 or 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 ability 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.** The Department of Behavioral Science offers majors in Political Science and Sociology and minors in Criminal Justice, History, International Relations, Philosophy, Political Science, and Sociology. 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. Major and minor programs in the Department of Natural and Physical Sciences include biology (with options in botany, zoology, medical technology, pre-medicine, and ecotoxicology) and chemistry. The Department of Physics offers a major in physics (with 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. Other 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 course work 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 2.0 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

Drake Hall
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.

INTERNSHIPS

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 a number of clubs and organizations in which Department majors are required to participate in fulfillment of the Assessment Plan's student portfolio. 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, International Honorary Sociological 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 and Sociology 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 successfully complete the Department's Assessment Plan exit exam (PAME II).

ASSESSMENT REQUIREMENTS

All departmental majors (political science and sociology) are required to complete all requirements in the Department's Assessment Plan. Complete details and requirements of the Assessment Plan can be found on the Department of Behavioral Sciences' webpage at www.aamu.edu. All political science majors must register for the following PSC courses: **PSC 397, PSC 398, PSC 497** and **PSC 498**

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- levels. 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:

Course Number	Course Title	Semester Hours
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 310	Blacks in American Politics	3
PSC 397	Program Seminar I	0.5
PSC 398	Program Seminar II	0.5
PSC 401	Western Political Thought	3
PSC 408	International Relations	3
PSC 497	Program Seminar III	0.5
PSC 498	Program Seminar IV	0.5
PSC Electives	Electives (300- and 400-level courses, with PSC prefixes, including 6 hours at the 400 level)	9
		32

Freshman Year

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

[1]ENG 101H or ENG 103 (international students) may be taken
[2]ENG 102H or ENG 104 (international students) may be taken
[3]BIO 101, BIO 101L or BIO 102, BIO 102L; or CHE 101, CHE 101L or CHE 102, CHE 102L; or PHY 101, PHY 101L or PHY 102, PHY 102L may be taken
[4]HED 101, FAS 101, MSC 101, NHM 103, or PED may be taken

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	203	World Literature I	3	ENG	404	Black Literature	3
		[5]Elem. Foreign Language I	3	ENG	205	General Speech	3
PHL	201	Intro. to Philosophy	3			[6]Social Science	3
HIS	304	African-American Hist.	3	ECO		[7]Economics	3
PSC	201	Intro. to Political Science	3			[5]Elem. Foreign Language II	3
		TOTAL	15	PSC	205	American Government	3
						TOTAL	18

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
HIS	201	American History I	3	HIS	202	American History II	3

ENG	304	Advanced Composition	3	PSC	307	Comparative Government	3
GEO	214	World Regional Geography	3	PSC	310	Blacks in Amer. Politics	3
PSC	206	State & Local Government	3	PSC	398	Program Seminar II	0.5
PSC	397	Program Seminar I	0.5			[8]Approved Course in Minor	3
		[5]Interm. Foreign Language I	3			[5]Interm. Foreign Language II	3
		[8]Approved Course in Minor	3				15.5
			18.5				

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
PSC	408	International Relations	3	PSC	401	Western Political Thought	3
PSC	497	Program Seminar III	0.5	PSC	498	Program Seminar IV	0.5
PSC		Electives	6	PSC		Elective	3
		Approved Courses in Minor	6			[8]Approved Courses in Minor	6
			15.5				12.5

[5]French, German, or Spanish
[6]PSY 201 or SOC 201
[7]ECO 200, ECO 231 or ECO 232
[8]Any minor may be chosen but advisor consultation is recommended. No course may be used in both the major and the minor. No more than 50% of courses taken may be used in both the major and the minor.

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 or her matriculation.

Course Number	Course Title	Semester Hours
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)	15
		33

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	CMP	101	Fund. of Comp. & Info. Syst.	3
		[3]Natural & Physical Science	4			[3]Natural & Physical Science	4
[1]ENG	101	Composition I	3	[2]ENG	101	Composition II	3
MTH	110	Finite Mathematics	3	ART	101	Art Appreciation **OR**	3
HIS	101	World History I	3	MUS	101	Music Appreciation	
		[4]Phys. Ed. & Health Elective	2	HIS	102	World History II	3
			16				16

[1]ENG 101H or ENG 103 (international students) may be taken
[2]ENG 102H or ENG 104 (international students) may be taken
[3]BIO 101, BIO 101L and BIO 102, BIO 102L; or CHE 101, CHE 101L and CHE 102, CHE 102L; or PHY 101, PHY 101L and PHY 102, PHY 102L may be taken or any combination of fields.
[4]HED 101, FAS 101, MSC 101, NHM 103, or PED 1XX may be taken
[5]MTH 110 or higher

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
ENG	304	Advanced Composition	3			[5]Required Support Elective	3
PSC	201	Intro. to Political Science	3	PHL	201	Introduction to Philosophy	3
SOC	201	Intro. to Sociology	3	SOC	210	Social Problems	3
PSY	201	General Psychology	3	ECO		[6]Economics	3
			15				15

[5]To be chosen from History, Political Science, Geography Criminal Justice or Psychology.
[6]ECO 200, ECO 231 or ECO 232 may be taken.

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
SOC	301	Elementary Behavioral Statistics	3			[5]Required Support Elective	3
SOC		[7]Electives	3	ENG	205	General Speech	3
MIS	213	Computer Apps. In Business	3	SOC		[7]Electives	6
		[5]Required Support Elective	3			[8]Approved Courses in Minor	6
		[8]Approved Course in Minor	3				18
		[9]General Elective	3				
			18				

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
SOC	441	Sociological Theory	3	SOC	450	Senior Seminar	3
SOC	443	Social Research	3	SOC		[7]Elective	3
SOC		[7]Elective	3			[8]Approved Courses in Minor	6
		[8]Approved Course in Minor	3			[9]General Elective	3
		[9]General Elective	3				15
			15				

[7]At least 9 SOC elective hours must come from 300 and 400 level courses.
[8]Any minor may be chosen but advisor consultation recommended. No more than 50% of courses taken may be used in both the major and the minor.
[9]Any course level

MINOR IN CRIMINAL JUSTICE

A minor in Criminal Justice requires the following courses:

Course Number	Course Title	Semester Hours
CRJ 250	Introduction to Criminal Justice	3
CRJ 251	Rules of Evidence in Criminal Cases	3
*CRJ 458	Internship	3
	**Approved Criminal Justice Elective	9
		18

*Prerequisites: The student must receive prior approval to enroll by the Department. Nine hours of Criminal Justice courses, including CRJ 250 completed prior to enrollment with a grade of "C" or better in each course. The student may not be on academic probation.
**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:

Course Number	Course Title	Semester Hours
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	9
		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:

Course Number	Course Title	Semester Hours
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	6
		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:

Course Number	Course Title	Semester Hours
PSC 201	Introduction to Political Science	3
PSC 205	American Government	3
PSC 206	State and Local Government	3
	*Approved Political Science Electives	9
		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:

Course Number	Course Title	Semester Hours
SOC 201	Introduction to Sociology	3
SOC 210	Social Problems	3
SOC 441	Sociological Theory	3
	*Approved Sociology Electives	9
		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.* A survey of 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**

CRJ 251 *Rules of Evidence in Criminal Cases - 3 hrs*. Consideration of 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**

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**

CRJ 253 *Deviant Behavior (SOC 253) - 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**

CRJ 254 *Introduction to Correction -3 hrs*. An examination of 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**

CRJ 323 *Juvenile Delinquency (SOC 323) – 3 hrs.* An examination of the nature and causes of juvenile delinquency. The course also reviews the juvenile justice system and programs for treatment, control and prevention of juvenile delinquency. **Prerequisite: SOC 201**

CRJ 351 *Criminology (SOC 351) – 3 hrs.* An introduction to the field of criminology. Specifically, the course 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**

CRJ 355 *Criminal Justice Administration – 3 hrs*. An 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**

CRJ 356 *Police Administration – 3 hrs.* Organization and function of law enforcement agencies are covered. Police problems and practices are evaluated**. Prerequisite: CRJ 250**

CRJ 357 *Probation and Parole – 3 hrs.* 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**

CRJ 458 *Internship – 3 hrs.* Opportunities for students to have field experience by working in various criminal justice agencies. 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. **Prerequisite: CRJ 250.**

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**

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**

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**

GEO 401 *Urban Geography - 3 hrs.* Explanation of various concepts of urban geography and the role of geographic site and location in the evolution of cities. The course 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**

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**

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**

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, disintegration of communist Europe, as well as technological, intellectual, and cultural developments in the period. **Prerequisite: None**

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**

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**

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**

HIS 204 *Introduction to Africana Studies - 3 hrs.* A course dealing 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**

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**

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**

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**

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**

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**

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**

HIS 305 *Modern Asia - 3 hrs.* A study of the interrelationship of the Western nations with the countries of Asia. **Prerequisite: None**

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**

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 is provided 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**

HIS 397 *Program Seminar I - 0.5 hr.* Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to departmental majors. **Prerequisite: None**

HIS 398 *Program Seminar II - 0.5 hr.* Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to departmental majors. **Prerequisite: None**

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**

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 Ward II, United Nations, the Cold War and the confrontation between East and West. **Prerequisite: None**

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**

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**

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**

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**

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**

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**

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**

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**

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.**

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**

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**

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**

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**

PHL 303 *Applied Advanced Reasoning – 3 hrs.* This course uses texts from the philosophy of science to learn and apply rules of syntax, semantics, logical implication and equivalence to analyze and construct arguments in scientific and other academic languages. Scientific and academic writings will be analyzed for two purposes: to understand precisely the writings' content and claims, and to identify and critique the support offered for those claims. The course will seek to teach students to use the rules of logic, syntax, and argument to address reasoning problems based on these academic writings and to solve such problems in scientific and academic discourse and on standardized tests. Prerequisite: 4 semesters or consent of Instructor.

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**

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**

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**

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**

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**

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.**

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**

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**

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**

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**

PSC 310 *Blacks in American Politics - 3 hrs.* A political history of Black Americans from reconstruction to the present. **Prerequisite: PSC 201**

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**

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**

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**

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**

PSC 397 *Program Seminar I - .5 hr.* Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to program majors. **Prerequisite: PSC 201**

PSC 398 *Program Seminar II - .5 hr.* Bi-weekly sessions involving presentations/discussions which address issues, research, and concepts of interest to program majors. **Prerequisite: PSC 201**

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**

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**

PSC 403 *Constitutional Law - 3 hrs.* A focus on the decision-making process of the United States Supreme Court. The course 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**

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**

PSC 408 *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**

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**

PSC 497 *Program Seminar III - .5 hr.* Bi-weekly sessions involving presentations/discussions of issues, research and concepts of interest to program majors. **Prerequisite: PSC 201**

PSC 498 *Program Seminar IV - .5 hr.* Bi-weekly sessions involving presentations/discussions of issues, research and concepts of interest to program majors. **Prerequisite: PSC 201**

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**

SOC 201 *Introduction to Sociology* - 3 hrs. A course providing an analysis of social interaction, the social process, society, culture, social structures, and other concepts fundamental to sociological understanding. **Prerequisite: None**

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**

SOC 212 *Marriage and the Family* - 3 hrs. A consideration of 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. **Prerequisite: SOC 201**

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**

SOC 301 *Elementary Behavioral Statistics* - 3 hrs. **(PSY 301)** Introduction to basic and essential statistical concepts introduced and their application 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**

SOC 310 *Social Change and Collective Behavior* - 3 hrs. A course involving 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**

SOC 323 *Juvenile Delinquency* - 3 hrs. An examination of the nature and causes of juvenile delinquency. The course also reviews the juvenile justice system and programs for treatment, control and prevention of juvenile delinquency. **Prerequisite: SOC 201**

SOC 325 *Rural Sociology* - 3 hrs. Sociological analysis of rural life 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**

SOC 326 *Urban Sociology* - 3 hrs. A course providing 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. A course dealing 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 organization. **Prerequisite: SOC 210**

SOC 330 *Social Psychology* - 3 hrs. Central focus 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**

SOC 332 *Educational Sociology* - 3 hrs. Socialization in the educational institution, and upon the structure (status and roles), interactional patterns, and culture of the school. **Prerequisite: SOC 201**

SOC 334 *Cultural Anthropology* - 3 hrs. A consideration of 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 the culture heritage. Primitive societies are the major ones considered. **Prerequisite: SOC 201**

SOC 336 *Contemporary Social Movements* - 3 hrs. Analysis of 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**

SOC 351 *Criminology – 3 hrs.* An introduction to the field of criminology. Specifically, the course 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**

SOC 432 *Minorities in American Life* - 3 hrs. Treatment of the various minority groups in America, their relations with the dominant group, their subordination, and problems arising from minority status. **Prerequisite: SOC 201**

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**

SOC 441 *Sociological Theory* - 3 hrs. An examination of the classical and contemporary theoretical models in sociology and investigations of the development of sociological thought. **Prerequisite: SOC 201**

SOC 443 *Social Research* - 3 hrs. 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**

SOC 445 *Population Problems* - 3 hrs. An introduction to demography and population research. The course includes population theory, trends and rates in natural increase, population composition, distribution, planning, and human ecology. **Prerequisite: SOC 201**

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**

SOC 450 *Senior Seminar - 3 hrs.* A concluding course focused upon sociological concepts, theories, contributors, literature, and methods. This should be the terminal major course. **Prerequisite: SOC 201**

UNDERGRADUATE SOCIAL WORK PROGRAM
102 Bibb Graves Hall
(256) 372-5475

The Social Work Program at Alabama A&M University offers the Bachelor of Arts degree in Social Work.

MISSION STATEMENT

The mission of the BSW program is to prepare students for beginning generalist professional social work practice with diverse, impoverished and oppressed populations in rural and urban settings.

The Undergraduate Social Work curriculum prepares students for entry level 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 promotes and educates students about the forms and mechanisms of oppression and discrimination and to develop change strategies that advance social and economic justice.

PURPOSE

The primary goal of the Program is to prepare students for competent, ethical entry level generalist professional social work practice with diverse, impoverished, vulnerable and oppressed groups in rural and urban settings.

OBJECTIVES

The Social Work Program objectives are to:

1. Apply critical thinking skills within the context of professional social work practice.

2. Articulate the values and ethical standards of the profession and their personal values to analyze ethical dilemmas and engage in ethical decision making.

3. Practice without discrimination and with respect, knowledge, and skills related to client's age, class, color, culture, disability, ethnicity, family structure, gender, marital status, national origin, race, religion, sex and sexual orientation.

4. Demonstrate an understanding of how the forms and mechanisms of oppression and discrimination impact individuals, groups, families, organizations and communities.

5. Apply strategies of advocacy and social change that advance social and economic justice in generalist social work practices with vulnerable and oppressed populations.

6. Understand and interpret the history of the social work practice with systems of all sizes.

7. Apply the knowledge and skills of generalist social work practice with systems of all sizes.

8. Use problem solving, strengths perspective and ecological systems framework supported by empirical evidence to understand individual development and behavior across the life span and the interactions among individuals and between individuals, families and groups.

9. Evaluate research studies, apply research findings to practice and evaluate their own practice.

10. Demonstrate the ability to critically analyze the impact of social policies and formulate and influence social policies that address discrimination and promote social and economic justice.

11. Utilize communication skills differentially with client populations, professional colleagues and communities.

12. Use supervision and consultation appropriate to social work practice and for continued professional development.

13. Demonstrate an ability to function within the structure of organizations and service delivery systems, use supervision and, where appropriate, seek necessary organizational change.

14. Demonstrate knowledge and awareness of global welfare issues and their impact on client systems.

15. Apply computer technology and skills to enhance effective service delivery to clients.

The curriculum of the Social Work Program is used to achieve the Program's goals and objectives. The objectives reflect generalist training. The specific curriculum objectives and content extend the program objectives and therefore reflect generalist social work practice.

UNDERGRADUATE PROGRAM ACCREDITED BY THE COUNCIL ON SOCIAL WORK EDUCATION

The Social Work Program was initially accredited by the Council on Social Work Education in April, 1979 and continued receiving reaffirmation through 2010.

NOTE: NO ACADEMIC CREDIT FOR LIFE AND/OR WORK EXPERIENCE. The BSW degree program do not award academic credit for life and/or work experience, in whole or in part.

General

SOCIAL WORK PROGRAM ADMISSION CRITERIA

There are several steps involved in the admission of a student to the Undergraduate Social Work Program at Alabama A&M University.

1. Admission to the University.

2. Completion of prerequisite paraprofessional liberal arts courses of 31 hours with and overall grade point average of 2.5. and no less than a grade of (C) in the SWK 200 Introduction to Social Welfare Course.

3. Completion of an Undergraduate Social Work Program application, personal autobiography and criminal background check.

4. Successful completion of an assessment interview with full-time Social Work Program faculty and/or the Resource Specialist. Following the interview the team will consult and make a determination for admissions.

5. Student will receive a formal notification of acceptance to the program.

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 Alabama A&M, 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 for these areas, certain values and ethics are also extracted for use in conjunction with the knowledge. The liberal arts perspective promotes the idea of graduates as productive citizens of the world.

MAJOR REQUIREMENTS

The major in Social Work includes the University core curriculum; the requirements of the School of Arts & Sciences; **forty-three** (43) hours of social work courses, and **six** (6) hours of electives.

Social work majors must take the following courses:

Course No.	Course Title	Semester Hours
SWK 200	Introduction to Social Welfare	3
SWK 201	Introduction Social Work	3
SWK 301	Human Behavior & Social Environment I	3
SWK 302	Human Behavior & Social Environment II	3
SWK 305	Rural Human Services	3
SWK 304	Diverse Populations	3
SWK 306	The Art of Interviewing	3
SWK 309	Social Work Methods: Individuals & Families	3
SWK 310	Social Work Methods: Grps, Orgs & Comm	3
SWK 407	Field Instruction & Seminar	8
SWK 403	Social Welfare Policies & Services	3
SWK 410	Social Work Research Methods	3
SWK 415	Senior Seminar in Research	2
		43

The following courses are Social Work electives:

Course No.	Course Title	Sem. Hrs.
SWK 205	Gerontology: Study of Older Adults	3

SWK 303	Poverty & Deprivation	3
SWK 308	Black Experiences Through Films	3
SWK 311	Introduction to Child Welfare	3

COURSE OFFERINGS FOR OTHER MAJORS

The Social Work Program offers courses that students with other majors may also take, subject to the guidance of their major advisors and/or School regulations. Those course offerings are:

Course No.	Course Title	Sem. Hrs.
SWK 200	Introduction to Social Welfare	3
SWK 201	Introduction to Social Work	3
SWK 205	Gerontology: Study of Older Adults	3
SWK 301	Human Behavior & Social Environment I	3
SWK 302	Human Behavior & Social Environment II	3
SWK 303	Poverty & Deprivation	3
SWK 305	Rural Human Services	3
SWK 304	Diverse Populations	3
SWK 306	The Art of Interviewing	3
SWK 308	Black Experiences Through Films	3
SWK 311	Introduction to Child Welfare	3
SWK 403	Social Welfare Policies & Services	3
SWK 410	Research Methods in Social Work	3

UNDERGRADUATE SOCIAL WORK PROGRAM
124 Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
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	FRE	101	Elementary French **or**	3
PHY	101	Physical Science & Lab	4	SPA	101	Elementary Spanish	3
MUS	101	Music **or**	3	BIO	101	Biology & Lab	4
ART	101	Art Appreciation	2	SWK	200	Intro to Social Welfare *	3
HED	101	Personal Comm. Health	2				
			16				15

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
BIO	102	Biology & Lab	4	MTH	110	Finite Math or Higher	3
ENG	203	World Literature I	3	ENG	204	World Literature II	3
PSY	201	General Psychology	3	PHL	201	Intro. to Philosophy	3
SWK	201	Intro. to Social Work *	3	SWK	301	Human Behavior I	3
FRE	102	Elementary French **or**	3	SOC	201	Intro. to Sociology	3
SPA	102	Elementary Spanish	3				
ECO	200	Basic Economics	3				
			16				18

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	205	General Speech	3	ENG	304	Advanced Composition	3
SWK	306	Art of Interviewing*	3	PSY	301	Elem Behavior Statistics	3
SWK	205	Gerontology **or** *	3	SWK	305	Rural Human Services*	3
SWK	311	Intro to Child Welfare *	3	SWK	309	Soc Work Methods**	3
SWK	302	Human Behavior II*	3	SOC	21	Social Problems	3
SWK	304	Diverse Populations *	3				15
PSC	201	Intro. to Pol. Science **or**	3				
PSC	205	Amer. Gov. **or**	3				
PSC	206	State & Loc. Gov.	3				
			18				

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
SWK	310	Social Work Methods**	3	SWK	407	Field Instruction**	8
SWK	403	Social Welfare Policies*	3	SWK	407L	Field Instruction Seminar**	3
SWK	410	Social Work Res. Meth.**	3	SWK	415	Senior Seminar Research**	2
SWK	307	Black Experience **or** *	3				13
SWK	303	Poverty & Deprivation **or** *	3				
SWK	311	Intro. to Child Welfare **or** *	3				
SWK	205	Gerontology *	12				

All social work majors must take classes in sequential order
*Major Course
**Majors Only
***Majors must have 31 hours completed before they can take SWK 201 and have a 2.50 overall GPA
Spanish is recommended, but German or French may be selected.

Social Work majors are required to complete a total of 124 hours in order to meet the requirements for a **Bachelor of Arts Degree in Social Work.**

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. Prerequisites: ORI 101, ENG 101, HIS 101, PHY 101 & Lab, MUS 101 or ART 101 AND HED 101 (Offered fall, spring, and summer)

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; presents ethics and values appropriate for practice, organizations for the profession, professional issues and skill development. Prerequisites: 31 credit hours, ORI 101, ENG 101, HIS 101, PHY 101 & Lab, MUS 101 or ART 101 AND HED 101, SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101& Lab, MUS 101 or ART 101, FRE or SPA 101, and BIO 101 & L (offered fall, spring and summer)

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. Prerequisites: ORI 101, ENG 101, HIS 101, PHY 101 & Lab, MUS 101 or ART 101 AND HED 101, SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101& Lab, MUS 101 or ART 101, FRE or SPA 101, and BIO 101 & L, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200 (offered fall and summer)

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: SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, BIO 102 & Lab ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, (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. Prerequisites: : ORI 101, ENG 101, HIS 101, PHY 101 & Lab, MUS 101 or ART 101 AND HED 101, SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101& Lab, MUS 101 or ART 101, FRE or SPA 101, and BIO 101 & L, ENG 203, PSY 201, SWK 201, FRE 102 or SPA

102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200 FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200 (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. Prerequisites: SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, ENG 304, PSY 301, SWK 309 and SOC 210 (offered 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, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200 (offered fall and summer)

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 need 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, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, (offered spring)

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, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab & BIO 102 & Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200 (offered fall and spring)

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. Prerequisites: SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, ENG 304, PSY 301, SWK 309 and SOC 210 (offered 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, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, (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 interruptions with groups, organizations and communities are taught. Prerequisites: SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, ENG 304, PSY 301, SWK 309 and SOC 210 (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. Understanding 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. Prerequisites: SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, (offered fall and summer)

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, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, ENG 304, PSY 301, SWK 309 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, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, ENG 304, PSY 301, SWK 309 and SOC 210 , SWK 310, SWK 403, SWK 410, SWK 307, and SWK 303.(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. Prerequisites: SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, ENG 304, PSY 301, SWK 309 and SOC 210 , SWK 310, SWK 403, SWK 410, SWK 307, and SWK 303{co- requisites SWK 407L and SWK 415}.(offered spring)

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, policy, and to promote social justice are explored. Prerequisites: SWK 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, ENG 304, PSY 301, SWK 309 and SOC 210 (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 200, ORI 101, ENG 101 & 102, HIS 101 & 102, PHY 101 & Lab, MUS 101 or ART 101, HED 101, FRE or SPA 101 and BIO 101& Lab, ENG 203, PSY 201, SWK 201, FRE 102 or SPA 102, MTH 110 or higher, ENG 204, PHL 201, SWK 301, SOC 201 and ECO 200, ENG 205, SWK 306, SWK 205, or SWK 311, SWK 302, SWK 304, PSC 201 or PSC 205 or PSC 206, ENG 304, PSY 301, SWK 309 and SOC 210 , SWK 310, SWK 403, SWK 410, SWK 307, and SWK 303.(offered spring)

STUDENT ORGANIZATIONS

Student organizations specific to the discipline are available for students in the Social Work Department. Social Work majors, with a 3.0 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 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 memberships, those who have attained excellence in scholarship and achievement in social work.

The Social Work organization 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.

DEPARTMENT OF ENGLISH AND FOREIGN LANGUAGES

Dr. Mattie Thomas, Chair
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 Telecommunications. Minors are offered in English, French and telecommunications. German and Spanish are also taught. In collaboration with the School of Education, the department offers courses leading to teaching certification in English, and language arts. This program is outlined by the Department of Curriculum and Instruction. The Telecommunications Program offers concentrations in operations, performance, and production.

REQUIREMENTS

Students earning a degree 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

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	ENG	102	[2]Composition II	3
ENG	101	[1]Composition I	3	HIS	102	World History II	3
MTH	112	Pre-Calculus Algebra or			102	[3]Elementary Foreign Language	3
		A Higher MTH course	3-4	CMP	101	Fundamentals of Computer and	
HIS	101	World History I	3			Information Systems	3
HED	101	Personal & Community Health **OR**	2	MUS	101	Music Appreciation	3
PED		Physical Ed. Elective **OR**					15
MSC	101	Military Science I-A					
	101	[3]Elementary Foreign Language	3				
			15-16				

[1]ENG 103 may be taken by international students
[2]ENG 104 may be taken by international students
[3]French, German, or Spanish

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	[3]Intermediate Foreign Language	3
	201	[3]Intermediate Foreign Language	3	ECO	200	Basic Economics **OR**	3
ENG	201	Survey of English Literature I	3	ECO	231	Principles of Macroeconomics	
			16	ENG	205	General Speech	3
				ENG	202	Survey of Eng. Lit II	3
							19

[3]French, German, or Spanish

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
PSY	201	General Psychology	3	ENG	308	Literary Criticism	3
ENG	301	Survey of American Literature I	3	ENG	302	Survey of American Literature 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	3			Elective	3
			15				15

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	401	Romantic Writers **OR**	3	ENG	305	Sixteenth Cent. English Lit. **OR**	3
ENG	402	Victorian Writers		ENG	306	Seventeenth Century English Lit.	
HIS	301	English History I	3	HIS	302	English History II	3
		Electives	9			Electives	9
			15				15

English majors must take the following:

Course Number	Course Title	Semester Hours
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 **OR**	
ENG 306	Seventeenth Century English Literature	3
(See provisions after course descriptions)		
ENG 307	Shakespeare	3
ENG 308	Literary Criticism	3
ENG 309	History of the English Language	3
ENG 401	Romantic Writers **OR**	
ENG 402	Victorian Writers	3
(See provisions after course descriptions)		30

English minors must take the following:

Course Number	Course Title	Semester Hours
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 **OR**	
ENG 309	History of the English Language	3
		18

French minors must take the following:

Course Number	Course Title	Semester Hours
FRE 201	Intermediate French I	3
FRE 202	Intermediate French II	3
FRE 301	Advanced French I	3
FRE 302	Advanced French II	3
FRE 303	Introduction French Literature I	3
FRE 304	Introduction French Literature II	3
		18

Telecommunications Major

125-126 Credit Hours

+Telecommunications majors must also complete an approved minor

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	ENG	102	[2]Composition II	3
ENG	101	[1]Composition I	3	HIS	102	World History II	3
MTH	112	Pre-Calculus Algebra **OR**		CMP	101	Fundamentals of Computer	
MTH	110	Finite Math or Higher MTH	**3-4**			and Information Systems	3
HED	101	Personal & Comm Health **OR**	2	TEL	202	Fundamentals of TV Production	3
PED		Physical Ed. Activity **OR**		BIO	101	General Biology	3
MSC	101	Military Science I-A **OR**		BIO	101L	General Biology	1
MSC	102	Military Science II-B					16
TEL	201	Introduction to Broadcasting	3				
HIS	101	World History	3				
			15-16				

[1]ENG 103 may be taken by international students
[2]ENG 104 may be taken by international students

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	203	Literature I	3	ENG	204	Literature II	3
PHY	101	Physical Science	3	ENG	205	General Speech	3
PHY	101L	Physical Science Lab	1		102	[3]Elementary Foreign Language II	3
MUS	101	Music Appreciation **OR**	3	TEL	212	Writing for Broadcasting	3
ART	101	Art Appreciation		PSY	201	General Psychology	3
	101	[3]Elementary Foreign Language I	3			Elective	3
TEL	211	Broadcast Law and Regulation	3				18
			16				

[3]French, German, or Spanish

(Operations)

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ECO	200	Basic Economics **OR**	3	PHL	201	Introduction to Philosophy	3
ECO	231	Principles of Macroeconomics		SOC	201	Introduction to Sociology	3
	201	[3]Intermediate Foreign Language	3	ENG	304	Advanced Composition	3
TEL	213	Electronics for Broadcasting	3		202	[3]Inter. Foreign Language II	3
		Electives*	6			Electives*	3
			15				15

[3]French, German, or Spanish

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
TEL	301	Film Production I	3	TEL	302	Film Production II	3
TEL	401	Practicum I	3	TEL	402	Practicum II	3
		TEL Electives	9			Electives*	9
			15				15

*Elective hours may be used to complete minor requirements

(Performance)

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ECO	200	Basic Economics **OR**	3	SOC	201	Introduction to Sociology	3
ECO	231	Principles of Macroeconomics		ENG	304	Advanced Composition	3
	201	[3]Intermediate Foreign Language I	3		202	[3]Intermediate Foreign Lang. II	3
TEL	215	Voice and Diction	3	TEL	216	Oral Interpretation	3
TEL	217	Discussion for TV	3			Elective*	3
		Elective*	3				15
			15				

[3]French, German, or Spanish

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
PHL	201	Introduction to Philosophy	3	TEL	302	Film Production	3
TEL	301	Film Production I	3	TEL	402	Practicum II	3
TEL	401	Practicum I	3			Electives*	9
TEL	403	Acting for TV and Film	3				15
		Electives*	3				
			15				

*Elective hours may be used to complete minor requirements

(Production)

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
SOC	201	Introduction to Sociology	3	ENG	304	Advanced Composition	3
ECO	200	Basic Economics **OR**	3		202	[3]Intermediate Foreign Lang. II	3
ECO	231	Principles of Macroeconomics		TEL	304	Advanced TV Production	3
	201	[3]Intermediate Foreign Language I	3			Electives*	6
TEL	403	Acting for TV and Film I	3				15
		Elective*	3				
			15				

*Elective hours may be used to complete minor requirements
[3]French, German, or Spanish

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	9
		TEL Electives	6				15
			15				

*Elective hours maybe used to complete minor requirements

The major in Telecommunications consists of 36 semester hours. 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:

Course Number	Course Title	Semester Hours
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
		12

Operations Concentration Course Requirements:

Course Number	Course Title	Semester Hours
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
		24

Production Concentration Course Requirements:

Course Number	Course Title	Semester Hours
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
		24

Performance Concentration Course Requirements:

Course Number	Course Title	Semester Hours
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
		24

COURSE DESCRIPTIONS

ENG 100 *Developmental English* - 3 hrs. A course presenting 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 Communication Skills I. Those who do not complete the course must continue it during the next semester they are enrolled at the University. **Co-requisite: ENG 100L** (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. A course presenting 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. A course presenting an opportunity for freshmen to develop maturity in using the 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. A course presenting 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. A course presenting a continuation of Honors Composition I. A research project is required. Enrollment in the **Honors** program is also required. **Prerequisite: 101H** (Offered Spring)

ENG 103 *Communication Skills I* - 3 hrs. 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. 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. 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. 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. A study of world literature from ancient Mesopotamian through the Renaissance. **Prerequisite: ENG 102 or ENG 104** (Offered Fall and Spring)

ENG 204 *World Literature II* - 3 hrs. 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. Presentation of 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. 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. 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. 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. 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 that 1700. **Prerequisite: ENG 202** (Offered Spring)

ENG 306 *Seventeenth Century English Literature* - 3 hrs. 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**

ENG 307 *Shakespeare* - 3 hrs. A study of selected dramas of Shakespeare - tragedies, comedies, romances, and histories - and selected sonnets. **Prerequisite: ENG 202**

ENG 308 *Literary Criticism* - 3 hrs. 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. 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. Journalism experiences primarily for students who are assigned to the staff of university publications. The course 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. (Offered Spring) **Prerequisite: ENG 204**

ENG 311 *Creative Writing* - 3 hrs. A course 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. 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 later than 1700. **Prerequisite: ENG 202**

ENG 402 *Victorian Writers* - 3 hrs. 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 later than 1700. **Prerequisite: ENG 202** (Offered Fall)

ENG 403 *Play Production* - 2 hrs. Development of 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. 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. A thorough study of traditional English grammar. It may also include structural, generative, and transformational methods. **Prerequisite: ENG 102** (Offered Fall)

FRENCH

All courses must be taken in proper sequence.

FRE 101 *Elementary French I* – 3 hrs. An introduction 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. 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. A continuation of FRE 201 which 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 I* – 3 hrs. 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. 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. 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. A continuation of FRE 303. The course provides 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)

SPANISH

SPA 101 *Elementary Spanish I* – 3 hrs. An introduction to the fundamentals 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. 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. 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. 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. An introduction 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. 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. 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. 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. A course dealing 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: None**. (Offered)

TEL 202 *Fundamentals of Television Production* – 3 hrs. 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. 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. The fundamentals of writing and adapting literature for television and radio. **Prerequisite: None**. (Offered Spring)

TEL 213 *Electronics for Broadcasting* – 3 hrs. 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. Voice training through exercises in voice production, elements of tone, and articulation of speech sounds. Practical experiences will be offered in announcing, news casting, interviews, special events, and effective speech. **Prerequisite: None**.(Offered Fall)

TEL 216 *Oral Interpretation* – 3 hrs. A course stressing 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 news casting. **Prerequisite: None**. (Offered Spring)

TEL 217 *Discussion for Television* – 3 hrs. Emphasis on contemporary theories on interpersonal and small group communication and especially on techniques for argumentation, interview, and panel discussion for TV. **Prerequisite: None**. (Offered Fall)

TEL 301 *Film Production I* – 3 hrs. 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. 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. 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. 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. 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. 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. 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. 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. A continuation of TEL 403. **Prerequisite: TEL 403**. (Offered Spring)

TEL 411 S*pecial Topics in Broadcasting* – 3 hrs. 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. 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. 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

234 V. M. Chambers Building
256-372-5316

INTRODUCTION

The goal of the Department of Mathematics 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 Department of Mathematics 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 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. Mathematics majors who fail to achieve the passing status on the mid-level examination are required to complete MTH 200, Mathematical Computations, with a minimum grade of C. Finally, each major must complete an exit interview with his/her mathematics academic advisor during the process of being cleared for graduation.

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PROGRAM OFFERINGS

The degree program offered in the Department of Mathematics is the B.S. in Mathematics, which must be paired with a minor option. 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. 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 chairperson of the Department of Mathematics or the Director of Career Development 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 Department 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 Department of Mathematics requires that majors and minors take and pass a mid-level program examination. Mathematics majors who fail to achieve the passing status on the mid-level examination are required to complete MTH 200, Mathematical Computations, with a minimum grade of C.

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.), Physical Education or Health or Military Science (2 hrs.). Additionally, all mathematics majors are required to complete six hours of Foreign Language.

Major Requirements for Mathematics

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.

Course No.	Course Title	Sem Hrs
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
	Total	**30**

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.

Course No.	Course Title	Sem Hrs
*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
	Total of Required Electives	**9**

* Graduate School Track

Requirements for Minor in Mathematics

Students may declare a minor in Mathematics upon the satisfactory completion of Calculus I, MTH 125. A minimum of twenty additional 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.

Course No.	Course Title	Sem Hrs
MTH 126	Calculus II	4
MTH 227	Calculus III	4
MTH 237	Introduction to Linear Algebra	3
MTH 238	Applied Differential Equations	3
MTH 453	Probability and Statistics	3
	Total	**17**

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.

Course No.	Course Title	Sem Hrs
MTH 301	Abstract Algebra I	3
MTH 303	Methods of Mathematical Physics	4
MTH 324	Applied Statistical Computing	3
MTH 327	Applied Regression Analysis	3
MTH 351	Introduction to Real Analysis I	3
MTH 371	Number Theory	3
MTH 383	Numerical Analysis	3
MTH 452	Complex Analysis	3
	Total of Required Electives	**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.

Course No.	Course Title	Sem Hrs
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
	Total	**18**

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 1xx, 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 and 102, 102L or PHY 105, and 106

Freshman Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
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	MTH	126	Calculus II	4
MTH	125	Calculus I	4	CMP	102	Intro to Programming I	3
		Health/Phys Ed/Mil Sci	2			Fine Arts	3
		Total	13			**Total**	16

Sophomore Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
MTH	227	Calculus III	4	MTH	238	Applied Diffl 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 Lab I	1	CHE	102L	General Chemistry Lab II	1
	101	Foreign Language Seq I	3		102	Foreign Language Seq II	3
ENG		Literature	3	ENG	205	General Speech	3
		Total	17			**Total**	16

Junior Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
MTH	301	Abstract Algebra I	3	MTH		Approved MTH Elective	3
MTH	351	Intro to Real Analysis I	3			Social/Behavioral Science	3
CHE	221	Analytical Chemistry I	3			Science Sequence II	3
CHE	221L	Analyt Chemistry Lab I	1			Science Sequence Lab II	1
		Science Sequence I	3	MTH		Approved MTH Elective	3
		Science Sequence Lab I	1			Elective or Co-op Exp.	3
ENG	304	Advanced Composition	3			**Total**	16
		Total	17				

Senior Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
MTH	453	Probability & Statistics	3			Elective	3
CHE	301	Organic Chemistry I	3	MTH	481	Senior Project	3
CHE	301L	Organic Chemistry Lab I	1	CHE	302	Organic Chemistry II	3
		Social/Behavioral Sci	3	CHE	302L	Organic Chemistry Lab II	1
		Elective or Co-op Exp.	3			Elective	4
MTH		Approved MTH Elective	3			**Total**	14
		Total	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 1xx, 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 and 102, 102L or PHY 105 and 106, or CHE 101, 101L and 102, 102L

Freshman Year

First Semester				Second Semester			
Course	**No.**	**Course Title**	**Sem Hrs**	**Course**	**No.**	**Course Title**	**Sem Hrs**
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	MTH	126	Calculus II	4
MTH	125	Calculus I	4	CMP	102	Intro to Programming I	3
		Health/Phys Ed/Mil Sci	2			Fine Arts	3
		Total	13			**Total**	16

Sophomore Year

First Semester				Second Semester			
Course	**No.**	**Course Title**	**Sem Hrs**	**Course**	**No.**	**Course Title**	**Sem Hrs**
MTH	227	Calculus III	4	MTH	238	Applied Differential Eq.	3
MTH	237	Intro to Linear Algebra	3	ECO	200	Basic Economics	3
CMP	103	Computer Mathematics	3	CMP	109	Intro to Programming II	3
	101	Foreign Language Seq I	3		102	Foreign Language Seq II	3
		Social/Behavorial Sci	3	ENG		Literature	3
		Total	16	CMP	104	Intro to Comp .& Ethics	3
						Total	18

Junior Year

First Semester				Second Semester			
Course	**No.**	**Course Title**	**Sem Hrs**	**Course**	**No.**	**Course Title**	**Sem Hrs**
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 Lab II	1
		Science Sequence Lab I	1	MTH		Approved MTH Elective	3
ENG	304	Advanced Composition	3	ENG	205	General Speech	3
CMP	204	Visual Programming	3			Elective	4
		Total	16			**Total**	17

Senior Year

First Semester				Second Semester			
Course	**No.**	**Course Title**	**Sem Hrs**	**Course**	**No.**	**Course Title**	**Sem Hrs**
MTH	453	Probability & Statistics	3	CMP		Elective (300-400 level)	3
		Social/Behavioral Sci	3	MTH	481	Senior Project	3
		Elective or Co-op Exp.	3	CMP		Elective (300-400 level)	3
MTH		Approved MTH Elect	3			Elective or Co-op Exp.	3
		Total	12			**Total**	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 1xx, 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

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
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	MTH	126	Calculus II	4
MTH	125	Calculus I	4	CMP	102	Intro to Programming I	3
		Health/Phys Ed/Mil Sci	2			Fine Arts	3
		Total	13			**Total**	16

Sophomore Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
MTH	227	Calculus III	4	MTH	238	Applied Diffl Equations	3
MTH	237	Intro to Linear Algebra	3	ECO	200	Basic Economics	3
PHY	105	Physics I	4	PHY	106	Physics II	4
	101	Foreign Language Seq I	3		102	Foreign Language Seq II	3
ENG		Literature	3	ENG	205	General Speech	3
		Total	17			**Total**	16

Junior Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
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 Lab II	1
		Science Sequence Lab I	1	MTH		Approved MTH Elective	3
ENG	304	Advanced Composition	3	PHY	303	Methods of Math Physics	4
		Social/Behavorial Sci	3	PHY		PHY Elective (300 Level)	3
PHY	201	Modern Physics	3			**Total**	17
		Total	19				

Senior Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
MTH	453	Probability & Statistics	3			Elective	3
		Social/Behavioral Science	3	MTH	481	Senior Project	3
		Elective or Co-op Exp.	3			Elective	3
MTH		Approved MTH Elective	3			Elective or Co-op Exp.	3
		Elective	3			**Total**	12
		Total	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 1xx, 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 and 106, or CHE 101, 101L, 102, 102L

Freshman Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
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	MTH	126	Calculus II	4
MTH	125	Calculus I	4	CMP	102	Intro to Programming I	3
		Health/Phys Ed/Mil Sci	2			Fine Arts	3
		Total	13			**Total**	16

Sophomore Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
MTH	227	Calculus III	4	MTH	238	Applied Diffl Equations	3
MTH	237	Intro to Linear Algebra	3	ECO	200	Basic Economics	3
ST	324	Applied Stat Computing	3			Science Sequence II	3
		Science Sequence I	3			Science Sequence Lab II	1
		Science Sequence Lab I	1	ST	327	Applied Regress Analysis	3
	101	Foreign Language Seq I	3		102	Foreign Language Seq II	3
		Total	17			**Total**	16

Junior Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
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 Exp. I	3	MTH		Approved MTH Elective	3
CMP	109	Intro to Programming II	3	ENG		Literature	3
ENG	304	Advanced Composition	3	ST	444	Design & Analysis of Exp II	3
		Social/Behavorial Science	3			**Total**	15
		Total	18				

Senior Year

First Semester				Second Semester			
Course No.		**Course Title**	**Sem Hrs**	**Course No.**		**Course Title**	**Sem Hrs**
MTH	453	Probability & Statistics	3	MTH	481	Senior Project	3
		Elective	4			Elective or Co-op Exp.	3
MTH		Approved MTH Elective	3			Social/Behavioral Science	3
ENG	205	General Speech	3	ST	473	Statistics	3
		Total	13			**Total**	12

COURSE DESCRIPTIONS

MTH 100 *Developmental Mathematics* - 3 hrs. 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. 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. **Prerequisite**: **MTH 100** or a satisfactory score on a placement test. (Offered Fall, Spring, Summer)

MTH 105 *Intermediate Algebra* – 3 hrs. This course covers exponents, roots and radicals, polynomial and rational expressions, functions and graphing, transformations of functions, quadratic and inverse functions, and linear and non-linear systems of equations. **Note: MTH 105 is an intensive intermediate algebra course designed for students in science programs, technology, engineering and mathematics (STEM) degree where MTH 125, Calculus I, is the initial course in their curriculum. This course is designed to prepare students for MTH 115. (Offered Fall, Spring, Summer)**

MTH 107 *Modern Mathematics* - 3 hrs. 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. 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. 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. 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 115 *Pre Calculus Algebra and Trigonometry* – 4 hrs. This course covers functions, logarithms and exponentials, trigonometric functions and inverse trigonometric functions, trigonometric identities and equations, vectors, complex numbers, polar coordinates, systems of linear and quadratic equations/inequalities and the binomial theorem. **MTH 115 is an intensive pre-calculus preparatory course designed for students in science, technology, engineering, and mathematics (STEM) degree programs where MTH 125, Calculus I, is the initial course of their degree program. (Offered Fall, Spring, Summer)**

MTH 120 *(Formerly MTH 130) Calculus and Its Applications* - 3 hrs. A broad overview of calculus taken primarily by students majoring in commerce and business. The course 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, and 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. 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. 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. The content of MTH 125 at an accelerated pace including 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. Content of MTH 126 at an accelerated pace including 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 200 *Mathematical Computations* - 1 hr. A comprehensive study of the interrelation of topics from Pre-Calculus Algebra and Trigonometry, Calculus I and II, and Linear Algebra. This course may not be used as a designated Mathematics elective in any degree program; however it may be used to fulfill, in part, elective credits (free electives) required in degree programs in the Department of Mathematics.

MTH 227 *(Formerly MTH 201) Calculus III* - 4 hrs. 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 and 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. Also taught are techniques for solving higher order linear differential equations with constant coefficients, including the general theory and the method of undetermined coefficients, reduction of order, and variation of parameters. Discussions include 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. 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. Also included are the 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. 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 are included. **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. Topics include the completeness axiom, topology of the real line, compact sets, sequences, subsequences, Cauchy sequences, limits, continuity, and uniform continuity. **Prerequisite: MTH 227** (Offered Fall)

MTH 352 *Introduction to Real Analysis II* - 3 hrs. Continuation of MTH 351 which includes discussions of differentiation, Riemann integral, derivatives of integrals, infinite series, absolute and conditional convergence, power series, Taylor series, sequences and series of functions, and 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 computer usage and applications of technology in mathematics instruction, development of curriculum materials using mathematical software packages; laboratory demonstrations and projects. **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, continuity of complex variables, differentiability, Cauchy-Riemann conditions, contour integral theorem, sequences and series, and 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, and 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. Discussion of 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 *(MTH 324) 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, Greco-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 Reserve Officers' Training Corps (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

- Training and preparation of cadets for attendance and successful completion of the Leaders Training Course (LTC) and Leadership Development and Assessment Course (LDAC).
- Train/prepare advanced course cadets for successful completion of the Basic Officer Leader Course (BOLC) II & III.
- 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.

GENERAL PROGRAM REQUIREMENTS

Enrollment in the basic military science program is voluntary with no military obligation.

To enroll in the advanced course, a student must be medically qualified as determined by standard Army medical examination, achieve a minimum qualifying GPA of 2.0, complete the two-year basic course or attend Leaders Training Course at Fort Knox, Kentucky during the summer, must pass the Army's Physical Fitness Test (APFT), and meet and maintain height/weight standards in accordance with the Army's guidelines.

PROGRAM OFFERINGS

The Military Science program consists of a two-year basic course and a two-year advanced course enrolling both male and female students. The basic course is taken during the freshman and sophomore years. Students are under no military obligation while enrolled in the basic course. Students can only minor in ROTC as no major is offered.

- Those students who successfully complete the basic course or Leaders Training Course, meet the Army physical standards, and demonstrate officer potential, will be considered for contracting and enrollment in the advanced course.

- Veterans who have had at least two years of active duty service, National Guard or United States Army Reserve members who have completed basic training and students who have completed at least three years of JROTC, and 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).

- 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.

FINANCIAL ASSISTANCE/SCHOLARSHIPS

Students may compete for and earn an ROTC scholarship. The Army ROTC scholarship provides full tuition & fees and textbooks.

All contracted scholarship and non scholarship cadets are paid a monthly tax free stipend. Stipend amounts are:

MS I - $300.00
MSII - $350.00
MS III - $450.00
MS IV - $500.00

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 the four 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, Air Assault School and other military training offered during the summer

STUDENT PROFESSIONAL ORGANIZATIONS

The cadet corps has a variety of activities that include the Ranger Challenge Team, Color Guard, Honor Guard, and intramural sports.

SPECIAL PROGRAMS/AWARDS/RECOGNITIONS

- Numerous awards are available and awarded to ROTC cadets from both Army and civilian organizations.

- A distinguished military student (DMS) is a MS IV cadet who has been designated by the PMS and has met the following qualifications:

    - Possesses outstanding qualities of leadership and high moral character
    - Exhibited a definite aptitude for and interest in the military service
    - Achieved 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
    - Attained an overall academic standing in the upper half of his university or college class
    - Demonstrated initiative and learning 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.

    - A distinguished military graduate (DMG) is a cadet designated by the Commander, U.S Army Cadet Command who has met the following qualifications.

    - Maintained the scholastic standards listed for a DMS
    - Successfully completed the advanced course, to include training at LDAC
    - 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.

SPECIAL FEES/ASSESSMENTS

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.

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.

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 LTC 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.

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.

SCHOLARSHIPS

Scholarship benefits include full tuition payment and a flat rate allowance for the purchase of textbooks, supplies, and equipment. Additionally, subsistence allowance in the amount of $250-$400.00 per month is paid to all scholarship recipients each school year the scholarship is in effect.

EXTRACURRICULAR ORGANIZATIONS

The cadet corps has a variety of activities which include the Ranger Challenge Team, Color Guard and Honor Guard.

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. LTC candidates must register for the LTC six (6) credit hours (MSC 206) during the summer prior to LTC. 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:

Freshman Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
MSC 101 Military Science I-A	2	MSC 102 Military Science I-B	2

Sophomore Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
MSC 201 Military Science II-A	2	MSC 202 Military Science II-B	2

Junior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
MSC 301 Military Science III-A	3	MSC 302 Military Science III-B	3

Senior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
MSC 401 Military Science IV-A	3	MSC 402 Military Science IV-B	3
HIS 315 Military History	3		

COURSE DESCRIPTIONS

MSC 101 *Military Science I-A* - 2 hrs. 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 land navigation, principles of leadership and traits of a leader. **Prerequisite: None** (Offered Fall and Spring)

MSC 102 *Military Science I-B* - 2 hrs. A continuation of MSC 101. **Prerequisite: MSC 101** (Offered Fall and Spring)

MSC 201 *Military Science II-A* - 2 hrs. (Two, 2-hour class periods). 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 back azimuth, 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 20l** (Offered Spring)

MSC 206 *Basic Camp* - 6 hrs. A course designed to provide an orientation to students without military training background and also giving 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. Prerequisite: None**(Offered Summer)

MSC 301 *Military Science III-A* - 3 hrs. (Two, 3-hour classroom sessions, one 1-hour leadership development laboratory, and Leader Development and Assessment Course of five (5) weeks duration). The course consists of instruction in reference to platoon and squad 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 LDAC. **Prerequisite: 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)

NOTE: HIS 315- Military History- must be completed in partial fulfillment of the Army's Professional Military Education (PME) requirements.

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 mission of the department is to provide our graduates with a solid academic foundation in the biological sciences with skills for further educational opportunities for careers in research, teaching and public service. We expect that our students will become productive and informed citizens, who are well prepared for positions in public and private institutions, and for graduate and professional studies in the biological and biomedical fields such as medicine, pharmacy, dentistry, veterinary medicine, environmental health 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 Environmental Health. The curriculum consists of (a) required non-biology courses, (b) required biology courses, and (c) specific electives from 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 biology majors, 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, Physician's assistant, biotechnology, 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, plant ecology, plant ecology and plant taxonomy. The environmental health option prepares students for careers in toxicology, public health, 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 bulletin.

GRADUATION REQUIREMENTS

Biology students must complete 114 semester hours of core and specialty courses as biology majors, 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 and have a "C" or better in Biology courses. In addition, the student must take one of the following professional exams: MCAT, DAT, PCAT or the GRE. Once these requirements are met the student will receive a B.S. degree in biology. In order for students to receive a minor in Chemistry, such students will have to fulfill the Chemistry program's requirement for granting 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: Pre-Professional Club, Beta Kappa Chi, and SNMA/MAPS.

BIOLOGY MAJOR

126 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	PSY	201	Gen. Psychology	3
ENG	101	Communication Skills	3	ENG	102	Communication Skills I	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 **or**	2	CMP	101	Fund. of Computer &	
MSC	101	Military Science **or**				Information Systems	3
PED	101	Fitness for Life		MTH	112	Pre-Cal Algebra	3
BIO	100	Careers in Life Science	1				19
		[1]Fine Arts Elective	3				
			17				

[1]MUS 101 or ART 101

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	203	Humanities I	3	ENG	204	Humanities II	3
MTH	113	Pre-Cal. Trig	3	MTH	125	Calculus I	4
	101	[2]Elementary Foreign Language	3		102	[2]Elementary Foreign Language	3
CHE	101	Gen. Chemistry I	3	CHE	102	Gen. Chemistry I	3
CHE	101L	Gen. Chemistry Lab I	1	CHE	102L	Gen. Chemistry Lab II	1
BIO	202	Comp. Anatomy	3	ECO	200	Basics Economics	3
BIO	202L	Comp. Anatomy Lab	1				17
			17				

[2]French, Spanish or German

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
PHY	105	Physics I	4	PHY	106	Physics II	4
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	203	General Botany **OR**		BIO	311	Genetics	3
BIO	204	General Botany	3	BIO	311L	Genetics Lab	1
BIO	204L	General Botany Lab	1				12
MTH	126	Calculus II	4				
			16				

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	3
BIO		Elective	4	CHE	407L	Biochemistry Lab	1
		Free Elective	4				12
			16				

Note: This curriculum includes 114 hours of core courses for a biology major, 8 hours of biology option courses, and 4 hours of free electives. A track option must be selected for the BIO electives. Students may not substitute courses in a track option. See option information on next page.

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:

Option 1	**Option 2**	**Option 3**	**Option 4**	**Option 5**
Botany	Zoology	Med-Tech	Pre-Med	Environmental Health
Plant Physiology	Molecular Biology	Med. Micro	Molecular Biology	Introd to Environ. Health*
Plant Pathology	Parasitology	Parasitology	Human A&P	Ecotoxicology I
Plant Anatomy	Entomology	Anal. Chemistry	Med. Microbiology	Epidemiology
Environmental Biology	Med. Microbiology	Immunology	Immunology	Applied Statistics
	Biochemistry	Biochemistry	Biochemistry	Ecology
			Embryology	Environmental Biology
				Radiation Biology

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 an option.
Students who choose the Environmental Health option must take the 'Introduction to Environmental Health' course and any other courses in the option to make up the required 8 semester hours.

I. CURRICULUM FOR A MINOR IN BIOLOGY

A minimum of eighteen credit(18) hours in biology are required for the Biology Minor. Students may select any combination of the following courses; however, the selection must include BIO 103, Principles of Biology:

Course Number	Course Title	Semester Hours
BIO 202, BIO 202L	Comparative Vertebrate Anatomy with lab	4
BIO 203, 203L or 204, 204L	General Botany I or II with lab	4
BIO 221, 221L or 222, 222L	Human Anatomy & Physiology I or II with lab	4
BIO 330, 330L	Microbiology with lab	4
BIO 340, 340L	Embryology with lab	4
BIO 411, 411L	Cell Biology with lab	4
BIO 434, 434L	Principles of Physiology with lab	4

II. CURRICULUM FOR A MINOR IN ENVIRONMENTAL HEALTH (BIOLOGY)

The student will need to take a minimum of **18 credit hours**, which must include:

i. BIO 223: Introduction to Environmental Health (3)
ii. BIO 490: Internship (3) and
iii. BIO 433: Fundamentals of Epidemiology (3)

Other courses the students may choose form to complete the minimum required 18 credit hours include:

- BIO 324: Ecotoxicology I/Environmental Toxicology 3 hrs
- MTH 355: Applied Statistics – 3 hrs or an Elementary Statistics Course
- BIO 200: Environmental Biology – 4 hrs
- BIO 205: Ecology – 4 hrs
- BIO 321: Parasitology – 4 hrs
- BIO 330 Microbiology – 4 hrs
- BIO 430: Medical Microbiology – 4 hrs
- SPS 453: Hazardous Waste Management – 3 hrs
- BIO 450: Radiation Biology – 3 hrs
- SPS 486: Environmental Policy and Law – 3
-

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 in Huntsville (UAH); 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

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	ENG	102	Communication Skills II	3
ENG	101	Communication Skills 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	112L	Applied Chemistry Lab	1
CHE	111L	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 Lab	1	MTH	112	Pre-Cal Algebra	3
BIO	100	Careers in Life Science	1				19
BIO	103	Principles of Biology	3				
			19				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
*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	232	Principles of Microeconomics	3	BIO	330L	Microbiology Lab	1
ENG	203	Humanities I	3	PSC	205	State & Local Government **OR**	
SOC	201	Intro. to Sociology	3	PSC	206	Federal Government	**3**
			19	BIO	222	Human A&P	1
				BIO	222L	Human A&P Lab	3
							20

If students fail to enter or complete a nursing program and choose to re-enter to get a biology degree, he or 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 majors. Prerequisite: None Co-requisite: BIO 101** (Offered Fall, Spring, and Summer)

BIO 102 *General Biology - 3 hrs. (Three 1 hr. Lectures*). A second semester course 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 Ge*neral Biology Lab* - 1 hr. (One 2 hr. Lab) Lab designed to enhance and accommodate BIO 102. **For non-majors 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 is on problems caused by man's use of the natural world 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 Fall & Spring)

BIO 201L *Invertebrate Zoology Lab* - 1 hr. A companion lab for BIO 201 covering the lecture topics. **Prerequisite: BIO 103L** (Offered Fall & 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* - 1hr. 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*- 1hr. 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 and 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* - 3hrs. 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 223 *Introduction to Environmental Health*-3hrs. The fundamentals of environmental health, covering environmental control agencies, elements of the environment suffering from pollution, environmental pollutants and their sources, effects of environmental pollution, and methods of pollution control. (offered Fall and Spring).
Prerequisites: Instructors' consent

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 Fall & 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 3ll.** (Offered Fall & Spring)

BIO 321 *Introduction to Parasitology* - 3hrs. 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* - 1hr. 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* - 3hrs. Principles of toxicological bioassays will be introduced. Methods of bioassays including microbial, vertebrate and chemical. **Prerequisite: BIO 324.** (Offered Spring)

BIO 330 *Microbiology* - 3hrs. A study of the properties of microorganisms, their influence on hygiene, disease transmission, higher plants, animals, agriculture and industry. Instruction in 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* - 1hr. 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* - 1hr. 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 401 Ecology – 3hrs. The study of trophic relationships and energy transfer in ecosystem; discussion of environmental factors that affect the distribution and abundance of animals and plants as well as the composition of various communities. This course will review major ecological concepts, identify the techniques used by ecologists, provide an overview of local and global environmental issues, and examine individual, group and governmental activities important for protecting natural ecosystems. **Prerequisites: Consent of instructor.** (Offered Spring)

BIO 401L: Ecology Lab – 1hr. A companion lab for BIO 401 covering the lecture topics. **Co- requisite:** BIO 401 (Offered Spring)

BIO 402 *Limnology* - 3hrs. 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* - 3hrs. 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* - 3hrs. 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 433 *Fundamentals of Epidemiology*- 3 hrs. Students will learn the fundamentals of epidemiology. Areas of emphasis include epidemiology definitions and practical applications, measures of morbidity and mortality, descriptive epidemiology, observational and experimental study designs, data interpretation issues, infectious disease epidemiology, environmental epidemiology, and chronic disease epidemiology.
(Offered Fall and Summer)
Prerequisites: BIO 330, Applied Statistics, Instructor's consent needed.

BIO 434 Principles of Physiology – 3 hrs. BIO 434 is the study of the structural and functional organization of cells, and how cellular function relates to body function. Processes such as enzymatic reactions, oxidative metabolism, cellular transport, and bioelectrical mechanisms are discussed. The structure and function of the muscular system, the circulatory system, the respiratory system, the digestive system, the reproductive system, the nervous system, the immune system, and the endocrine system will be covered in this course. (offered spring)
Prerequisites: BIO 202 and 202L; CHE 301 and 301L. Co- requisite: BIO 434L

BIO 434L *Principles of Physiology Lab*- 1hr. A companion lab for BIO 434 covering the lecture topics. (Offered Spring)
Prerequisites: BIO 202 and 202L; and CHE 301 and 301L. Co-requisite: Bio 434.

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 are held. **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**, both of which are described below.

GENERAL REQUIREMENTS AND INFORMATION

The curricula outlined on the following pages should be used for minor in biology or in mathematics. These are chosen since the biology and mathematics minors are two of the most popular among majors in chemistry. Other minor options such as physics, computer science, biology, agricultural, forestry and food sciences may be used. To pursue such minors, the sections in the bulletin 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 48 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, two semesters of a foreign language and two semesters of computer programming language. 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 20 semester hours. These must include Chemistry 101 and 102, 221, 301 and 302 with their accompanying laboratories. With Departmental permission, CHE221 and CHE 221L (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 bulletin. The chemistry major curriculum automatically satisfies the mathematics and physical science requirements. To complete the total hours required for a chemistry major, the student may select as many as three 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 each course 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 biology and 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, Biology Minor

127 Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	101	Communication Skills I	3	ENG	102	Communication 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
HIS	101	World History I	3	HIS	102	World History II	3
[1]HED	101	Personal & Comm. Health	2				
			17				**17**

[1] Two semester hours of Physical Education Activities (PED) or Military Sciences (MSC) may be substituted for Personal & Community Health

Sophomore Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
MTH 227 Calculus III	3	MTH 238 Applied Differential Equations	3
ENG 203 Humanities I	3	CHE 221 Analytical Chemistry	3
[3]FRE 101 Elementary French I	3		
PHY 105 Physics I	4	CHE 221L Analytical Chemistry Lab	1
1BIO 103 Principles of Biology	3	[2]MUS 101 or ART 101	3
BIO 103L Principles of Biology Lab	1	PHY 106 Physics II	4
_	**17**	[3]FRE 102 Elementary French II	3
			17

[2] Student may substitute Art Appreciation (ART 101) for Music Appreciation (MUS 101)

[3]Student may substitute two semesters Elementary Spanish or Elementary German for Elementary French .

Junior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
[4]BIO Elective	4		
PSY 201 General Psychology	3	CHE 308 Special Topics	3
CMP 102 Introduction to programming	3	CMP 109 Introduction to Programming 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
CHE 403 Research I	2	[4]BIO Elective	4
	16	CHE 404 Research II	2
			16

[4]To complete the 18 total hours required for Biology minor, the may select as many as fourteen hours of BIO Electives accepted by the Department.

Senior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
CHE 401 Physical Chemistry I	3	CHE 402 Physical Chemistry II	3
CHE 401L Physical Chemistry I Lab	1		
[4] BIO Electives	3	CHE 402L Physical Chemistry II Lab	1
[5] CHE Electives	3	[4] BIO Electives	3
[5] CHE Electives	3	409 Instrumental Methods	3
	13	409L Instrumental Methods Lab	1
		[5] CHE Electives	3
			14

[5]Chemistry majors should consult the chemistry faculty assigned to them with regards to the selection of electives

DEGREE IN CHEMISTRY

Chemistry Major, Mathematics Minor

125 Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	101	Communication Skills I	3	ENG	102	Communication 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
HIS	101	World History I	3	HIS	102	World History II	3
[1]HED	101	Personal & Comm. Health	2				
			17				**17**

[1]Two semester of Physical Education Activity (PED) or one semester of Military Sciences (MSC) may be substituted for Personal & Community Health

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
				Advanced composition			3
MTH	227	Calculus III	4	MTH	238	Applied Differential Equations	3
[2]MUS 101 or ART 101			3	CHE	221	Analytical Chemistry	3
[3]FRE	101	Elementary French	3	CHE	221	Analytical Chemistry Lab	1
PHY	105	Physics I	4	[3]FRE	102	Elementary French II	3
ENG	203	Humanities I	3				
			17	PHY	106	Physics II	4
							17

[2] Student may substitute Art Appreciation (ART 101) for Music Appreciation (MUS 101).
[3] Student may substitute two semesters Elementary Spanish or Elementary German for Elementary French

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
MTH 237 Introduction to linear Algebra			3	CHE	308	Special Topics	3
CMP 102 Introduction to programming I			3	CMP 109 Introduction to programming 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
				MTH	453	Probability and Statistics	3
CHE	403	Research I	2	CHE	404	Research II	2
PSY 201 General Psychology			3				**15**
			15				

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
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 Elective			3	CHE	409	Instrumental Methods	3
CHE Elective			3	CHE	409L	Instrumental Methods Lab	1
[6]MTH Elective			3	CHE Elective			3
			13	[7]free Elective			3
							14

[5] Chemistry majors should consult the faculty assigned to them with regards to the selection of chemistry electives.
[6]To complete the 20 total hours required for mathematics minor, the student may select any three-hour course from the list of MTH electives approved by the Mathematics Department.
[7] To complete 125 total hours required for chemistry major, the student may select three hours of free electives (from any courses offered or accepted by the University)

DEGREE IN CHEMISTRY --- HONORS OPTION

Chemistry Major, Biology Minor

127 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem Hrs.
ENG	101	Communication Skills I	3	ENG	102	Communication Skills 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
HIS 101		World History	3	HIS 102		World History II	3
[1]HED		Personal & Comm. Health	2				
			17				**17**

[1] Two semester hours of Physical Education Activities (PED) or Military Sciences (MSC) may be substituted for Personal & Community Health

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.	
MTH	227	Calculus II	3	MTH 238		Applied Differential Equations	3	
ENG 203		Humanities I	3	CHE 221		Analytical Chemistry	3	
[3]FRE 101		Elementary French I	3	CHE 221		Analytical Chemistry Lab	1	
PHY	105	General Physics I	4	[2] MUS 101 or ART 101			3	
BIO 103		Principles of Biology	3	PHY 106		Physics II	4	BIO
103L		Principles of Biology Lab	1	[3]FRE	102	Elementary French II	3	
			17				**17**	

[2] Student may substitute Art Appreciation (ART 101) for Music Appreciation (MUS 101).

[3] Student may substitute two semesters of Elementary Spanish or Elementary German for Elementary French.

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
[4] B IO Elective			4	CHE	308	Special Topics	3
PSY 201		General Psychology	3	CMP	109	Introduction to Programming II	3
CMP 102		Introduction to programming	3	CHE	302	Organic Chemistry II	3
CHE	301	Organic Chemistry I	3	CHE	302L	Organic Chemistry II Lab	1
CHE	301L	Organic Chemistry I Lab	1	[4] B IO Elective			4
CHE 403		Research 1	2	CHE	404	Research II	2
			16				**16**

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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
[4] B IO Elective			3	[4] B IO Elective			3
[5]CHE Elective			3	CHE	409	Instrumental Methods	3
[5]CHE Elective			3	CHE 409L		Instrumental Methods Lab	1
				[5]CHE Elective			3
			13				**14**

[5] Chemistry majors should consult the chemistry faculty assigned to them with regards to the selection of electives.

DEGREE IN CHEMISTRY --- HONORS OPTION

Chemistry Major, Mathematics Minor

125Credit Hours

Freshman Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
ENG 101	Communication Skills I	3	ENG 102	Communication Skills 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
HIS 101	World History	3	HIS 102	World History II	3
[1]HED	Personal & Comm. Health	2			17
		17			

[1] Two semester hours of Physical Education Activities (PED) or Military Sciences (MSC) may be substituted for Personal & Community Health

Sophomore Year

First Semester	Sem. Hrs.	Second Semester	Sem. Hrs.
MTH 227Calculus II	4	ENG 304 Advanced composition	3
MUS 101 or ART 101	3	MTH 238 Applied Differential Equations	3
[3]FRE 101 Elementary French I	3	CHE 221 Analytical Chemistry	3
PHY 105 General Physics I	4	CHE 221L Analytical Chemistry Lab	1
ENG 203 Humanities I	3	FRE 102 Elementary French II	3
	—	PHY 106 Physics II	4
	17		**17**

[2] Student may substitute Art Appreciation (ART 101) for Music Appreciation (MUS 101).

[3]Student may substitute two semesters of Elementary Spanish or Elementary German for Elementary French.

Junior Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
MTH 237	Introduction to Linear Algebra	3	CHE 308	Special Topics	3
CMP 102	Introduction to Programming	3	CMP 109	Introduction to Programming 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
CHE 403	Research I	2	MTH 453	Probability and Statistics	3
PSY 201	General Psychology	3	CHE 404	Research II	2
		15			**15**

Senior Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
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
[5]CHE Elective		3	CHE 409	Instrumental Methods	3
[5]CHE Elective		3	CHE 409L	Instrumental Methods Lab	1
[6]MTH Elective		3	[5]CHE Elective		3
		_	[7]Free Elective		3
		13			**14**

[5]Chemistry majors should consult the chemistry faculty assigned to them with regards to the selection of electives.

[6]To complete the 20 total hours required for a mathematics minor, the student may select any three hours course from MTH Electives approved by the mathematics Department.

[7]To complete the 125 total hours required for the chemistry major, the student may select a three 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 chemistry background from high school. Forty-eight hours are required for the major which include the following courses:

Course Number	Course Title	Semester Hours
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 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	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
CHE 409	Instrumental Methods	3
CHE 409L	Instrumental Methods Lab	1
CHE	Elective	3
CHE	Elective	3
CHE	Elective	3
		48

Curriculum for a Minor in Chemistry

Twenty- semester hours are required for the minor which include the following courses:

Course Number	Course Title	Semester Hours
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 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	1
		20

[5]Chemistry Major Electives:

Course Number	Course Title	Semester Hours
CHE 303	Inorganic Chemistry	3
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 I	1
CHE 411	Organic Quantitative Analysis	3
CHE 412	Organo metallic Chemistry	3

Mathematics Minors:

Course Number	Course Title	Semester Hours
MTH 126	Calculus II	4
MTH 227	Calculus III	4
MTH 237	Introduction to Linear Algebra	3
MTH 238	Applied Differential Equations	3
MTH 453	Probability and Statistics	3
[6]MTH	Elective	3
		20

Approved [6]Mathematics Electives

Course Number	Course Title	Semester Hours
MTH 301	Abstract Algebra	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

Biology Minors:

Course Number	Course Title	Semester Hours
BIO 103, 103L	Principle of Biology with Lab	4
BIO	Elective	4
BIO	Elective	4
[4]BIO	Elective	3
[4]BIO	Elective	3
		18

[4]Two of the BIO Elective courses may be taken without Labs (i.e. 3 semester hours each).

Approved [4]Biology Electives:

BIO 202, 202L	Comparative vertebrate Anatomy (with Lab)	3 (or 4)
BIO 203, 203L or 204, 204L	General Botany I or II (with lab)	3 (or 4)
BIO 221, 221L or 222, 222L	Human Anatomy & Physiology I or II (with Lab)	3 (or 4)
BIO 330, 330L	Microbiology (with lab)	3 (or 4)
BIO 434, 434L	Principles of Physiology (with lab)	3 (or 4)
BIO 203, 203L or 204, 204L	General Botany I or II (with lab)	3 (or 4)
BIO 340, 340L	Embryology (with lab)	3 (or 4)

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. Taking any or all of these applied chemistry courses will not earn a student a minor in chemistry. All advisors should consult the program area of chemistry to determine which course best fits a given set of circumstances.

Applied Courses in Chemistry

Course Number	Course Title	Semester Hours
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)

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 101L** (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. **(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. The course includes 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, and 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. Included are 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 topics are 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 1 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 topics including 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. **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 and 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 1 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 II* - 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 221L *Analytical Chemistry II 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 including 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 301** (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 302** (Offered Fall, Spring, and Summer)

CHE 303 Inorganic Chemistry – 3hrs. This course is provided to develop student's understanding in the basic concepts of bonding in molecules, introduction to symmetry, chemistry of the main group elements, coordination chemistry of the transition elements, organometallic chemistry, solid state chemistry, bioinorganic chemistry, chemistry of the lanthanide, and actinide elements. Credit for this course will be counted toward the degree requirement. **Prerequisites CHE 101, 101L, CHE 102, 102L**. (Offered Fall)

CHE 306 *Chemical Synthesis* - 3 hrs. – Course 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 221L; CHE 302 and CHE 302L** (Offered Fall) **Co-requisite: CHE 401L** (Offered Fall)

CHE 401L *Physical Chemistry I Lab* - 1 hrs. 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 221L; CHE 301 and CHE 301L; and CHE 302 and CHE 302L. Co-requisite: CHE 401** (Offered Fall)

CHE 402 *Physical Chemistry* - 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 hrs. 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; 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. A course 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. A course 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 302L** (Offered Fall)

CHE 407L *Biochemistry I Lab* - 1 hrs. 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 hrs. (one 3-hour lab). 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 221L; and CHE 301 and CHE 301L** (Offered Fall)

CHE 409L *Instrumental Methods and Materials Evaluation Laboratory* – 1 hr. (one 3-hour lab). 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. (Two, 1-hour lectures and one 3-hour lab) 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 221L; and CHE 302 and CHE 302L** (Offered as needed)

CHE 412 Organometallic Chemistry – 3hrs. This course will provide a detailed understanding into the transition metal organometallic chemistry. It will develop the student's understanding in bonding theory, synthesis and reactivity of sigma – bonded alkyls and aryls, metal carbonyls, and pi-bonded organic ligands such as alkenes, alkynes, allyls, and arenes. Applications of organometallic complexes in organic synthesis and industrial catalysis. Credit for this course will be counted toward the degree requirement. **Prerequisites: CHE 301, 301L, CHE 302, 302L, CHE 303.** (Offered Spring Semester).

DEPARTMENT OF PHYSICS

133 V. Murray Chambers Building
Tel: (256)372-8132 or (256)372-5305
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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, and space 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 125,126, 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:

.**B.S. IN PHYSICS**. There are seven (7) options.

Mathematics Option: MTH 237, 453, 6 elective credit hours of MTH above 300 level, and 6 credit hour of MTH free elective. (18 hrs.)

Chemistry Option: CHE 201, 201L, 202, 202L, 301, 301L 302 and 302L, 401
(19 hrs.)

Mechanical Option: ME 101, 101L, 231, 301, 360, 360L, 312 & 312L.(16 hrs.)

Space Science Option: PHY 440, 441, 442, 443, 444. (18 Hrs.)

Electrical Option: EE 201L, 202, 203, 203L, 301, and 3 credit hours of EE free electives (17 hrs.)
Civil Option:
(1) Structural Concentration: EGC 101, 207, CE 306, 308; one elective from CE 401, 402, 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.)

Computer Science Option: CMP 309, 311, 329, 485, 490, and 3 credit hours of free CMP elective.
(18hrs)

ELECTIVES

Course Number	*Course Title*	*Sem. Hrs.*
PHY 332	Electricity & Magnetism II	3
PHY 431	Intro to Statistical Mech.	3
PHY 453	Nuclear Physics	3
PHY 455	Fundamentals of Nanotechnology	3
PHY 460	Selected Topics in Physics	3

**Extra electives for space science option only from University of Alabama in Huntsville catalog.

PHY/AST 371	Introduction to Astrophysics	3
PHY/AST 471	Steller Atmospheres and Interiors	3
PHY 531	Introduction to Plasma Phys.	3

Eighteen credit hours in physics courses are required for a physics minor. PHY 105, PHY 106, PHY 201, PHY 303, and PHY321 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 faculty members in the department who are working on research projects funded by NASA, NSF, DOD and other federal agencies
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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 Society of Physics Students (SPS) and attend annually National Conference of Black Physics Students (NCBPS). We also have a national chapter of Optical Society of America (OSA), Materials Research Society (MRS) and SPIE, The International Society of Optical Engineering..

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

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	1	[2]ENG	102	Composition II	3
[1]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	4
CMP	102	Intro to Programming I	3				**18**
			19				

[1]ENG 103 may be taken by international students.
[2]ENG 104 may be taken by international students.

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
[3]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	4	PHY	252L	Modern Physics Lab	3
			15				**16**

[3]PED 101 or MSC 101 may be taken
(Junior and Senior Years Choose Appropriate Option A/B/C/D/E/F Below.

MECHANICAL ENGINEERING OPTION

127 Credit Hours

(Note: This program concentration is not an engineering program and should not be confused with the Mechanical Engineering program listed under the School of Engineering and Technology which is accredited by the Engineering Accreditation Commission of (ABET))

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ART	101	Art Appreciation	3	HIS	102	World History II	3
HIS	101	World History I	3	ME	301	Anal & Instru & Phys Sys	3
ME	101	Intro to Mech Engr	3	ME	301L	Anal & Instru & Phys Sys	1
ME	101L	Intro to Mech Engr Lab	1	PHY	322	Mechanics II	3
ME	231	Strength of Mat.	3	PHY	331	Elec. & Magnetism I	3
PSY	201	Intro to Psychology or		PHY		Elective	3
SOC	201	Intro to Sociology	3				**16**
PHY	321	Mechanics I	3				
			16				

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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 Lab	1	ME	312L	Heat & Mass Trans Lab	1
PHY		Elective	3	ME	312	Heat & Mass Transfer	3
			13				**13**

ELECTRICAL ENGINEERING OPTION

127 Credit Hours

(Note: This program concentration is not an engineering program and should not be confused with the Electrical Engineering program listed under the School of Engineering and Technology which is accredited by the Engineering Accreditation Commission of (ABET))

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
HIS	101	World History I	3	HIS	102	World History II	3
ART	101	Art Appreciation	3	EE	201	Linear Circuit Analysis I	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	l
PHY		Elective	3	PHY	331	Elec. & Magnetism I	3
PSY	201	Intro to Psychology or		PHY	322	Mechanics II	3
SOC	201	Intro to Sociology	3				**16**
			16				

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	Signals and System	3
EE	202	Linear Circuit Analysis I	3	EE		Free Elective	3
PHY		Elective	3				**12**
			15				

CIVIL ENGINEERING OPTION

128 Credit Hours

(Note: This program concentration is not an engineering program and should not be confused with the Civil Engineering program listed under the School of Engineering and Technology which is accredited by the Engineering Accreditation Commission of (ABET))

I. Structural Concentration

Junior Year

First Semester			**Sem. Hrs.**	**Second Semester**			**Sem. Hrs.**
EGC	101	Enginr Drawg & Graph	3	HIS	102	World History II	3
HIS	101	World History I	3	PSY	201	Intro to Psychology or	
ART	101	Art Appreciation	3	SOC	201	Intro to Sociology	3
PHY	321	Mechanics I	3	PHY	322	Mechanics II	3
PHY		Elective	3	PHY	331	Elec. & Magnetism I	3
			15	EGC	207	Strength of Materials	3
				CE	308	Soil Mechanics	3
							18

Senior Year

First Semester			**Sem. Hrs.**	**Second Semester**			**Sem. Hrs.**
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	3
PHY		Elective	3				**12**
			15				

II. Environmental Concentration

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
HIS	101	World History I	3	HIS	102	World History II	3
ART	101	Art Appreciation	3	PSY	201	Intro to Psychology or	
PHY	321	Mechanics I	3	SOC	201	Intro to Sociology	3
EGC	101	Engr. Drwg. & Graphics	3	PHY	322	Mechanics II	3
EGC	305	Fluid Mechanics	3	PHY	331	Elec. & Magnetism I	3
			15	CE	304	Environmental Engr.	3
							15

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	Hydraulic Engr. & Design	3	CE	305	Hydrogeology	3
ECO	200	Basic Economics	**3**	**PHY**		**Elective**	**3**
			12	CE		Free Elective	3
							15

COMPUTER SCIENCE OPTION

128 Credit Hours

(Note: This program concentration is not an engineering program and should not be confused with the Mechanical Engineering program listed under the School of Engineering and Technology which is accredited by the Computing Accreditation Commission of (ABET))

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
HIS	101	World History I	3	HIS	102	World History II	3
ART	101	Art Appreciation	3	PSY	201	Intro to Psychology or	
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	3	CMP	311	Intro to Simulation	3
			18				**15**

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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.	3
CMP	490	High Perform Computing	3	CMP		Elective	3
PHY		Elective	3				**12**
			15				

CHEMISTRY MINOR

126 Credit Hours

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
HIS	101	World History I	3	HIS	102	World History II	3
ART	101	Art Appreciation	3	PSY	201	Intro to Psychology or	
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	1	CHE	202L	Analytical Chem II Lab	1
			16	PHY	331	Elec. & Magnetism I	3
							16

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	3	ECO	200	Basic Economics	3
			13				**13**

MATHEMATICS MINOR

128 Credit Hours

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
HIS	101	World History I	3	HIS	102	World History II	3
ART	101	Art Appreciation	3	PSY	201	Intro to Psychology or	
PHY	321	Mechanics I	3	SOC	201	Intro to Sociology	3
PHY		Elective	3	PHY	322	Mechanics II	3
MTH		Elective	3	MTH	237	Intro to Linear Algebra	3
			15	PHY	331	Elec & Magnetism I	3
							15

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
PHY	421	Intro to Quantum Mech	3	PHY	341	Heat & Thermodynamics	3
PHY	401	Optics	3	PHY	451	Intro to Solid State Physic	3
MTH	453	Probability and Statistics	3	MTH		Elective	3
ECO	200	Basic Economics	3	MTH		Elective	3
PHY		Elective	3	MTH		Elective	3
			15				**15**

SPACE SCIENCE OPTION

128 Credit Hours

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem Hrs.
HIS	101	World History I	3	HIS	102	World History II	3
ECO	200	Basic Economics	3	PSY	201	Intro to Psychology or	
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	3	PHY	322	Mechanics I	3
			18				**15**

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem Hrs.
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 Project	4
CMP		Elective	3	*PHY		Elective	3
			12				**15**

*****Physics Electives can also be taken from the following courses at the University of Alabama in Huntsville (UAH).

PHY/AST	371	Introduction to Astrophysics	3
PHY/AST	471	Stellar Atmospheres and Interiors	3
PHY	531	Introduction 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 *Physical Science I* – 3 hrs. A course covering force, motion, gravitation, energy, energy in action, electricity and magnetism, waves, the nucleus, and the atom. **Prerequisites: MTH 101** (Offered Fall, Spring, and Summer).

PHY 101 L *Physical Sciences Lab I* – 1 hr. A 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 and thermodynamics, electricity and magnetism, optics, and matter. **Prerequisites: MTH 101** or simultaneous (Offered Fall, Spring and Summer)

PHY 102 *Physical Science II* – 3 hrs. A course encompassing 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. **Prerequisites: PHY 101, MTH 101,** (Offered Fall, Spring, and Summer).

PHY 102 L *Physical Sciences Lab II* – 1 hr. The laboratory course to accompany PHY 102 Survey of Physical Sciences. This hands-on experience illustrates basic principles of chemistry, geology, astronomy, and weather. **Prerequisites: MTH 102 or simultaneous** (Offered Fall, Spring and Summer)

PHY 103 *General Physics I* – 4 hrs. 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, Newton'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. At least ten experiments will be performed in the laboratory. **Prerequisites: MTH 112 and MTH 113** (Offered Fall and Summer)

PHY 104 *General Physics II* – 4 hrs. The second part of an algebra based physics course covering 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. At least ten experiments will 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. The second part of a calculus–based physics course designed for sciences, engineering and technical majors. The goal is the same as for Physics 1. 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. 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. 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. A course consisting of three hours of lecture; 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, 126** (Offered Spring)

PHY 321 *Mechanics I* – 3 hrs. A course covering 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. A continuation of PHY 321. The course 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 dignorable 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. An intermediate level course covering 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. The study of magnetic field (Biot's and Savart's Law, Ampere's law), Faraday's Law of Induction, Inductance, and magnetic energy, AC circuits, Maxwell's equations, electromagnetic waves, and electrodynamics. **Prerequisites: PHY 331** (Offered Fall)

PHY 341 *Heat and Thermodynamics* – 3 hrs. 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. 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 Eigen value 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. 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. Opportunity for 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. , A written report and a presentation of research activities is required **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 445 *Elements of Magnetospheric Physics* – 3 hrs. Formation of the magnetosphere by the interaction of solar wind plasma with the Earth's magnetic field. The structure of the magnetosphere: the inner and outer magnetospheres and the magnetotail. Magnetosphere- ionosphere coupling and the generation of electric currents between the magnetosphere and the ionosphere. Waves in the magnetospheric plasma and geomagnetic pulsations. Geomagnetic disturbances, auroras and

geomagnetic storms. Particle acceleration in the magnetosphere and radiationbelt formation. The effects of geomagnetic activity and radiation belts on humans, ground-based facilities and satellites. Diurnal, seasonal and solar cycle variations of geomagnetic activity. Space weather and forecast of geomagnetic activity. The magnetospheres and geomagnetic disturbances on other planes of the solar system. **Prerequisite: PHY 331 & PHY 332** (Offered Fall)

PHY 451 *Introduction to Solid State Physics* – 3 hrs. A course including 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. A course including 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 455 *Fundamentals of Nano-Technology* – 3 hrs. This is an interdisciplinary course dealing with applications of nanotechnology to sciences and engineering. Topics include instrumentation in Nanotechnology like electron microscopes, atomic force microscopes and molecular beam epitaxy; fabrication of nanopowders, carbon nanotubes, nanomaterials and their applications to insulation materials, machine tools, batteries and medical implants; electrical and mechanical properties of carbon nanotubes, nanobiosensors, photonic applications of nanotechnology including nanolithography; nanoelectronics with nanofabrication using E- beam and UV lithography, single electron transistors, new effects of nanoparticle coatings including application to solar cells; future applications including quantum computing, nanorobots and nanomedicine. **Prerequisites: ????**(Offered Fall)

PHY 460 *Selected Topics in Physics* – 3 hrs. A course designed to provide students an opportunity to study applied topics that are not offered in other existing physics courses. When this course 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 include 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, discus and javelin. Physics of Basketball shooting, dribbling, passing and rebounding; baseball pitching and hitting and the fly ball trajectory; throwing the football; athletic performance trends in the Olympics, and 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 School of Business at Alabama A&M University is to provide quality management education programs to a diverse student population at the undergraduate and graduate levels. The School utilizes effective teaching, advising, applied scholarship, and community involvement to produce graduates who will become leaders, managers, entrepreneurs, and productive employees in the private and public sectors.

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.

Opportunities are provided for all students to gain leadership skills through involvement with student organizations and to gain practical experiences through co-ops and internships in cooperation with business, government and non-government organizations. A majority of the faculty members are of international origin holding degrees from the U.S. Students are exposed to diversity and international perspectives. Faculty members are highly caring of their students and 80% of the full-time faculty members have doctoral degrees. They are committed to excellence in teaching and are engaged in scholarly activities. They are also active in institutional, professional and community service.

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

To support its mission, the School is organized in three departments: Department of Accounting; Department of Economics and Finance; and Department of Management and Marketing. It has two outreach centers: Center for Entrepreneurship and Economic Development (CEED) and Small Business Development Center (SBDC). The School has 35 full-time and 15 part-time faculty members. Its class sizes are kept low to facilitate classroom discussion and individual attention and mentoring. The total number of students in the School is approximately 1000. All business students are required to take national exit tests in nine business disciplines.

The School offers the Bachelor of Science degree in **accounting, economics, finance, management, and marketing.** It also offers the Bachelor of Science degree in business administration with concentrations in **international business, logistics and supply chain management, management information systems and office systems management.** The School offers minors in accounting, business administration, economics, finance, management, international business and marketing. Information about the **Master of Business Administration (MBA)** degree is in the AAMU Graduate Bulletin.

According to the Summer 2008 Salary Survey of National Association of Colleges and Employers (NACE) (data are reported to NACE by colleges and universities nationwide) business graduates (BA or BS) were offered average starting salaries well above the salary levels for all other areas except engineering and computer science. Average salary levels were: Accounting-$48,085; Economics-$50,507; Management-$45,915; Finance-$48,547; Marketing-$42,053; MIS-$52,418; Computer Science-$60,416; Mechanical Engineering-$57,009; and Chemical Engineering-$63,165.

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 administers the Small Business Development Center (SBDC) to primarily serve the North East Alabama Region.

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 and private donors. 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 offices and the Office of the Dean.

Internships and cooperative education opportunities are available for students in the School of Business. Most are paid positions, however, 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. Other positions are available with businesses throughout the United States. Information on many positions is available through Career Development Services. Advisors and departmental chairs are good sources of information about internship and co-op opportunities for business majors.

SCHOOL STUDENT ORGANIZATIONS

Discipline specific student organizations are available for students through 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.

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 or Health or Military Science
HIS	History Elective		

* Must earn grade of C or better.

\+ Students may demonstrate their competency in algebra at the MTH 112 C level and satisfy the University general education and School of Business math requirement by passing MTH 120 or MTH 125 or higher calculus with a grade of A or B.

- Complete the School of Business Core Curriculum (42 semester credit hours)

ACC 203	Introduction to Accounting I	MGT 413	Production Operation Management
ACC 204	Introduction to Accounting II	MGT 442	Strategic Management/Policy
ECO 271	Business Statistics I	MKT 315	Principles of Marketing
FIN 315	Principles of Finance	MTH 120	Calculus and Its Applications
MGT 207	Legal Environment and Ethics	OSM 310	Business Communications
MIS 213	Computer Applications in Business	OSM 315	Business and Professional Writing
	Management Information Systems Course		*International Business Course
MGT 315	Principles of Management		

*Which international business course to be taken is determined by the major being sought and includes: ACC 461, ECO 446, FIN 487, MGT 465, MKT 464, LOG 409

- Complete all major requirements. Listed for each major program in the departmental sections of the Bulletin.
- Complete the minimum number of semester credit hours required for graduation

Accounting	125	Business Administration	
Economics	122	International Business	122
Finance	122	Logistics & Supply Chain Mgmt.	122
Management	122	Management Information Systems	122
Marketing	122	Office System Management	122

- Earn a passing score on the Senior Exit Exam as established for the AAMU business program.
- 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 course in the business core.
- 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
- Maintain a cumulative grade point average of 2.0 or above for all courses required for a minor in all business fields.

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.

Any student pursuing a minor in the School of Business must fulfill the pre-requisite requirements for any of the 18 credit hour courses required for the minor.

All business electives must be upper-level (300 or 400) courses unless otherwise stated.

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.

DEPARTMENT OF ACCOUNTING

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INTRODUCTION

The role of the accountant has been transformed in recent years. Technological advances have created an environment of rapid change, 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 rapidly increasing demand, the Accounting curriculum provides a thorough education in the 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, science, and business background, is designed to prepare students:

- to enter the accounting profession in public accounting, industry, or the public sector;
- for future growth and development within the accounting profession;
- for advanced studies in accounting and other business fields, and
- 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.

PROGRAM OFFERINGS

The Department offers a major leading to the Bachelor of Science degree in Accounting.

SCHOLARSHIPS

Please refer to the School of Business Scholarship section for more information on scholarships available to all business majors.

DEPARTMENT STUDENT 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.

Accounting Club is an organization that, combined with NABA, helps students get possible summer or semester internships, work together as a team during community service and learn more about different aspects of accounting.

AWARDS/RECOGNITIONS

The Department of Accounting honors two graduating accounting senior (with the two highest undergraduate GPA) each academic year with the "Outstanding Academic Achievement in Accounting" award.

The Alabama Society of Certified Public Accountants honors the top accounting graduating senior (selected by the accounting faculty and students) each academic year with the "Outstanding Accounting Achievement" award.

DEPARTMENTAL REQUIREMENTS FOR GRADUATION

University General Education Curriculum (44 semester credit hours): ENG 101, ENG 102, literature sequence I & II, ENG 205, fine arts elective, social science elective, MTH 112, history elective, ECO 231, ECO 232, two science electives with corresponding labs, ORI 101, physical education or health or military science.

School of Business Core Requirements (42 semester credit hours): ACC 203, ACC 204, ECO 271, FIN 315, MGT 207, MIS 213, MGT 315, MGT 318, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315.

Requirements for Major in Accounting (39 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, ACC 351, ACC 421, ACC 441, ACC 450, ACC 461, ACC 472, three SCH of upper-level business electives, and six SCH of non-business electives.

Requirements for Minor in Accounting (18 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, and any one of the following courses: ACC 351, ACC 403, ACC 421, ACC 441, ACC 450, ACC 461, ACC 466, ACC 472. Non-business students pursuing the accounting minor will have to complete the pre-requisites for ACC 301, viz., ACC 203 and ACC 204.

BULLETIN 2008 – 2011

ACCOUNTING

125 CREDIT HOURS

FRESHMAN YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	120	Calculus and its Applications	3
MTH	112	Pre-Calculus Algebra[1, 2]	3			Science Elective with Lab	4
		Science Elective with Lab	4			Fine Arts Elective	3
		History Elective	3	MIS	213	Computer Applications in Business	3
PED		Physical Education[3]	2				16
			16				

SOPHOMORE YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ENG		Literature Sequence I	3	ENG		Literature Sequence II	3
ACC	203	Introduction to Accounting I	3	ACC	204	Introduction 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	Principles of Macroeconomics	3	ECO	232	Principles of Microeconomics	3
			15				15

JUNIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ACC	301	Intermediate Accounting I	3	ACC	302	Intermediate Accounting II	3
ACC	303	Cost Accounting	3	MGT	318	Business Law	3
MKT	315	Principles of Marketing	3	MGT	413	Production Operation Management	3
FIN	315	Principles of Finance	3	ACC	351	Federal Tax Accounting I	3
MGT	315	Principles of Management	3			Non-Business Elective	3
OSM	310	Business Communication	3				15
			18				

SENIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ACC	306	Intermediate Accounting III	3	ACC	450	Accounting for Non-Profit Orgs.	3
ACC	421	Advanced Accounting	3	ACC	472	Accounting Information Systems	3
ACC	441	Auditing I	3	MGT	442	Strategic Management and Policy	3
ACC	461	Seminar in International Accounting	3	OSM	315	Professional Writing	3
		Non-Business Elective	3			Upper-level Business Elective	3
			15				15

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 and Spring).

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 and Spring).

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 and Spring).

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 III* – 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 *Accounting for Non-Profit Organizations* – 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: ACC 302 and 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 AND FINANCE

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INTRODUCTION

The analytical and general knowledge acquired through programs in economics and finance 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.

MISSIONS/OBJECTIVES

The objective of the Department is to provide sound knowledge of economics and finance taking into consideration the changing nature of the economy and business operations. Understanding of the business and economic environment requires foundation in the analytical techniques used in economics and finance.

PROGRAM OFFERINGS

The Department of Economics and Finance offers majors leading to a bachelor of science degree in economics, and a bachelor of science degree in finance. While majors, concentration and minors are designed for students who aim toward careers in the respective or related fields, knowledge of economics and finance is essential to every educated person.

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.

INTERNSHIPS

ECO 490/ FIN 490, Internship in Economics/ Finance: Students majoring in economics and finance are encouraged to take this course. Internship placement must be approved.

For a discussion on other internship opportunities, see the School of Business section of the Bulletin.

DEPARTMENT STUDENT 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.

TVA Investment Challenge Program: Tennessee Valley Authority (TVA) made available $200,000 out of its decommissioning funds for each of the 25 universities in its service zone. Alabama A&M University is one of those 25 universities. The students of the Economics and Finance 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.

AWARDS/RECOGNITION

The Department of Economics and Finance recognizes a student for "Outstanding Academic Achievement" in each program in the Department in the Spring semester of each year.

DEPARTMENTAL REQUIREMENTS FOR GRADUATION

University General Education Curriculum (44 semester credit hours): ENG 101, ENG 102, literature sequence I & II, ENG 205, fine arts elective, social science elective, MTH 112, history elective, ECO 231, ECO 232, two science electives with corresponding labs, ORI 101, physical education or health or military science.

School of Business Core Requirements (45 semester credit hours): ACC 203, ACC 204, ECO 271, FIN 315, MGT 207, MIS 213, MIS 315, MGT 315, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315. The international business course is listed with the major requirements.

Requirements for Major in Economics (36 semester credit hours): ECO 272, ECO 401, ECO 402, ECO 411, ECO 413, ECO 414, ECO 444, ECO 446, six SCH of upper-level economics electives and six SCH of non-business electives.

Requirements for Major in Finance (36 semester credit hours): ECO 272, ECO 446, FIN 316, FIN 317, FIN 432, FIN 449, FIN 487, FIN 489, six SCH of 400-level finance courses, six SCH of non-business electives.

Requirements for Minor in Economics, Business Majors (18 semester credit hours): ECO 272, ECO 401 or ECO 402, and 12 SCH of approved economics classes.

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), ECO 271, ECO 401 or ECO 402 and 6 SCH of approved economics or business electives, to complete 18 semester credit hours.

Requirements for Minor in Finance, Business Majors (18 semester credit hours): ECO 272, FIN 316 and 12 SCH of approved finance electives.

Requirements for Minor in Finance, Non-Business Majors (18 semester credit hours): ECO 271, FIN 315, FIN 316, 3 SCH of approved business electives, and 6 SCH of approved finance electives.

BULLETIN 2008 – 2011

ECONOMICS

122 Credit Hours

FRESHMAN YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	120	Calculus and its Applications	3
MTH	112	Pre-Calculus Algebra[1, 2]	3			Science Elective with Lab	4
		Science Elective with Lab	4			Fine Arts Elective	3
		History Elective	3			Social Science Elective	3
PED		Physical Education[3]	2				16
			16				

SOPHOMORE YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ECO	231	Principles of Macroeconomics	3	ECO	232	Principles of Microeconomics	3
ACC	203	Introduction to Accounting I	3	ACC	204	Introduction to Accounting II	3
ENG	205	General Speech	3	ENG		Literature Sequence II	3
ENG		Literature Sequence I	3	MGT	207	Legal Environment and Ethics	3
MIS	213	Computer Applications in Business	3	ECO	271	Business Statistics I	3
			15				15

JUNIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ECO	272	Business Statistics II	3	MIS	315	Principles of Mgmt. 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	3	MKT	315	Principles of Marketing	3
			15				15

SENIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ECO	414	Managerial Economics	3	MGT	442	Strat. Management and Policy	3
ECO	446	International Trade & Policy	3	ECO	411	Contemp. Issues in Economics	3
MGT	413	Production/Operations Mgmt.	3	ECO	444	Public Sector Economics	3
		Upper-level Economics Elective	3			Upper-level Economics Elective	3
		Non-Business Elective	3			Non-Business Elective	3
			15				15

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. Students who have received a grade of C or better in Basic Economics (ECO 200) and decide to switch to or choose a major in the School of Business, can substitute ECO 200 for Principles of Macroeconomics (ECO 231) in their business course work. (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).

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 as needed).

ECO 301 *Personal Financial Planning* – 3 hrs. The course covers the knowledge and methodologies used in planning and controlling household financial decisions to achieve short and long term financial security. It emphasizes consumer savings, budget management, credit management, banking practices, real estate transactions, tax planning, investment practices, risk management with insurance, and retirement planning. Prerequisite: None (Offered in Fall).

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 economic. 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 macro-economy; monetary policy. Prerequisite ECO 231 (Offered Fall or as needed).

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 *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.

ECO 434 *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.

ECO 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.

ECO 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 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 Spring).

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.

BULLETIN 2008 – 2011

FINANCE

122 Credit Hours

FRESHMAN YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	120	Calculus and its Applications	3
MTH	112	Pre-Calculus Algebra[1, 2]	3			Science Elective with Lab	4
		Science Elective with Lab	4			Fine Arts Elective	3
		History Elective	3			Social Science Elective	3
PED		Physical Education[3]	2				16
			16				

SOPHOMORE YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ECO	231	Principles of Macroeconomics	3	ECO	232	Principles of Microeconomics	3
ACC	203	Introduction to Accounting I	3	ACC	204	Introduction to Accounting II	3
ENG	205	General Speech	3	ENG		Literature Sequence II	3
ENG		Literature Sequence I	3	MGT	207	Legal Environment and Ethics	3
MIS	213	Computer Applications in Business	3	ECO	271	Business Statistics I	3
			15				15

JUNIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ECO	272	Business Statistics II	3	MIS	315	Principles of Mgmt. 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 Applications in Finance	3
MKT	315	Principles of Marketing	3	FIN	432	Investment	3
			15				15

SENIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
FIN	449	Money and Capital Market	3	MGT	442	Strat. Management and Policy	3
ECO	446	International Trade & Policy	3	FIN	487	International Financial Management	3
MGT	413	Production/Operations Mgmt.	3	FIN	489	Special Topics in Finance	3
		400-level Finance Elective	3			400-level Finance Elective	3
		Non-Business Elective	3			Non-Business Elective	3
			15				15

COURSE DESCRIPTIONS

FIN 301 *Personal Financial Planning* – 3 hrs. The course covers the knowledge and methodologies used in planning and controlling household financial decisions to achieve short and long term financial security. It emphasizes consumer savings, budget management, credit management, banking practices, real estate transactions, tax planning, investment practices, risk management with insurance, and retirement planning. Prerequisite: None (Offered in Fall).

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 may other types of investments in terms of their income and growth prospects from the standpoint of individual and institutional investors. Prerequisite: FIN 315. (Offered Fall).

FIN 433 *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. Prerequisite: FIN 315 (Offered Fall, Spring, Summer).

FIN 434 *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. Prerequisite: FIN 315 (Offered Fall, Spring, Summer).

FIN 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. Prerequisite: FIN 315 (Offered Fall, Spring, Summer).

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 Spring).

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 Spring).

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 Fall).

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.

DEPARTMENT OF MANAGEMENT AND MARKETING

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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 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 Bachelor of Science degree in management, marketing, and business administration with concentrations in international business, logistics and supply chain management, management information systems, and office systems management. The department also offers minors in management and marketing.

SCHOLARSHIPS

Please refer to the School of Business Scholarship section for more information on scholarships available to all business majors.

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 internship through the Kauffman Entrepreneurial Internship Program, which is administered by the Department. The Center for Entrepreneurship and Economic Development (CEED) 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.

DEPARTMENT STUDENT 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.

Association of Logistics and Supply Chain Management (ALSCM) - is an organization dedicated to providing professional growth and development of student members in the fields of transportation, logistics and supply chain management. ALSCM is also associated with Council of Supply Chain Management Professionals (CSCMP) and Institute of Supply Chain Management (ISM).

Council of Supply Chain Management Professionals (CSCMP) – is the preeminent worldwide professional association of supply chain management that provides educational opportunities and relevant information via a variety of programs, services, and activities. Membership is for all full-time undergraduate and graduate students.

Institute of Supply Chain Management (ISM) – is a not-for-profit association that provides education, development, and advancement of the profession and the expansion of professional skills and knowledge. Membership is for all full-time undergraduate and graduate students.

Students in Free Enterprise, Inc. (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.

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.

The **Business Communications Organization** (BCO) is established for the purpose of promoting interest in building strong business communication skills, providing fellowship among students and faculty, representing student needs and wants in regard to business communication, and providing a forum for the presentation of innovative ideas to the benefit of the University and community.

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, management information systems, and office systems management.

DEPARTMENTAL REQUIREMENTS FOR GRADUATION

University General Education Curriculum (44 semester credit hours): ENG 101, ENG 102, literature sequence I & II, ENG 205, fine arts elective, social science elective, MTH 112, history elective, ECO 231, ECO 232, two science electives with corresponding labs, ORI 101, physical education or health or military science.

School of Business Core Requirements (45 semester credit hours): ACC 203, ACC 204, ECO 271, FIN 315, MGT 207, MIS 213, MIS 315, MGT 315, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315. The international business course is listed with the major requirements.

Requirements for Major in 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 SCH of non-business elective and nine SCH of foreign language.

Requirements for Major in Business Administration, Logistics and Supply Chain Management Concentration (36 semester credit hours): LSM 201, LSM 305, LSM 323, LSM 340, LSM 409, LSM 428, six SCH of upper-level logistic electives from the following: LSM 407, LSM 411, LSM 422, LSM 426, LSM 427, LSM 435, MGT 397, six SCH of non-business electives, and six SCH of upper-level business electives.

Requirements for Major in Business Administration, Management Information Systems Concentration (36 semester credit hours): MIS 331, MIS 345, MIS 356, MGT 458, MIS 479, MIS 489, nine SCH of approved management information systems electives, three SCH of upper-level business elective and six SCH of non-business electives.

Requirements for Major in 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 SCH of non-business electives.

Requirements for Major in Management (36 semester credit hours): ACC 219, MGT 332, MGT 352, MGT 397, MGT 433, MGT 458, six SCH of upper-level management electives, six SCH of upper-level business electives and six SCH of non-business electives.

Requirements for Major in Marketing (36 semester credit hours): MKT 316, MKT 323, MKT 410, MKT 411, MKT 464, MKT 477, MKT 487, six SCH of upper-level marketing courses, nine SCH of non-business electives.

Requirements for Minor in Management, Non-Business Majors (18 semester credit hours) MGT 207, MGT 315, MGT 332, MGT 413, MGT 433, three SCH of non-management upper-level business electives approved by the Chair of Management and Marketing.

Requirements for Minor in Management, Business Majors (18 semester credit hours): MGT 332, MGT 352, MGT 397, MGT 433, MGT 458, three SCH of upper-level management elective.

Requirements for Minor in Marketing, Non-Business Majors (18 semester credit hours): MKT 315, MKT 316, MKT 410, MKT 477, MKT 487, 3 SCH of non-marketing upper level business elective approved by the Chair of Management and Marketing.

Requirements for Minor in Marketing, Business Majors (18 semester credit hours): MKT 316, MKT 323, MKT 410, MKT 464, MKT 477, MKT 487.

Requirements for Minor in International Business (18 semester credit hours): ACC 461, ECO 446, FIN 487, MGT 458, MKT 464, LSM 409, MGT 465.

BUSINESS ADMINISTRATION
International Business Concentration
122 Credit Hours

FRESHMAN YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
ORI 101	Survival Skills	1		ENG 102	Composition II[1]	3
ENG 101	Composition I[1]	3		MTH 120	Calculus and its Applications	3
MTH 112	Pre-Calculus Algebra[1, 2]	3			Science Elective with Lab	4
	Science Elective with Lab	4			Fine Arts Elective	3
	History Elective	3			Foreign Language Elective	3
PED	Golf or Tennis[3]	2				16
		16				

SOPHOMORE YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
ACC 203	Introduction to Accounting I	3		ACC 204	Introduction to Accounting II	3
ECO 231	Principles of Macroeconomics	3		ECO 232	Principles of Microeconomics	3
ENG	Literature Sequence I	3		ECO 271	Business Statistics I	3
ENG 205	General Speech	3		ENG	Literature Sequence II	3
MIS 213	Computer Applications in Business	3		MGT 207	Legal Environment and Ethics	3
	Social Science Elective	3			Foreign Language Elective	3
		18				18

JUNIOR YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
ACC 219	Managerial Accounting	3		MIS 315	Principles of Mgmt. 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 Communication	3		OSM 315	Professional Writing	3
	Foreign Language Elective	3		MKT 464	Global Marketing	3
		15				15

SENIOR YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
MGT 465	International Management	3		MGT 442	Strat. Management and Policy	3
ECO 446	International Trade & Policy	3		MGT 458	International Business	3
MGT 413	Production/Operations Mgmt.	3		ACC 461	Seminar in International Accounting	3
	Non-Business Elective	3		FIN 487	International Financial Management	3
		12				12

BUSINESS ADMINISTRATION
Logistics and Supply Chain Management Concentration
122 Credit Hours

FRESHMAN YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	120	Calculus and its Applications	3
MTH	112	Pre-Calculus Algebra[1, 2]	3			Science Elective with Lab	4
		Science Elective with Lab	4			Fine Arts Elective	3
		History Elective	3			Social Science Elective	3
PED		Golf or Tennis[3]	2				16
			16				

SOPHOMORE YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ACC	203	Introduction to Accounting I	3	ACC	204	Introduction to Accounting II	3
ECO	231	Principles of Macroeconomics	3	ECO	232	Principles of Microeconomics	3
ENG		Literature Sequence I	3	ECO	271	Business Statistics I	3
ENG	205	General Speech	3	ENG		Literature Sequence II	3
MIS	213	Computer Applications in Business	3	MGT	207	Legal Environment and Ethics	3
			15	LSM	201	Intro. Log. & Supply Chain Mgmt.	3
							18

JUNIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
MGT	315	Principles of Management	3	OSM	315	Professional Writing	3
LSM	305	Purchase/Supply Chain Mgmt.	3	LSM	323	Transportation Management	3
MKT	315	Principles of Marketing	3	LSM	340	Advanced Log./Supply Chain Mgmt.	3
FIN	315	Principles of Finance	3	MIS	315	Principles of Mgmt. Info. Systems	3
OSM	310	Business Communication	3			Upper-level Business Elective	3
			15				15

SENIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
LSM	409	International Logistics	3	MGT	442	Strategic Management and Policy	3
MGT	413	Production/Operations Mgmt.	3			Upper-level Logistics Elective	3
LSM	428	Strategic Log./Supply Chain Mgmt.	3			Upper-level Business Elective	3
		Upper-level Logistics Elective	3			Non-Business Elective	3
			12			Non-Business Elective	3
							15

COURSE DESCRIPTIONS

LSM 201 *Introduction to Logistics and Supply Chain Management* – 3 hrs. An introduction to the fundamentals of logistics and supply chain management. It will include discussions of the effective and efficient integration of supply chain management activities such as transportation, customer service, purchasing, inventory management, warehousing, and supplier management. Prerequisite: Sophomore standing. (Offered Fall and Spring).

LSM 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: LSM 201. (Offered Spring).

LSM 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: LSM 201. (Offered Fall).

LSM 324 *Contract Law* – 3 hrs. A course on federal contracting, as well as commercial contracting which is essential even to government 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 Fall or Spring).

LSM 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: LSM 201. (Offered Fall or Spring).

LSM 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: LSM 201. (Offered Fall or Spring).

LSM 340 *Advanced Logistics and Supply Chain Management* – 3 hrs. The challenges of effectively managing logistics and supply chains, and the integration of information, product, and financial flows across supply chains. Topics covered also include enterprise resource planning, customer relationship management, supplier relationship management, collaborative logistics and supply chain management, and reverse logistics. Prerequisite: LSM 201. (Offered Fall).

LSM 409 *International Logistics and Supply Chain Management* – 3 hrs. Examines the management of logistics and supply chain activities in the global arena. Topics include managing global sourcing and procurement, manufacturing, warehousing, inventory management, and transportation. Export-import activities in a dynamic global environment will be emphasized. Prerequisite: LSM 201. (Offered Fall or Spring).

LSM 411 *Procurement and Contract Management* – 3 hrs. An exploration of the primary aspects of the procurement and management. It includes materials management, contract administration functions and responsibilities starting from contract award to contract completion. It includes consideration of the role of small businesses and sub-contractors. Prerequisite: LSM 305 or concurrent. (Offered Fall or Spring).

LSM 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: LSM 335. (Offered Fall or Spring).

LSM 422 *Negotiation Techniques and Supply Chain Management* – 3 hrs. A course designed to discuss the principle and techniques of effective negotiations in supply chain management, in order to build up partnerships and lasting relationships with internal and external customers, suppliers, and other supply chain members. Topics covered will include tactics and strategies for negotiations, contract types, and supplier relationships. Prerequisite: None. (Offered Fall or Spring).

LSM 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: LSM 201. (Offered Fall or Spring).

LSM 427 *Quality Management* – 3 hrs. An overview of the total quality management function, including organization, management, process control, and product reliability and maintainability. Prerequisite: ECO 271 and MGT 315. (Offered Spring).

LSM 428 *Strategic Logistics and Supply Chain Management* – 3 hrs. A capstone course integrating diverse areas of logistics and supply chain management, including transportation, customer service, supply chain risks management, inventory management, life cycle management and other supply chain management activities. Prerequisite: LSM 305, LSM 323, and LSM 340. (Offered Spring).

LSM 435 *Supply Chain Risk Management* – 3 hrs. This course examines sources of supply chain risk, the potential impact of supply disruptions, and business continuity/contingency planning. Mitigating supply chain risks by identifying, analyzing, controlling, and managing risk sources along the chain. Prerequisite: LSM 305. (Offered Fall or Spring).

LSM 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: LSM 305. (Offered Fall or Spring).

BULLETIN 2008 – 2011

BUSINESS ADMINISTRATION

Management Information System Concentration

122 Credit Hours

FRESHMAN YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ORI	101	Survival Skills	1	ENG	102	Composition II[1]	3
ENG	101	Composition I[1]	3	MTH	120	Calculus and its Applications	3
MTH	112	Pre-Calculus Algebra[1, 2]	3			Science Elective with Lab	4
		Science Elective with Lab	4			Fine Arts Elective	3
		History Elective	3			Social Science Elective	3
PED		Golf or Tennis[3]	2				16
			16				

SOPHOMORE YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
ACC	203	Introduction to Accounting I	3	ACC	204	Introduction to Accounting II	3
ECO	231	Principles of Macroeconomics	3	ECO	232	Principles of Microeconomics	3
ENG		Literature Sequence I	3	ECO	271	Business Statistics I	3
ENG	205	General Speech	3	ENG		Literature Sequence II	3
MIS	213	Computer Applications in Business	3	MGT	207	Legal Environment and Ethics	3
			15				15

JUNIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
MGT	315	Principles of Management	3	OSM	315	Professional Writing	3
		Mgmt. Info. Systems Elective[4]	3	MKT	315	Principles of Marketing	3
OSM	310	Business Communication	3	MIS	345	Database Management System	3
FIN	315	Principles of Finance	3	MIS	331	Info. System Analysis and Design	3
MIS	315	Principles of Mgmt. Info. Systems	3	MIS	356	Data Communication/Networking	3
		Non-Business Elective	3			Non-Business Elective	3
			18				18

SENIOR YEAR

First Semester				Second Semester			
Course No.		**Course Title**	**Hrs**	**Course No.**		**Course Title**	**Hrs**
MGT	413	Production/Operations Mgmt.	3	MGT	442	Strategic Management and Policy	3
MIS	489	System Development Project	3	MGT	458	International Business	3
		Mgmt. Info. Systems Elective[4]	3	MIS	479	Intro Object-Oriented Programming	3
		Upper-level Business Elective	3			Mgmt. Info. Systems Elective[4]	3
			12				12

COURSE DESCRIPTIONS

MIS 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).

MIS 315 *Principles of 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: MIS 213 or consent of instructor. (Offered Fall and Spring).

MIS 331 *Information Systems and 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: MIS 315. (Offered Spring).

MIS 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 studies with projects involving the use of a current database management system. Prerequisite: MIS 315. (Offered Fall).

MIS 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: MIS 213. (Offered Fall).

MIS 410 *Seminar in Management Information Systems* – 3 hrs. An in-depth coverage of a variety of contemporary issues in management information systems. Prerequisites: MIS 315 and permission of the instructor. (Offered Spring).

MIS 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. Prerequisite: MIS 315. (Offered Spring).

MIS 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. Prerequisites: MIS 331, MIS 345, senior standing and permission of the instructor. (Offered Fall or Spring).

BULLETIN 2008 – 2011

BUSINESS ADMINISTRATION

Office Systems Management Concentration

122 Credit Hours

FRESHMAN YEAR

First Semester			Second Semester		
Course No.	**Course Title**	**Hrs**	**Course No.**	**Course Title**	**Hrs**
ORI 101	Survival Skills	1	ENG 102	Composition II[1]	3
ENG 101	Composition I[1]	3	MTH 120	Calculus and its Applications	3
MTH 112	Pre-Calculus Algebra[1, 2]	3		Science Elective with Lab	4
	Science Elective with Lab	4		Fine Arts Elective	3
	History Elective	3	ENG	Literature Sequence I	3
PED	Physical Education[3]	2			16
		16			

SOPHOMORE YEAR

First Semester			Second Semester		
Course No.	**Course Title**	**Hrs**	**Course No.**	**Course Title**	**Hrs**
ECO 231	Principles of Macroeconomics	3	ECO 232	Principles of Microeconomics	3
ACC 203	Introduction to Accounting I	3	ACC 204	Introduction to Accounting II	3
	Social Science Elective	3	ENG 205	General Speech	3
ENG	Literature Sequence II	3	MGT 207	Legal Environment and Ethics	3
OSM 215	Business Mathematics	3	MIS 213	Computer Applications in Business	3
		15			15

JUNIOR YEAR

First Semester			Second Semester		
Course No.	**Course Title**	**Hrs**	**Course No.**	**Course Title**	**Hrs**
OSM 202	Word Processing	3	OSM 302	Desktop Publishing & 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
MIS 315	Principles of Mgmt. Info. Systems	3	FIN 315	Principles of Finance	3
MGT 315	Principles of Management	3	OSM 204	Office Procedures	3
		15			15

SENIOR YEAR

First Semester			Second Semester		
Course No.	**Course Title**	**Hrs**	**Course No.**	**Course Title**	**Hrs**
OSM 315	Professional Writing	3	OSM 312	Office Management	3
MGT 413	Production/Operations Mgmt.	3	MKT 464	International Marketing	3
MGT 442	Strat. Management and Policy	3	OSM 406	Office Internship	3
	Non-Business Elective	3		Non-Business Elective	3
	Non-Business Elective	3		Non-Business Elective	3
		15			15

COURSE DESCRIPTIONS

OSM 202 *Word Processing* – 3 hrs. This course is an introduction to word processing and information concepts. It includes the fundamentals of word processing and microcomputers and the study of word processing applications in business (Offered Fall).

OSM 204 *Office Procedures* – 3 hrs. This course focuses on the changing nature of work in the 21st 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 Fall).

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. (Offered Fall and Spring).

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).

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. Pre-requisite: OSM 310.

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).

BULLETIN 2008 – 2011

MANAGEMENT

122 Credit Hours

FRESHMAN YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
ORI 101	Survival Skills	1		ENG 102	Composition II[1]	3
ENG 101	Composition I[1]	3		MTH 120	Calculus and its Applications	3
MTH 112	Pre-Calculus Algebra[1, 2]	3			Science Elective with Lab	4
	Science Elective with Lab	4			Fine Arts Elective	3
	History Elective	3			Social Science Elective	3
PED	Golf or Tennis[3]	2				
		16				16

SOPHOMORE YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
ACC 203	Introduction to Accounting I	3		ACC 204	Introduction to Accounting II	3
ECO 231	Principles of Macroeconomics	3		ECO 232	Principles of Microeconomics	3
ENG	Literature Sequence I	3		ECO 271	Business Statistics I	3
ENG 205	General Speech	3		ENG	Literature Sequence II	3
MIS 213	Computer Applications in Business	3		MGT 207	Legal Environment and Ethics	3
		15				15

JUNIOR YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
MGT 315	Principles of Management	3		OSM 315	Professional Writing	3
ACC 219	Managerial Accounting	3		MKT 315	Principles of Marketing	3
OSM 310	Business Communication	3		MGT 332	Organizational Behavior and Theory	3
FIN 315	Principles of Finance	3		MGT 352	Entrepreneurship	3
MIS 315	Principles of Mgmt. Info. Systems	3		MGT 379	Management Science	3
		15				15

SENIOR YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
MGT 413	Production/Operations Mgmt.	3		MGT 442	Strategic Management and Policy	3
MGT 433	Human Resource Management	3		MGT 458	International Business	3
	Upper-level Management Elective	3			Upper-level Management Elective	3
	Upper-level Business Elective	3			Upper-level Business Elective	3
	Non-Business Elective	3			Non-Business Elective	3
		15				15

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 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 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 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. Prerequisite: MGT 315, FIN 315, and MKT 315. (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, 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 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 the tools and theory of production/operations management. Focus is on the issues related to the planning, controlling and designing of production/operations systems. Prerequisites: MTH 120 and ECO 271. (Offered Fall and Spring).

MGT 427 *Quality Management* – 3 hrs. An overview of the total quality management function; including organization, management, process control, and product reliability and maintainability. Prerequisites: ECO 271 and MGT 315. (Offered 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, MGT 315, and MKT 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: MGT 352, 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).

BULLETIN 2006 – 2008

MARKETING

122 Credit Hours

FRESHMAN YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
ORI 101	Survival Skills	1		ENG 102	Composition II[1]	3
ENG 101	Composition I[1]	3		MTH 120	Calculus and its Applications	3
MTH 112	Pre-Calculus Algebra[1, 2]	3			Science Elective with Lab	4
	Science Elective with Lab	4			Fine Arts Elective	3
	History Elective	3			Social Science Elective	3
PED	Golf or Tennis[3]	2				16
		16				

SOPHOMORE YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
ACC 203	Introduction to Accounting I	3		ACC 204	Introduction to Accounting II	3
ECO 231	Principles of Macroeconomics	3		ECO 232	Principles of Microeconomics	3
ENG	Literature Sequence I	3		ECO 271	Business Statistics I	3
ENG 205	General Speech	3		ENG	Literature Sequence II	3
MIS 213	Computer Applications in Business	3		MGT 207	Legal Environment and Ethics	3
		15				15

JUNIOR YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
MGT 315	Principles of Management	3		MKT 316	Buyer Behavior	3
MKT 315	Principles of Marketing	3		MKT 323	Promotions Management	3
OSM 310	Business Communication	3		OSM 315	Professional Writing	3
FIN 315	Principles of Finance	3			Upper-level Marketing Elective	3
MIS 315	Principles of Mgmt. Info. Systems	3			Non-Business Elective	3
		15				15

SENIOR YEAR

First Semester				Second Semester			
Course No.	**Course Title**	**Hrs**		**Course No.**	**Course Title**	**Hrs**
MGT 413	Production/Operations Mgmt.	3		MGT 442	Strategic Management and Policy	3
MKT 477	Marketing Management	3		MKT 411	Advanced Marketing Research	3
MKT 410	Marketing Research	3		MKT 464	Global Marketing	3
	Upper-level Marketing Elective	3		MKT 487	Strategic Marketing	3
	Non-Business Elective	3			Non-Business Elective	3
		15				15

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 marking 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).

MKT 450 *Services Marketing* – 3 hrs. A course designed to introduce both the theories and practices of services marketing. Emphasis is placed on the planning and management of customer-satisfaction-winning marketing activities in the services sector and in general. Prerequisite: MKT 315. (Offered Fall or Spring).

MKT 455 *Health Care Marketing* – 3 hrs. The purpose is to provide a thorough understanding of the principles and concepts of marketing as they apply to health care organizations. Students will be exposed to markets composed of varying degrees of managed care, and application from both a traditional fee-for-service approach and a managed care framework will be discussed. The course will examine the application of marketing tools and strategies in today's dynamic health care environment. Prerequisite: MKT 315. (Offered Fall).

MKT 464 *Global Marketing and its Environment* – 3 hrs. Analysis of the adaptation and integration of the marketing process in the development of marketing strategies by domestic firms with global operations. Special focus on the impact of the cultural, economic, financial, and political/legal environments on marketing decisions. Prerequisite: MKT 315. (Offered Spring).

MKT 477 *Marketing Management* – 3 hrs. Managerial approach to marketing decision-making focusing on the analysis and interpretation of quantitative and qualitative marketing data. Prerequisites: MKT 315 and senior standing. (Offered Fall and Spring).

MKT 487 *Strategic Marketing* – 3 hrs. Integration capstone course focusing on the strategic planning of all marketing elements. Prerequisites: MKT 315, 316, 323, 410, and 477. (Offered Spring).

SCHOOL OF EDUCATION

Dr. Larry Powers, Dean
117 Carver Complex North
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 or her for the area or areas he or 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 Career Technical Education (i.e., Agriscience Education, Family and Consumer Sciences Education, Business and Marketing Education, Career Technologies 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 Educator's Certificate, which qualifies him or her to teach in a single major field of concentration.

A teacher candidate who successfully pursues a major in an academic discipline (i.e., Biology, Chemistry, English, General Social Science, Mathematics, and Physics) 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 Educator's Certificate.

The University offers curricula in Early Childhood, Elementary, Special Education and P-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 Educator's Certificate in the respective area for which he or 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 or 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 whom 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

1. Teach in the State of Alabama and who have successfully completed an approved program of study in Teacher Education;

2. Have been recommended for certification by Alabama A. and M. University, and

3. 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/her 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 (256) 372-5500.

The Dean, his/her 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 will proceed and assistance will be provided in addressing verified performance problems of graduates from the School of Education upon appropriate notification.

Quick Response

Immediate access is available to the First-Year Teacher Quality Assurance Program through the Dean's Office of the School of Education.

Service to Beginning Teachers:

Beginning Teacher Clients

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.

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.

Art Education (P-12)
Secondary Education (6-12)
- Biology
- Chemistry
- English Language Arts
- General Social Science
- Mathematics
- Physics
- Career Technical Education (6-12)
  - Agriscience
  - Business/Marketing
  - Career Technologies
  - Family and Consumer Sciences
  - Technical Education

Early Childhood Education (P-3)
Elementary Education (K-6)
Music Education (P-12)
- Instrumental
- Vocal

Physical Education (P-12)
Special Education
- Collaborative Teacher (K-6)
- Collaborative Teacher (6-12)
- Early Childhood Special Education (P-3)

SCHOOL OF EDUCATION COURSE ENROLLMENT POLICY

In accordance with the School of Education policy, all students registering for the first course in the School of Education must have an overall grade point average of 2.50 or higher. Therefore, students who register for any education course without the 2.50 will be administratively dropped from these courses.

GUIDELINES FOR ADMISSION

Admission to Alabama A&M University does not qualify a student for admission to 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.

1. Candidates are required to follow the admissions procedure described below in order to be admitted to the Teacher Education Program:

    a. The teacher candidate must make formal application for admission to the teacher education program.

    b. A grade of "C" or better must be earned in English 101 and 102, Composition.

    c. Candidates are required to secure and maintain a cumulative 2.50 grade point average in the following areas:

        1. General Studies
        2. Professional Studies
        3. Teaching Field
        4. Overall

    d. The teacher candidate must satisfactorily pass a speech language hearing screening administered by the Communicative Sciences Disorders Program. A nominal fee will be charged.

    e. The teacher candidate must submit a negative TB skin test or chest x-ray completed by a licensed physician or from the University's Student Health Center.

    f. The teacher candidate must take and pass all three components of the Alabama Prospective Teacher's Test (APTT).

    g. Early Childhood, Elementary, Collaborative (K-6) and Early Childhood Special Education must take the Praxis II examination

    h. Each candidate must submit to and successfully clear a fingerprint/background check (Alabama A & M University will not recommend any candidate for admission to teacher education and/or licensure without a successful fingerprint/background check). A **$49 nonrefundable** fingerprint fee in the form of **a U.S. postal money order made payable to the State Department of Education** is required.

    e. The teacher candidate must be interviewed by a panel of faculty members.

2. The teacher candidate who transfers from another institution to Alabama A&M University, and who officially declares teacher education as a major, shall follow the guidelines for admission as indicated above. Transfer candidates shall take and pass at least 12 credit hours as outlined below to be eligible for formal admission into the teacher education program. In the Professional studies block of the undergraduate program candidates may only transfer in from other colleges/universities Human Growth and Development courses. In the Teaching Field or Content block of the undergraduate programs candidates may not transfer in any courses. (This policy does not include the area of Secondary Education, where courses in the Teaching Field block can be accepted as transferred courses with advisor approval).

FED	200	Introduction to Teacher Education
HDF	211	Child Growth and Development (Early Childhood, Elementary, Collaborative K-6, Early Childhood Special Education)
	OR	
FED	212	Human Growth and Development (Secondary Education)
FED	215	Instructional Technology (Career Technical candidates see State-Approved Checklist)
SPE	201	Introduction to the Study of Exceptional Children

A candidate may not enroll in more than the four professional studies courses listed above before meeting all criteria for unconditional admission to the Teacher Education program.

ELIGIBILITY FOR INTERNSHIP

Prior to enrolling in the internship (student teaching), candidates shall meet all the Teacher Education Program admission criteria described by the School of Education before the first day of the internship (student teaching).

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 a passing score on the appropriate Praxis II examination.

5. The teacher candidate must have successfully completed a minimum of 205 clock hours in diverse accredited public and/or private school settings.

6. The teacher candidate must reaffirm the fingerprint/background clearance.

7. The teacher candidate must have removed all grades of “Incomplete.”

8. The teacher candidate must have repeated all courses in professional studies and the teaching field with grades of “D” and “F.”

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 of Science degree will qualify a person for a Class B Professional Educator's Certificate. The area of certification offered by the State is determined by a program pursued to completion.

1. The teacher candidate must have completed all course requirements that are on the **applicable** State-Approved Checklist for his or her particular major area or areas.

2. The teacher candidate must pass the Senior Exit Examination required by the School of Education with a score of 80% or better. Candidates in Early Childhood Education, Elementary Education, Collaborative Teacher, Early Childhood Special Education, and Technical Education must take and pass both portions of the Senior Exit Examination (Basic Professional and Teaching Field). Secondary Education, Physical Education, Art Education, and Music Education must only take and pass the Professional Basic portion of the Senior Exit Examination.

3. Candidates MUST apply for certification in the State of Alabama BEFORE clearing for graduation.

4. **A $20 nonrefundable application fee in the form of a U.S. postal money order made payable to the State Department of Education must accompany each application for a teacher's certificate**.

5. Candidates must apply for certification in the State of Alabama. If the candidate is interested in teaching in another state, they must contact the State Department in the applicable state for certification requirements in that state.

DEPARTMENT OF FINE ARTS

102 Morrison Building
(256) 372-5512
Dr. Horace Carney, Chair
horace.carney@aamu.edu

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.

THE ART PROGRAM AREA

The Art Program offers the Bachelor of Science with a choice of three concentrations: teaching art, graphic design, and studio art. The Art Education concentration serves those students who desire a P-12 teaching career. The Graphic Design concentration serves those students who desire professional careers in graphic design, advertising art, and/or communication graphics. The Studio Art concentration serves those students pursuing a professional career within the visual arts.

All art majors in both teaching and non-teaching areas must earn a grade of "C" or better in all art courses, as well as a 2.5 G.P.A. or better. 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 300 Teaching Art in the Elementary School.

ART 101, ART 200, ART 221, ART 403, ART 404, ART 405, ART 408, ART 409, ART 412, ART 414 are lecture courses that meet three hours per week. All other courses are studio courses that meet six hours per week.

PROGRAM INFORMATION

All art majors in both teaching and non-teaching areas must earn a grade of "C" or better in all art courses, as well as a 2.5 GPA. 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 300, Teaching Art in the Elementary School.

ART 101, ART 220, ART 221, ART 403, ART 404, ART 405, ART 408, ART 409, ART 412, ART 414 are lecture courses that meet three hours per week. All other courses are studio courses that meet six hours per week

MINOR PROGRAMS

The following three minor programs are designed to serve persons in fields outside of teacher education. The art minors and their semester hour requirements are as follows:

Art History	18 Semester Hours
Studio Art	18 Semester Hours
Graphic Design	18 Semester Hours

The guidance of an Art Program advisor is necessary for all three minors. Students should plan to enter any art minor no later than the Fall semester of their junior year as courses are usually only taught once a year and prerequisites are necessary requirements.

Art History Minor

Students who minor in art history must complete a total of eighteen (18) semester hours, nine (9) of which are required. Graphic Design majors who choose an Art History minor will choose advisor approved Art History electives as a substitute for ART 220, ART 221, and ART 412. Studio Art majors who choose an Art History minor will find advisor approved Art History electives as a substitute for ART 220 and ART 221. ART 400 Independent Art Investigation may be used for purposes of individual research in Art History by art history minors.

Course Number	Course Title	Sem. Hrs.
ART 220	History of Art I	3
ART 221	History of Art II	3
ART 412	Origins of Modern Art	3

Students will elect nine (9) hours from the following to complete eighteen (18) semester hours.

Course Number	Course Title	Sem. Hrs.
ART 400	Independent Art Investigation	3
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
		18

Graphic Design Minor

Students who minor in Graphic Design will take courses that total eighteen semester hours. Except for Studio Art Majors, Art Appreciation, Art 101 is required for this minor.

Course Number	Course Title	Sem. Hrs.
ART 110	Fundamentals of Drawing	3
ART 111	Two Dimensional Design	3
ART 298	Introduction to Photography **OR**	(3)
ART 211	Color in Design	(3)
ART 230	Graphic Design I	3
ART 331	Graphic Design II	3
ART 332	Graphic Design III	3
		18

Studio Art majors may minor in Graphic Design by completing eighteen (18) hours of Studio Art Electives other than those required to complete their major. Upon completion of undergraduate course options some graduate level course work may also be available.

Studio Art Minor

Students who minor in Studio Art take courses that will total eighteen (18) semesters hours. Students may elect any studio art courses for which they have the prerequisite. Except for Graphic Design Majors, Art Appreciation, ART 101 is required for this minor.

Students may choose to take either or both ART 111 Two Dimensional Design and ART 121 Three Dimensional Design. If students take both ART 111 and ART 121, they then take two Studio Art Electives. If the students choose either one of these (not both), they then take three Studio Art Electives to complete eighteen (18) hours. In addition to courses currently included in the course inventory all students may elect ART 400 Independent Art Investigation for further work in their chosen area.

Course Number	Course Title	Sem. Hrs.
ART 110	Fundamentals of Drawing	3
ART 111	Two Dimensional Design **AND/OR**	3
ART 121	Three Dimensional Design	3
ART 211	Color in Design	3
ART	Studio Art Elective	3
ART	Studio Art Elective	(3)
		18

Graphic Design majors may minor in Studio Art by completing eighteen (18) hours of Studio Art Electives other than those required to complete their major. Upon completion of undergraduate course options some graduate level course work may also be available.

ART EDUCATION

Teaching Option
125-126 Semester Hours

Students in this option must follow all policies and meet all requirements set by the School of Education. A grade point average of 2.5 is required for admission into the Teacher Education Program. A grade point average of 2.5 is required for admission into the Teacher Education Program.

Freshman Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ORI 101 Survival Skills	1	ENG 102 Composition II	3
ENG 101 Composition I	3	MUS 101 Music Appreciation	3
MTH 112 Pre-Calculus Algebra	3	HIS 101 World History I	3
PED PE Activity OR	2	ART 209 Composition with Drawing	3
HED 101 Personal & Com. Health OR	(2)	ART 121 Three Dimension Design	3
MSC 101 Intro to Military Science	(2)	Total	15
ART 110 Fundamentals of Drawing	3		
ART 111 Two Dimensional Design	3		
Total	15		

Sophomore Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ENG 203 World Literature I OR	3	ENG 204 World Literature II OR	3
ENG 301 Survey of American Lit. I OR	(3)	ENG 302 Survey of American Lit. II OR	(3)
ENG 201 Survey of English Lit. I	(3)	ENG 202 Survey of English Lit. II	(3)
HIS 203 Found. Of Amer. History Gov	3	FED 215 Instructional Technology	3
FED 200 Intro to Teacher Education	2	FED 212 Human Growth & Development	3
PHY 101 Physical Science I	3	BIO 101 General Biology I	3
PHY 101L Physical Science I Lab	1	BIO 101L General Biology I Lab	1
ART 220 History of Art I	3	ART 221 History of Art II	3
ART 298 Intro to Photography	3	Total	16
Total	18		

Junior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ECO 200 Basic Economics	3	ENG 205 General Speech	3
SPE 201 Intro to study Except. Child	3	PSY 201 General Psychology	3
ART 312 Painting I	3	ART 305 Ceramics I	3
ART 315 Sculpture I	3	ART 307 Jewelry I	3
ART 320 Fund. of Printmaking: Rel. OR	3	ART 310 Teach Art in Elem. School	3
ART 321 Fund. of Printmaking: Lith.	(3)	Total	15
ART 410 Teaching Art in Sec. School	3		
Total	18		

Senior Year

FED 300 Found. Of Education	2	ART 495 Internship	12
FED 404 Tests & Measurement	3	Total	15
SED 409 Reading in Content	3		
PSY 403 Educational Psychology	3		
ART Elective (Upper Level)	3		
ART Elective (Upper Level)	3		
Total	17		

Electives: Students majoring in Art Education (P-12) must elect art courses that will total six (6) semester hours. The following courses are options:

Course Number	Course Title	Sem. Hrs.
ART 202	Beginning Fibers	3
ART 204	Advanced Fibers	3
ART 299	Photography II	3
ART 306	Ceramics II	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 320 or 321	Fundamentals of Printmaking	3
ART 400	Independent Art Investigation	3
ART 412	Origins of Modern Art	3
ART 414	African American Art	3

GRAPHIC DESIGN

Non-Teaching
125 Semester Hours

Freshman Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ORI 101 Survival Skills	1	ENG 102 Composition II	3
ENG 101 Composition I	3	PHY 102 Physical Science II **OR**	3
MTH 112 Pre-Calculus Algebra	3	BIO 102 General Biology II	(3)
PHY 101 Physical Science I **OR**	3	PHY 102L Physical Science II Lab **OR**	1
BIO 101 General Biology I	(3)	BIO 102L General Biology II Lab	(1)
PHY 101L Physical Science I Lab **OR**	1	MUS 101 Music Appreciation	3
BIO 101L General Biology I Lab	(1)	ART 209 Composition with Drawing	3
ART 110 Fundamentals of Drawing	3	**Total**	13
Total	14		

Sophomore Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ENG 203 World Literature I	3	HIS 102 World History II	3
PED PE Activity **OR**	2	ENG 204 World Literature II **OR**	3
HED 102 Personal & Comm. Health **OR**	(2)	PHL 201 Intro to Philosophy	(3)
MSC 101 Intro to Military Science	(2)	ART 121 Three Dimensional Design	3
HIS 101 World History I	3	ART 211 Color in Design	3
ART 111 Two Dimensional Design	3	ART 230 Graphic Design I	3
ART 309 Figure Drawing	3	**Total**	15
ART 298 Intro to Photography	3		
Total	17		

Junior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ENG 205 General Speech	3	ECO 200 Basic Economics	3
ART 312 Painting I	3	ART 221 History of Art II	3
ART 320 Fund. of Printmaking: Rel **OR**	3	PSY 201 General Psychology	3
ART 321 Fund. of Printmaking: Lit	(3)	Minor Requirement	3
ART 220 History of Art I	3	Minor Requirement	3
Minor Requirement	3	ART 332 Graphic Design III	3
ART 331 Graphic Design II	3	**Total**	18
Total	18		

Senior Year

ART 408 Internship	3	ART 420 Advertising Thesis	3
ART Elective	3	ART 412 Origins of Modern Art	3
Minor Requirement	3	ART Elective	3
Minor Requirement	3	Minor Requirement	3
ART 430 Advanced Graphic Design I	3	ART 431 Advanced Graphic Design II	3
Total	15	**Total**	15

STUDIO ART

Non-Teaching
122 Semester Hours

Freshman Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ORI 101 Survival Skills	1	ENG 102 Composition II	3
ENG 101 Composition I	3	HIS 101 World History I	3
PED PE Activity **OR**	2	ART 209 Composition with Drawing	3
HED 101 Personal & Com. Health **OR**	(2)	ART 121 Three Dimension Design	3
MSC 101 Intro to Military Science	(2)	ART 230 Graphic Design I	3
MTH 112 Pre-Calculus Algebra	3	**Total**	15
ART 110 Fundamentals of Drawing	3		
ART 111 Two Dimensional Design	3		
Total	15		

Sophomore Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ENG 203 World Literature I	3	HIS 102 World History II	3
MUS 101 Music Appreciation	3	ENG 204 World Literature II	3
ART 309 Figure Drawing	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 **OR**	(3)	PHY 102 Physical Science II **OR**	(3)
BIO 101 General Biology I	3	BIO 102 General Biology II	3
PHY 101L Physical Science I Lab **OR**	(1)	PHY 102L Physical Science II Lab **OR**	(1)
BIO 101L General Biology I Lab	1	BIO 102L General Biology II Lab	1
Total	16	**Total**	16

Junior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ENG 205 General Speech	3	ECO 200 Basic Economics	3
PSY 201 General Psychology	3	PHL 201 Intro to Philosophy	3
ART 2/300 2-D Studio Foundation	3	ART 2/300 3-D Studio Foundation	3
ART 2/300 3-D Studio Foundation 3	3	ART 300 Level Studio Elective (adv. approved)	
Minor Requirement	3	Minor Requirement	3
Total	15	**Total**	15

Senior Year

ART 300 Level Studio Elective	3	ART 400 Indep. Study in Studio	3
ART 300 Level Studio Elective	3	ART 401 Advanced Technical Problems	3
ART Art History Elective	3	ART 402 Senior Exhibition	3
Minor Requirement	3	Minor Requirement	3
Minor Requirement	3	Minor Requirement	3
Total	15	**Total**	15

COURSE DESCRIPTIONS

ART 101 *Art Appreciation* – 3hrs. A general survey of the visual arts for non-art majors. **Prerequisite: None** (Offered Fall, Spring and Summer)

ART 110 *Fundamentals of Drawing* - 3 hrs. A beginning course investigation a variety of media, techniques and subjects as well as the development of visual vocabulary. (Offered Fall)

ART 111 *Two Dimensional Design* - 3 hrs. An introduction to developing concise concepts of design with emphasis upon the elements and principles of visual art. (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. 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. **Prerequisite: 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. This course is designed for persons preparing for junior or senior levels. **Prerequisite: ART 110, ART 111, and ART 202, or consent of instructor** (Offered Spring)

ART 209 *Composition with Drawing* - 3 hrs. Emphasis 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. The examination and application of the various systems, theories, and consideration for the uses of color in visual expressions. **Prerequisite: 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 230 *Graphic Design I* – 3 hrs. An introduction to the concept of graphic design as it evolves from verbal communication. This is a foundation course centered on the manipulation of the elements of art with the use of the computer. Students will explore the theories and principles involved in graphic design and build on this understanding using both traditional and contemporary industry standard digital techniques. **Prerequisites: ART 110 and ART 111** (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 and Spring)

ART 299 *Photography II* - 3 hrs. Lectures and discussions of the history of still photography forming 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 300 *Teaching Art in the Elementary School* – 2 hrs. A course providing information and instruction which will enable the elementary teacher to plan and teach a meaningful art curriculum. Teacher candidates will study basics of color and design, current art education theory, and teaching strategies for art learning. Students will make art works with materials used in elementary classrooms. **Prerequisite: Admission to the Teacher Education Program** (Offered Fall, Spring, and Summer)

ART 305 *Ceramics I* - 3 hrs. Introductory study of clay as an artistic medium. Basic processes of building and glazing are explored. **Prerequisite: ART 110 and ART 121 or consent of instructor** (Offered Fall)

ART 306 *Ceramics II* - 3 hrs. Advanced study of clay as and artistic medium. **Prerequisite: ART 209 and ART 305** (Offered Spring)

ART 307 *Jewelry I* - 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. **Prerequisite: ART 110 and ART 111, or consent of instructor** (Offered Spring)

ART 308 *Jewelry* II- 3 hrs. A continuation of skills and techniques introduced in ART 307. 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. A continuation of the concepts learned in ART 110 and ART 209 with an emphasis on drawing the human figure. **Prerequisite: ART 110, ART 209, or consent of instructor.** (Offered Fall and Summer)

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: Admission to the Teacher Education Program** (Offered Spring)

ART 312 *Painting I* - 3 hrs. An introduction to the methods and materials used in oil painting. Classical and contemporary techniques will be explored. **Prerequisite: 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. **Prerequisite: 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 develop an individual style in his or her work and to relate it to his or her personal philosophy of art. **Prerequisite: ART 110, ART 209, or consent of instructor** (Offered Spring)

ART 315 *Sculpture I* - 3 hrs. The examination of concepts relating to three-dimensional design beyond the introductory level. Students will be exposed to a variety of sculpture processes and materials. **Prerequisite: 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. **Prerequisite: ART 110, ART 111, ART 121, and ART 315, or consent of instructor** (Offered Fall).

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**. Prerequisite: ART 110, ART 111 or consent of instructor** (Offered Fall)

ART 318 *Advanced Glass Working* - 3 hrs. A continuation of ART 317, with emphasis 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 of relief and intaglio. Emphasis is on studio or fine arts graphics from a contemporary perspective. **Prerequisite: 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 studio and fine art graphics from a contemporary perespective. **Prerequisite: ART 110, ART 111, ART 121, and ART 320, or consent of instructor** (Offered Spring)

ART 331 *Graphic Design II* – 3 hrs. A continuation of Art 230 with an emphasis on contemporary graphic design production techniques, problems, and solutions. Students will continue to develop layout skills, learn effective methods in electronic pre-press print production, and effective software utilization. **Prerequisite: ART 230** (Offered Fall)

ART 332 *Graphic Design III* – 3 hrs. The art of typography and its relationship to all print media. The focus is on creating successful typographic oriented solutions. This is an intermediate level course that teaches how to develop creative graphic design solutions to visual communication challenges. **Prerequisite: ART 331** (Offered Spring)

ART 400 *Independent Art Investigation* - 3 hrs. A 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**. (Offered after written consent from major professor only. Fall, Spring or 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 written consent from major professor only. Fall, Spring or Summer.)

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 written consent from major professor only. Fall or Spring.)

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. A course focusing 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. **Prerequisite: ART 110, ART 209, ART 309, or consent of instructor** (Offered odd years in the Spring)

ART 407 *Advertising Illustration* - 3 hrs. A course developing the conceptual design and drawing skills used by professional illustrators. **Prerequisite: ART 110, ART 209, 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. **Prerequisite: ART 110, ART 111, ART 209, ART 202, ART 305, ART 312, and ART 320, and Admission to the Teacher Education Program** (Offered Fall)

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 Fall)

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)

ART 430 *Advanced Graphic Design I* – 3 hrs. Advanced course of instructions for creating the components necessary for the full development of an advertising campaign. Graphic Design, illustration, and web site development will be taught utilizing the most current industry software. The student will also learn to assemble web graphics through vector path applications. This course will emphasize the development of the student's professional print/web portfolio. **Prerequisite: ART 332** (Offered Fall)

ART 431 *Advanced Graphic Design II* - 3 hrs. Advanced web design, web animation, and interactive media. Methods of developing the student's comprehensive interactive portfolio are explored. **Prerequisite: ART 430** (Offered Spring)

ART 495 *Internship* - 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: Art Program approval; 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)

MUSIC AND MUSIC EDUCATION PROGRAM

102 Morrison Building
(256) 372-5513

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 concentrations.

The program will:

1. Provide a course of study whereby a student may receive a major in music education or music with a concentration in business or music with a concentration in 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 setting.

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

The Program in Music Education leads to the Bachelor of Science degree in music with teaching and non-teaching concentrations. There is an emphasis in instrumental or vocal/choral music regardless of the option. Depending upon the concentration the student must prepare a senior recital or fulfill other requirements that are stated in this bulletin under the respective program curricula. Either choice necessitates the completion of a senior recital and other requirements that are stated in this bulletin under the respective program curricula. The student is also admonished to check with their advisor concerning course requirements.

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 can declare a major in music without having a successful audition with a music faculty member in at least one performing medium.**

2. Unless granted special permission by the program lead, 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 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 two or three consecutive years. At the end of the minimum required study period, the music major will be given a proficiency test in piano.

4. Piano majors in music education must take a minimum of six consecutive semesters in voice. A vocal proficiency test is given after the three years of study in 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 standard of the reference policy. (See 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 approved recital guidelines. (See Music Majors Handbook)

8. Music majors are required to perform in an ensemble each semester. Variations in these requirements are determined by the musical area chosen: music education, music/business concentration, or music/performance concentration. (See your advisor and the Student Handbook)

9. Each vocal-choral major is encouraged 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 on the curriculum traking patterns. Music education majors are required to follow the checklist approved by the Alabama State Department of Education.

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 his or her 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 lead 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 (Music Education Majors). 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 curriculum covers courses in education, music methods, performance, 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 may follow the vocal/choral curriculum or the instrumental curriculum. Majors are required to make a minimum grade of "C" in all music courses.

VOCAL/CHORAL MUSIC EDUCATION CURRICULUM (P-12)

(Piano and Voice Majors)

127-128 Semester Hours

Freshman Year

First Semester			*Sem.Hrs.*		*Second Semester*			*Sem.Hrs.*
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 Health	2	**OR**	MUS	104	Music Theory II	3
PED		P.E. Activity **OR**	(2)		MUS	123	University Choir I	1
MSC	101	Military Science	(2)		PHY	101	Physical Science	3
ART	101	Art Appreciation	3		PHY	101L	Physical Science Lab I	1
MUS	103	Music Theory I	3		MUS		Applied Music-Major	1
MUS	122	University Choir I	1		MUS		Applied Music-Minor	1
MUS		Applied Music - Major	1					16
ORI	101	Survival Skills	0-1					
			16-17					

Sophomore Year

First Semester			*Sem.Hrs.*	*Second Semester*			*Sem.Hrs.*
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[1]	3
ENG	203	World Literature I[1]	3	SPE	201	Intro. To Except. Children	3
FED	200	Intro. to Teacher Education	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	1
PSY	201	General Psychology[2]	3				18
			18				

[1]Can take ENG 201 and ENG 202, OR ENG 301 and ENG 302

[2]Can take SOC 201 OR GEO 213

Junior Year

First Semester			*Sem.Hrs.*	*Second Semester*			*Sem.Hrs.*
ECO	200	Basic Economics	3	ENG	205	General Speech	3
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	317	Conducting	1
MUS	320	Form and Analysis	3	MUS	318	Survey of Band Instruments	2
MUS		Applied Music - Major	1	MUS		Applied Music - Major	1
MUS		Applied Music - Minor	1	MUS		Applied Music – Minor	1
			17				15

Senior Year

First Semester			*Sem. Hrs.*
MUS	319	Vocal Diction & Literature	1
PSY	403	Educational Psychology	3
FED	404	Tests and Measurements	3
SED	409	Reading In The Cont. Area	3
MUS	422	University Choir	1
MUS		Applied Music – Major	1
MUS		Applied Music – Minor	1
		Senior Recital	0
			13

Second Semester			*Sem. Hrs.*
MUS	495	Internship	12
MUS	423	University Choir	1
MUS		Applied Music – Major	1
			14

Electives

MUS	405	Choral Arranging	2
MUS	406	Instrumental Arranging	2
MUS	408	Survey of Black Music	2
MUS	403	Counterpoint	2
MUS	310	Keyboard Lit. & Pedagogy	3
MUS	305	Composition w/ Computers	2

PLEASE 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
This program may take longer than four years.

INSTRUMENTAL MUSIC EDUCATION CURRICULUM (P-12)

(All Instruments except Piano)

127-128 Semester Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs.*
ORI	101	Survival Skills I	0-1	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 Health **OR**	2	PHY	101L	Physical Science Lab	1
PED		Phys Ed Activity Elective **OR**	(2)	MUS	118	Voice Class	1
MSC	101	Military Science	(2)	Applied MUS (Major Perf Medium)			1
MUS	103	Music Theory I	3	MUS	104	Music Theory II	3
Applied MUS		Major Perform Med	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	1				17
			16-17				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs.*
BIO	101	General Biology I	3	ENG	204	World Literature II[1]	3
BIO	10L	General Biology Lab	1	FED	212	Human Growth & Dev	3
ENG	203	World Literature I[1]	3	FED	215	Instructional Technology	3
FED	200	Intro To Teacher Education	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[2]	3	MUS	242	Applied Music – Piano	1
MUS	241	Applied Music -Piano	1	MUS	254,250	Sym Bnd/Str. Ens	1
MUS	253,249	Mrching Bnd/Str. Ens	1	Appl MUS		(Major Perf Medium)	1
Appl MUS		(Major Perf Medium)	1				18
			18				

[1]Can take ENG 201 and ENG 202, OR ENG 301 and ENG 302

[2]Can take SOC 201 OR GEO 213

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
ECO	200	Basic Economics	3	ART	101	Art Appreciation	3
FED	300	Foundations of Education	2	ENG	205	General Speech	3
MUS	320	Form and Analysis	3	HIS	203	Found. Am. Hist.&Gov't	3
MUS	353,349	Mrching Bnd/Str. Ens.	1	MUS	354,350	Sym Bnd/Str. Ens	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
Applied Music (Major Perf Medium)			1	Appl Music (Major Perf Medium)			1
			16	MUS	401	Music for Sec. Schools	2
							18

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
PSY	403	Educational Psychology	3	MUS	495	Internship	12
FED	404	Tests and Measurement	3	Applied Music (Major Perf Medium)			1
SED	409	Reading in the Content	3	MUS	454,450	Symph Bnd/String Ens	1
MUS		Brass,WW,Perc.Or String	1				14
MUS	453,449	Marching Bnd/Str.Ens	1				
		Applied Music (Major Perf Medium)	1				
		Senior Recital	0				
			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 305	Composition w/ Computers	2
MUS 406	Instrumental Arranging	2
MUS 408	Survey of Black Music	2
MUS 403	Counterpoint	2

MUSIC EDUCATION/BUSINESS CONCENTRATION

Music Education with a Business Concentration 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 to be generally knowledgeable in recording and publishing procedures.

MUSIC EDUCATION/BUSINESS CONCENTRATION

VOICE / PIANO CURRICULM**

Credit Hours 126-128

Freshman Year

First Semester			*Sem.Hrs.*	*Second Semester*			*Sem.Hrs.*
ORI	101	Survival Skills	1	ART	101	Art Appreciation	3
ENG	101	Composition I	3	ENG	102	Composition II	3
MTH	110	Finite Math **or**	3	PHY	101	Physical Science	3
MTH	112	Pre-Calculus Algebra		PHY	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
MUS		Appl Mus (Major Pef Med)	1	MUS		Appl Mus (Major Pef Med)	1
			18				18

Sophomore Year

First Semester			*Sem.Hrs.*	*Second Semester*			*Sem.Hrs.*
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	242	Applied Music Piano	1
MUS	141	Applied Music Piano	1	MUS	223	University Choir	1
MUS	222	University Choir	1	MUS		Appl Mus (Major Pef Med)	1
MUS		Appl Mus (Major Pef Med)	1	ENG	205	General Speech	3
			16				18

Junior Year

First Semester			*Sem.Hrs.*	*Second Semester*			*SemHrs.*
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 Environment & Ethics	3	MIS	213	Computer Apps in Business	3
MKT	315	Prin of Marketing	3	FIN	315	Principles of Finance	3
MUS	316	Conducting	1	MUS	317	Conducting	1
MUS		Appl Mus (Major Pef Med)	1	MUS		Appl Mus (Major Pef Med)	1
MUS	335	Vocal Diction & Literature	2	MUS	318	Survey of Band Instruments	2
MUS	241	Applied Music-Piano	1	MUS	241	Applied Music-Piano	1
			16				16

Senior Year

First Semester		*Sem. Hrs.*	*Second Semester*		*Sem Hrs*
MUS 422	University Choir	1	MUS 423	University Choir	1
MUS	Appl Mus (Maj Perf Med)	1	MUS	Appl Mus (Maj Perf Med)	1
			MUS 352	Entrepreneurship	3
Electives		12	MUS 400	Senior Recital	1-3
MUS 329	Pub. and Recording	(3)	MUS 470	Music Business Internship	3
MUS 408	Survey of Black Music	(3)	MUS 418(419)	Jazz Theory I or II	3
LSM 324	Contract Law	(3)	**Electives**		
MGT 318	Business Law	(3)	MUS 305	Composition w/ Comp. **OR**	(2)
MGT 315	Prin. of Management	(3)	MUS 310	Keyboard Lit. & Pedagogy	(3)
		14			14-17

**A piano major may elect to follow the instrumental curriculum.
A piano major may also study voice or any instrument for four semesters to complete the applied minor requirements.

\+ A major may also elect any course in the music curriculum with the consultation of the advisor.

MUSIC/BUSINESS CONCENTRATION

INSTRUMENTAL CURRICULUM**

(All Instruments)

126-128 Semester Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs.*
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 Marching Band **OR**	1	MUS	104	Music Theory II	3
MUS	128	Woodwind Ensemble **OR**	(1)	MUS		Appl Mus (Maj Perf Med)	1
MUS	130	Brass Ensemble **OR**	(1)	MUS	154	University Symph Band	1
MUS	149	String Ensemble	(1)	MUS	128	Woodwind Ensemble **OR**	(1)
MUS		Appl Mus (Maj Perf Med)	(1)	MUS	130	Brass Ensemble **OR**	(1)
			15	MUS	150	String Ensemble **OR**	(1)
				MUS	124	Percussion Ensemble	(1)
							17

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs.*
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	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 Marching Band	1	MUS		Appl Mus (Maj Perf Med)	1
MUS	128	Woodwind Ensemble **OR**	(1)	MUS	254	University Symph Band	1
MUS	130	Brass Ensemble **OR**	(1)	MUS	128	Woodwind Ensemble **OR**	(1)
MUS	249	String Ensemble	(1)	MUS	130	Brass Ensemble **OR**	(1)
MUS		Appl Mus (Maj Perf Med)	(1)	MUS	249	String Ensemble	(1)
			16				18

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
MUS	353	University Marching Band **OR**	1	MUS	354	University Symph Band	1
MUS	128	Woodwind Ensemble **OR**	(1)	MUS	128	Woodwind Ensemble **OR**	(1)
MUS	130	Brass Ensemble **OR**	(1)	MUS	130	Brass Ensemble **OR**	(1)
MUS	349	String Ensemble	(1)	MUS	350	String Ensemble	(1)
MUS	303	Music History and Liter.	2	MUS	304	Music History and Liter.	2
MUS	241	Applied Music – Piano	1	MUS	317	Conducting II	1
MUS	316	Conducting I	1	MUS	403	Counterpoint	2
MUS	320	Form and Analysis	3	MIS	213	Computer Appl in Business	3
MUS	207	Legal Env. & Ethics	3	FIN	315	Principles of Finance	3
MKT	315	Prin. of Marketing	3	MUS		Appl Mus (Maj Perf Med)	1
MUS		Appl Mus (Maj Perf Med)	1	**Electives in**		Music Literature	
Electives in		Music Literature or				Music Theory	2
		Music Theory	2 or 3			MUS 242 App. Mus. Piano	1
			17 or 18				17

**Piano majors may elect to follow the vocal/choral curriculum.

Senior Year

First Semester		*Sem. Hrs.*	*Second Semester*		*Sem Hrs*
MUS 453	University Mrhing Band **OR**	1	MUS 454	University Symph Band	1
MUS 128	Woodwind Ensemble **OR**	(1)	MUS 128	Woodwind Ensemble **OR**	1
MUS 130	Brass Ensemble **OR**	(1)	MUS 130	Brass Ensemble **OR**	(1)
MUS 449	String Ensemble **OR**	(1)	MUS 450	String Ensemble **OR**	(1)
MUS	Appl Mus (Maj Perf Med)	1	MUS	Appl Mus (Maj Perf Med)	1
ENG 205	General Speech	3	MUS 400	Senior Recital	3
Electives		11 or 12	MUS 470	Mus Bus Internship	4
MUS 352	Entrepreneurship	(3)	MUS 418(419)	Jazz Theory I or II	3
MUS 329	The Record Company	(3)			13
MUS 305	Comp. With Computers	(3)			
LSM 324	Contract Law	(3)			
MGT 315	Prin. of Management	(3)			
		13 or 14			

MUSIC/PERFORMANCE CONCENTRATION

Music with a Performance Concentration is a non-teaching option for music majors with exceptional talent on their instrument or with their voice. Students must audition for the faculty before acceptance. Junior and Senior recitals are required.

PERFORMANCE

INSTRUMENTAL CURRICULUM

122-125 **String Majors**

124-126 **Other Instrumental Majors**

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs.*
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 **AND**	1
MUS	128	Woodwind Ensemble **OR**	1	MUS	128	Woodwind Ensemble **OR**	1
MUS	130	Brass Ensemble **OR**	(1)	MUS	130	Brass Ensemble **OR**	1
MUS	149	String Ensemble **OR**	(1)	MUS	1150	String Ensemble **OR**	(1)
MUS	124	Percussions Ensemble	(1)	MUS	124	Percussions Ensemble	(1)
MUS		Appl Mus (Maj Perf Med)	(1)	MUS		Appl Mus (Maj Perf Med)	(1)
			18				18

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs.*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
BIO	101	General Biology I	3	ECO	200	Basic Economics	3
BIO	101L	General Biology Lab	1	MUS	206	Music Theory IV	3
PED	101	Fitness for Life	2	MUS	142	Applied Music -Piano	1
MUS	205	Music Theory III	3	MUS	124	Percussions Ensemble **OR**	1
MUS	141	Applied Music -Piano	1	MUS	128	Woodwind Ensemble **OR**	(1)
MUS	253	University Mrhing Band	1	MUS	130	Brass Ensemble **OR**	(1)
MUS	124	Percussions Ensemble **OR**	1	MUS	250	String Ensemble **AND**	(1)
MUS	128	Woodwind Ensemble **OR**	(1)	MUS	254	University Symph Band	1
MUS	130	Brass Ensemble **OR**	(1)	MUS		Appl Mus (Maj Perf Med)	1
MUS	249	String Ensemble	(1)		102	Foreign Language	3
MUS		Appl Mus (Maj Perf Med)	(1)				16
	101	Foreign Language	3				
			18				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
MUS	353	University Mrhing Band **OR**	1	MUS	354	University Symph Band **AND**	1
MUS	128	Woodwind Ensemble **OR**	(1)	MUS	128	Woodwind Ensemble **OR**	1
MUS	130	Brass Ensemble **OR**	(1)	MUS	130	Brass Ensemble **OR**	(1)
MUS	349	String Ensemble	(1)	MUS	350	String Ensemble **OR**	(1)
MUS	303	Music History and Liter.	2	MUS	126	Jazz Band	(1)
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
MUS		Appl Mus (Maj Perf Med)	1	MUS	403	Counterpoint	2
MUS	241	Applied Music – Piano	1	MUS	300	Junior Recital	2
CMP		Elective	3	MUS		Appl Mus (Maj Perf Med)	1
			15	MUS	242	Applied Music – Piano	1
							14

Senior Year

First Semester		*Sem. Hrs.*
MUS 453	University Mrhing Band **OR**	1
MUS 128	Woodwind Ensemble **OR**	(1)
MUS 130	Brass Ensemble **OR**	(1)
MUS 449	String Ensemble **OR**	(1)
MUS	Appl Mus (Maj Perf Med)	(1)
ENG 205	General Speech	3
CMP	Computer Elective	3
Electives		5or 6
MUS 305	Comp. With Computers	(2)
MUS 418	Jazz Theory I	(3)
MUS 310	Literature and Pedagogy	(3)
		13 or 14

Second Semester		*Sem Hrs*
MUS 454	University Symph Band	1
MUS 128	Woodwind Ensemble **OR**	1
MUS 130	Brass Ensemble **OR**	(1)
MUS 450	String Ensemble **OR**	(1)
MUS	Appl Mus (Maj Perf Med)	(1)
MUS 306	Composition with Computers	2
MUS 419	Jazz Theory II	3
MUS 400	Senior Recital	3
CMP	Computer Elective	3
		13

PERFORMANCE
VOCAL and PIANO CURRICULUM
121-123 Semester Hours

Freshman Year

First Semester			*Sem.Hrs.*
ORI	101	Survival Skills	1
ENG	101	Composition I	3
MTH	110	Finite Math **OR**	3
MTH	112	Pre-Calculus Algebra	(3)
HIS	101	World History	3
MUS	103	Music Theory I	3
MUS	122	Univ Choir (Voice Majors)	1
CMP	101	Foundations of Computers	3
MUS	141	Applied Music Piano (Voice Major) **OR**	1
MUS	151	Applied Music Voice	(1)
			18

Second Semester			*Sem.Hrs.*
ART	101	Art Appreciation	3
ENG	102	Composition II	3
PHY	101	Physical Science	3
MUS	101L	Physical Science Lab	1
HED	101	Personal & Comm. Health	2
MUS	104	Music Theory II	3
MUS	123	University Choir	1
MUS	142	Applied Music Piano **OR**	
MUS	152	Applied Music Voice	(1)
			19

Sophomore Year

First Semester			*Sem.Hrs.*
BIO	101	General Biology I	3
BIO	101L	General Biology Lab I	1
ENG	203	World Literature I	3
ENG	205	General Speech	3
MUS	205	Music Theory III	3
	101	Foreign Language	3
MUS	241	Applied Music - Major	1
MUS	222	Univ Choir (Voice Majors)	1
MUS		Appl Mus (Major Perf. Med)	1
			19

Second Semester			*Sem.Hrs.*
MUS	223	Univ Choir (Voice Majors)	1
ECO	200	Basic Economics	3
ENG	204	World Literature II	3
MUS	206	Music Theory IV	3
MUS	242	Applied Music – Major	1
	102	Foreign Language	3
MUS		Appl Mus (Major Perf. Med)	1
PED	101	Fitness for Life	2
			17

Junior Year

First Semester			*Sem.Hrs.*
MUS	322	Univ Choir (Voice Majors)	1
MUS	303	Music History & Literture	2
MUS	316	Conducting	1
MUS	335	Vocal Diction & Literature	2
MUS	320	Form and Analysis	3
MUS	341	Appl Music-Piano	1
MUS		(Major Perf. Med)	1
MUS		Appl Mus (Major Perf. Med)	1
	201	Foreign Language	3
MUS		Elective	2 or 3
MUS	309	Opera Studies	(2)
MUS	408	Survey of Black Music	(2)
MUS	115	Vocal-Jazz Ensemble	(1)
			16 or 17

Second Semester			*Sem.Hrs.*
MUS	323	Univ Choir (Voice Majors)	1
MUS	304	Music History & Literture	2
MUS	317	Conducting	1
MUS	318	Survey of Band Instruments	2
MUS	403	Counterpoint	2
MUS		Appl Music	1
MUS	342	Appl Music (Major Perf. Med)	1
	202	Foreign Language	3
MUS	300	Junior Recital	2
			15

Senior Year

First Semester		*Sem. Hrs.*	*Second Semester*		*Sem Hrs*
MUS 422	University Choir **OR** (Voice Majors Only)	1	MUS 423	University Choir **OR** (Voice Majors Only)	1
MUS	Appl Mus (Maj Perf Med)	1	MUS 400	Senior Recital	3
			MUS	Appl Mus (Maj Perf Med)	1
Electives		8	**Electives**		**7**
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	(1)	MUS 116	Vocal Jazz Ensemble	(1)
MUS 310	Composition w/ Computers	(3)	MUS		(2)
	a. 12				

MINOR IN MUSIC

The Music program offers a minor to serve students in fields outside of music education. A student must successfully pass a total of eighteen (18) semesters of music study according to the prescribed courses listed below. Sixteen hours are required and two hours are elected.

Instrumental

MUS 103	Music Theory I	3
MUS 104	Music Theory II	3
MUS 303	Music History I	2
MUS 304	Music History II	2
MUS	Applied Music (Instrument)	1
MUS	Applied Music (Instrument)	1
	Total	**18**

Vocal

MUS 103	Music Theory I	3
MUS 104	Music Theory II	3
MUS 303	Music History I	2
MUS 304	Music History II	2
MUS	Applied Music (Voice or Piano)	1
MUS	Applied Music (Voice of Piano)	1
MUS	Elective(s)	1
	Total	**18**

COURSE DESCRIPTIONS

MUS 103 *Music Theory I - 3 hrs***.** A course designed 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. 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* A course 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***.** A course 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.* 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.* A thorough study of borrowed chords, secondary dominants, and other chromatic harmonies Other topics include fundamentals of orchestration, ninths, elevenths and thirteenths, 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***.** A course that focuses on sight reading, technique, tone and other factors necessary for competency and pedagogy with upper brasswinds. (Laboratory fee). **Prerequisite: None** (Offered Fall)

MUS 210 *Lower Brasswinds Class - 1 hr.* 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. (Laboratory fee). **Prerequisite: MUS 208** (Offered Spring)

MUS 212 *Percussion Class - 1 hr.* An introduction to snare drumming rudiments. 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.* A 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 phases of the course. Listening is a very significant part of the 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 305 Composition with Computers – 2 hrs.

MUS 310 Keyboard Literature and Pedagogy – 3 hrs.

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.* introduction to double-reed woodwinds, along with applicable pedagogy and literature. (Laboratory fee). **Prerequisite: MUS 312** (Offered Spring)

MUS 314 *Strings Class I - 1 hr.* 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.* 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***.** A study of the details of expression, score reading (choral and instrumental), words and symbols, technique, program building, and other factors. **Prerequisite: None** (Offered Fall)

MUS 317 *Conducting - 1 hr***.** Serious attention 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.* An opportunity for the student who concentrates on vocal music to develop 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 320 *Form and Analysis - 3 hrs***.** 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 335 *Introduction to Vocal Diction and Literature - 2 hrs***.** A study of solo and ensemble works from various periods in history. 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 401 *Music for Secondary Schools - 2 hrs***.** A course that focuses on techniques and methods 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.* A general course in the study and writing of 18th century counterpoint. Score analysis and listening are included. (Offered Spring)

MUS 405 *Choral Arranging - 2 hrs***.** An introduction 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.* A introduction 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.* A course designed to study the contributions 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: MUS 101, MUS 208, MUS 210, MUS 212, MUS 301, MUS 312, MUS 318 and MUS 327 - $10

Applied Music - $25

GENERAL MUSIC COURSES

MUS 101 *Music Appreciation - 3 hrs.* A study in the fundamentals of music such as melody, harmony, rhythm, form meter, and notation. 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 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.* An opportunity provided for students 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, 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, MUS 323 and MUS 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)
his 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) Other Stage Band course numbers are: MUS 226,326 and 426.

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). Other woodwind ensemble course numbers are: MUS 129,228,229,328, 329,428and 429.

MUS 130 *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). Other Brass Ensemble course numbers are: MUS 230,231,330,331,430 and 431.

MUS 153 *University Marching Band - 1 hr.* University Marching Band 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). Other fall course numbers are: MUS 253,353and 453.

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 *String Ensemble. – 1 hr.* This performing organization is 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 150, 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. Other guitar ensemble course numbers are: MUS 174,273,274,373,374,473 and 474.

APPLIED MUSIC LISTING

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. 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. The laboratory fee for each applied instrument is $25.

Violin

MUS 133 **Applied Music I (Violin) - 1 hr.** Assigned studies. **Prerequisite: an audition** (Offered Fall)
MUS 134 **Applied Music II (Violin) - 1 hr.** Assigned studies. **Prerequisite: MUS 133** (Offered Spring)
MUS 233 **Applied Music III (Violin) - 1 hr.** Assigned studies. **Prerequisite: MUS 134** (Offered Fall)
MUS 234 **Applied Music IV (Violin) - 1 hr.** Assigned studies. **Prerequisite: MUS 233** (Offered Spring)
MUS 333 **Applied Music V (Violin) - 1 hr.** Assigned studies. **Prerequisite: MUS 234** (Offered Fall)
MUS 334 **Applied Music VI (Violin) - 1 hr.** Assigned studies. **Prerequisite: MUS 333** (Offered Spring)
MUS 433 **Applied Music VII (Violin) - 1 hr.** Assigned studies. **Prerequisite: MUS 334** (Offered Fall)
MUS 434 **Applied Music VIII (Violin) - 1 hr.** Assigned studies. **Prerequisite: MUS 433** (Offered Spring)

Viola

MUS 135 **Applied Music I (Viola) - 1 hr.** Assigned studies. **Prerequisite: An audition.** (Offered Fall)
MUS 136 **Applied Music II (Viola) - 1 hr.** Assigned studies. **Prerequisite: MUS 135** (Offered Spring)
MUS 235 **Applied Music III (Viola) - 1 hr.** Assigned studies. **Prerequisite: MUS 136** (Offered Fall)
MUS 236 **Applied Music IV (Viola) - 1 hr.** Assigned studies. **Prerequisite: MUS 235** (Offered Spring)
MUS 335 **Applied Music V (Viola) - 1 hr.** Assigned studies. **Prerequisite: MUS 236** (Offered Fall)
MUS 336 **Applied Music VI (Viola) - 1 hr.** Assigned studies. **Prerequisite: MUS 335** (Offered Spring)
MUS 435 **Applied Music VII (Viola) - 1 hr.** Assigned studies. **Prerequisite: MUS 336** (Offered Fall)
MUS 436 **Applied Music VIII (Viola) - 1 hr.** Assigned studies. **Prerequisite: MUS 435** (Offered Spring)

Cello

MUS 137 **Applied Music I (Cello) - 1 hr.** Assigned studies. **Prerequisite: An audition.** (Offered Fall)
MUS 138 **Applied Music II (Cello) - 1 hr.** Assigned studies. **Prerequisite: MUS 137** (Offered Spring)
MUS 237 **Applied Music III (Cello) - 1 hr.** Assigned studies. **Prerequisite: MUS 138** (Offered Fall)
MUS 238 **Applied Music IV (Cello) - 1 hr.** Assigned studies. **Prerequisite: MUS 237** (Offered Spring)
MUS 337 **Applied Music V (Cello) - 1 hr.** Assigned studies. **Prerequisite: MUS 238** (Offered Fall)
MUS 338 **Applied Music VI (Cello) - 1 hr.** Assigned studies. **Prerequisite: MUS 337** (Offered Spring)
MUS 437 **Applied Music VII (Cello) - 1 hr.** Assigned studies. **Prerequisite: MUS 338** (Offered Fall)
MUS 438 **Applied Music VIII (Cello) - 1 hr.** Assigned studies. **Prerequisite: MUS 437** (Offered Spring)

Double Bass

MUS 139 **Applied Music I (Double Bass) - 1 hr.** Assigned studies. **Prerequisite: An audition** (Offered Fall)
MUS 140 **Applied Music II (Double Bass) - 1 hr.** Assigned studies. **Prerequisite: MUS 139** (Offered Spring)
MUS 239 **Applied Music III (Double Bass) - 1 hr.** Assigned studies. **Prerequisite: MUS 140** (Offered Fall)
MUS 240 **Applied Music IV (Double Bass) - 1 hr.** Assigned studies. **Prerequisite: MUS 239** (Offered Spring)
MUS 339 **Applied Music V (Double Bass) - 1 hr.** Assigned studies. **Prerequisite: MUS 240** (Offered Fall)
MUS 340 **Applied Music VI (Double Bass) - 1 hr.** Assigned studies. **Prerequisite: MUS 339** (Offered Spring)

MUS 439 **Applied Music VII (Double Bass) - 1 hr.** Assigned studies. **Prerequisite: MUS 340** (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. **Prerequisite: .** (Offered Fall only)

MUS 142 ***Applied Music II (Piano) - 1 hr.*** Assigned studies. **Prerequisite: MUS 141** (Offered Spring, and Summer)

MUS 241 ***Applied Music III (Piano) - 1 hr.*** Assigned studies. **Prerequisite: MUS 142** (Offered Fall only)

MUS 242 ***Applied Music IV (Piano) - 1 hr.*** Assigned studies. **Prerequisite: MUS 241** (Offered Spring, and Summer)

MUS 341 ***Applied Music V (Piano) - 1 hr.*** Assigned studies. **Prerequisite: MUS 242** (Offered Fall only)

MUS 342 **Applied Music VI (Piano) –** 1 hr. Assigned studies. **Prerequisite: MUS 341** (Offered Spring and Summer)

MUS 443 ***Applied Music IX (Piano) - 1 hr.*** Assigned studies. **Prerequisite: MUS 341** (Offered Spring, and Summer)

MUS 441 ***Applied Music VII (Piano) - 1 hr.*** Assigned studies. **Prerequisite: MUS 342** (Offered Fall only)

MUS 442 ***Applied Music VIII (Piano) - 1 hr.*** Assigned studies. **Prerequisite: MUS 441** (Offered Spring, and Summer)

Voice

MUS 151 ***Applied Music I (Voice) - 1 hr.*** **Prerequisite: None.** (Offered Fall only)

MUS 152 ***Applied Music II (Voice) - 1 hr.*** **Prerequisite: MUS 151** (Offered Spring, and Summer)

MUS 251 ***Applied Music III (Voice) - 1 hr.*** **Prerequisite: MUS 152** (Offered Fall only)

MUS 252 ***Applied Music IV (Voice) - 1 hr.*** **Prerequisite: MUS 251** (Offered Spring, and Summer)

MUS 351 ***Applied Music V (Voice) - 1 hr.*** **Prerequisite: MUS 252** (Offered Fall only)

MUS 352 ***Applied Music VI (Voice) - 1 hr.*** **Prerequisite: MUS 351** (Offered Spring, and Summer)

MUS 451 ***Applied Music VII (Voice) - 1 hr.*** **Prerequisite: MUS 352** (Offered Fall only)

MUS 452 ***Applied Music VIII (Voice) - 1 hr.*** **Prerequisite: MUS 451** (Offered Spring, and Summer)

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 **Applied Music III (French Horn) - 1 hr. Prerequisite: MUS 160** (Offered Fall Only)

MUS 260 **Applied Music IV (French Horn) - 1 hr. Prerequisite: MUS** (Offered Spring and Summer)

MUS 359 **Applied Music V (French Horn) - 1 hr. Prerequisite: MUS 260** (Offered Fall Only)

MUS 360 **Applied Music VI (French Horn) - 1 hr. Prerequisite: MUS 359** (Offered Spring and Summer)

MUS 459 **Applied Music VII (French Horn) - 1 hr. Prerequisite: MUS 360** (Offered Fall Only)

MUS 460 **Applied Music VIII (French Horn) - 1 hr. Prerequisite: MUS 459** (Offered Spring and Summer)

Trumpet

MUS 161 **Applied Music I (Trumpet) - 1 hr. Prerequisite: None. Must be taken in sequence** (Offered Fall Only)

MUS 162 **Applied Music II (Trumpet) - 1 hr. Prerequisite: MUS 161 Must be taken sequence** (Offered Spring and Summer)
MUS 261 **Applied Music III (Trumpet) - 1 hr. Prerequisite: MUS 162 Must be taken in sequence** (Offered Fall Only)
MUS 262 **Applied Music IV (Trumpet) - 1 hr. Prerequisite: MUS 261 Must be taken in sequence** (Offered Spring and Summer)
MUS 361 **Applied Music V (Trumpet) - 1 hr. Prerequisite: MUS 262 Must be taken in sequence** (Offered Fall Only)
MUS 362 **Applied Music VI (Trumpet) - 1 hr. Prerequisite: MUS 361 Must be taken in sequence** (Offered Spring and Summer)
MUS 461 **Applied Music VII (Trumpet) - 1 hr. Prerequisite: MUS 362 Must be taken in sequence** (Offered Fall Only)
MUS 462 **Applied Music VIII (Trumpet) - 1 hr. Prerequisite: MUS 461 Must be taken in sequence** (Offered Spring and Summer)

Guitar

MUS 191 **Applied Music I (Guitar) - 1 hr. Prerequisite: None** (Offered Fall)
MUS 192 **Applied Music II (Guitar) - 1 hr. Prerequisite: MUS 191 Must be taken in sequence** (Offered Spring)
MUS 291 **Applied Music III (Guitar) - 1 hr. Prerequisite: MUS 192 Must be taken in sequence** (Offered Fall)
MUS 292 **Applied Music IV (Guitar) - 1 hr. Prerequisite: MUS 291 Must be taken in sequence** (Offered Spring)
MUS 391 **Applied Music V (Guitar) - 1 hr. Prerequisite: MUS 292 Must be taken in sequence** (Offered Fall)
MUS 392 **Applied Music VI (Guitar) - 1 hr. Prerequisite: MUS 391 Must be taken in sequence** (Offered Spring)
MUS 491 **Applied Music VII (Guitar) - 1 hr. Prerequisite: MUS 392 Must be taken in sequence** (Offered Fall)
MUS 492 **Applied Music VIII (Guitar) - 1 hr. Prerequisite: MUS 491 Must be taken in sequence** (Offered Spring)

Clarinet

MUS 171 **Applied Music I (Clarinet) - 1 hr. Prerequisite: None** (Offered Fall)
MUS 172 **Applied Music II (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 271 **Applied Music III (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 272 **Applied Music IV (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 371 **Applied Music V (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 372 **Applied Music VI (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 471 **Applied Music VII (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 472 **Applied Music VIII (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Percussion

MUS 181 **Applied Music I (Percussion) - 1 hr. Prerequisite: None** (Offered Fall)
MUS 182 **Applied Music II (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 281 **Applied Music III (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 282 **MUS 282 Applied Music IV (Percussion) – 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 381 **Applied Music V (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 382 **Applied Music VI (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 481 **Applied Music VII (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 482 **Applied Music VIII (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Tuba

MUS 183 **Applied Music I (Tuba) - 1 hr. Prerequisite: None** (Offered Fall)
MUS 184 **Applied Music II (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 283 **Applied Music III (Tuba*)* - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 284 **Applied Music IV (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 383 **Applied Music V (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 384 **Applied Music VI (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 483 **Applied Music VII (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 484 **Applied Music VIII (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Bassoon

MUS 187 **Applied Music I (Bassoon) - 1 hr. Prerequisite: None** (Offered Fall)
MUS 188 **Applied Music II (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 287 **Applied Music III (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 288 **Applied Music IV (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 387 **Applied Music V (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 388 **Applied Music VI (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 487 **Applied Music VII (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 488 **Applied Music VIII (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Trombone

MUS 189 **Applied Music I (Trombone) - 1 hr. Prerequisite: None** (Offered Fall)
MUS 190 **Applied Music II (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 289 **Applied Music III (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 290 **Applied Music IV (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 389 **Applied Music V (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 390 **Applied Music VI (Trombone) - 1 hr. Prerequisite: Must be taken in sequence**

(Offered Spring)

MUS 489 **Applied Music VII (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 490 **Applied Music VIII (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Euphonium

MUS 143 **Applied Music I (Euphonium) - 1 hr. Prerequisite: None** (Offered Fall)

MUS 144 **Applied Music II (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 243 **Applied Music III (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 244 **Applied Music IV (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 343 **Applied Music V (Euphonium*)* - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 344 **Applied Music VI (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 443 **Applied Music VII (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 444 **Applied Music VIII *(Euphonium)* - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Flute

MUS 145 **Applied Music I (Flute) - 1 hr. Prerequisite: None** (Offered Fall)

MUS 146 **Applied Music II (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 245 **Applied Music III (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 246 **Applied Music IV (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 345 **Applied Music V (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 346 **Applied Music VI (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 445 **Applied Music VII (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 446 **Applied Music VIII (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 001 ***Independent Applied Music I -1-3 hrs*. Prerequisite: None** (Offered Fall, Spring, and Summer)

MUS 021 ***Independent Applied Music II - 1-3 hrs*. Prerequisite: None** (Offered Fall, Spring, and Summer)

MUS 031 ***Independent Applied Music III - 1-3 hrs*. Prerequisite: None** (Offered Fall, Spring, and Summer)

MUS 041 ***Independent Applied Music IV - 1-3 hrs.* Prerequisite: None** (Offered Fall, Spring, and Summer)

MUS 174,274,374,474 ***Independent Music Study* – 1, 2, or 3 hrs.**

Clarinet

MUS 171 **Applied Music I (Clarinet) - 1 hr. Prerequisite: None** (Offered Fall)

MUS 172 **Applied Music II (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered, Fall, Spring, and Summer)

MUS 271 **Applied Music III (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 272 **Applied Music IV (Clarinet*)* - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall, Spring, and Summer)

MUS 371 **Applied Music V (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence**

(Offered Fall)

MUS 372 **Applied Music VI (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall, Spring, and Summer)

MUS 471 **Applied Music VII (Clarinet) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

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)

MUS 182 **Applied Music II (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 281 **Applied Music III (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 282 **Applied Music IV (Percussion) – 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 381 **Applied Music V (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 382 **Applied Music VI (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 481 **Applied Music VII (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 482 **Applied Music VIII (Percussion) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Tuba

MUS 183 **Applied Music I (Tuba) - 1 hr. Prerequisite: None** (Offered Fall)

MUS 184 **Applied Music II (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 283 **Applied Music III (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 284 **Applied Music IV (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 383 **Applied Music V (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 384 **Applied Music VI (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 483 **Applied Music VII (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 484 **Applied Music VIII (Tuba) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Bassoon

MUS 187 **Applied Music I (Bassoon) - 1 hr. Prerequisite: None** (Offered Fall)

MUS 188 **Applied Music II (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 287 **Applied Music III (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 288 **Applied Music IV (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 387 **Applied Music V (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)

MUS 388 **Applied Music VI (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 487 **Applied Music VII (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 488 **Applied Music VIII (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Trombone
MUS 189 **Applied Music I (Trombone) - 1 hr. Prerequisite:** None (Offered Fall)
MUS 190 **Applied Music II (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 289 **Applied Music III (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 290 **Applied Music IV (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 389 **Applied Music V (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 390 **Applied Music VI (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 489 **Applied Music VII (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 490 **Applied Music VIII (Trombone) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

Euphonium
MUS 143 **Applied Music I (Euphonium) - 1 hr. Prerequisite: None** (Offered Fall)
MUS 144 **Applied Music II (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 243 **Applied Music III (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 244 **Applied Music IV (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 343 **Applied Music V (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 344 **Applied Music VI (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 443 **Applied Music VII (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 444 **Applied Music VIII (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring**)**

Flute
MUS 145 **Applied Music I (Flute) - 1 hr. Prerequisite: None** (Offered Fall)
MUS 146 **Applied Music II (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 245 **Applied Music III (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 246 **Applied Music IV (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 345 **Applied Music V (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 346 **Applied Music VI (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)
MUS 445 **Applied Music VII (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Fall)
MUS 446 **Applied Music VIII (Flute) - 1 hr. Prerequisite: Must be taken in sequence** (Offered Spring)

MUS 011 ***Independent Applied Music I - 1-3 hrs*.** **Prerequisite: None (Offered Fall, Spring, and Summer)**

MUS 021 ***Independent Applied Music II - 1-3 hrs.*** **Prerequisite: None (Offered Fall, Spring, and Summer)**

MUS 031 ***Independent Applied Music III - 1-3 hrs.*** **Prerequisite: None (Offered Fall, Spring, and Summer)**

MUS 041 ***Independent Applied Music IV - 1-3 hrs*.** **Prerequisite: None (Offered Fall, Spring, and Summer)**

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND RECREATION

8 Elmore Health Sciences Building
(256) 372-5376
Dr. Kay Hamilton, Chair
kay.hamilton@aamu.edu

MISSION

The Mission of the Department of Health, Physical Education and Recreation is to provide programs which prepare future professionals in the following teaching and non-teaching areas: Physical Education Teaching P-12, Aquatic Administration, Exercise Science, and Sport Management. In addition to teaching concepts, theories, methods, and materials, the faculty places emphasis on strategies and techniques of integrating technology into the teaching, of physical education. The faculty also engages in research, provides service to the university and the community, and participates in professional organizations and associations.

The objectives of the physical education program are 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 to provide graduates with insights into the intellectual framework of teaching physical skills to meet the demands of the professions. The program offers areas of study leading to a Bachelor of Science Degree in Physical Education. Students in the teaching program may seek an Alabama Class “B” Teacher’s Certificate. Students in the Non-Teaching Program may seek concentrations in Aquatic Administration, Sport Management and Exercise Science. A practicum and internship (teaching majors) or externship (non-teaching majors) are required.

PHYSICAL EDUCATION (P-12)

126-127 Semester Hours

Freshman Year

First Semester	Sem. Hrs.	Second Semester	Sem. Hrs.
ENG 101 Composition I	3	ENG 102 Composition II	3
BIO 101 General Biology	3	HED 101 Personal Comm. Health	2
BIO 101L General Biology Lab	1	PSY 201 General Psychology	3
HIS 101 World History I **OR**	3	ECO 200 Basic Economics	3
HIS 102 World History II	(3)	PED 140 Golf for Business & Life	2
MTH 112 Pre-Calculus Algebra	3	PED 101 Fitness for Life	2
ART 101 Art Appreciation **OR**	3	PED 107 Gymnastics & Rhythms	2
MUS 101 Music Appreciation	(3)		17
ORI 101 Survival Skills	1		
	17		

Sophomore Year

[1]ENG Literature Elective	3	[1]ENG Literature Elective	3
BIO 221 Human Anatomy/Phys	3	ENG 205 General Speech	3
BIO 221L Human Anatomy Lab	1	SPE 201 Into. to Except. Children	3
FED 200 Intro. to Teacher Edu	2	FED 212 Human Growth & Dev.	3
FED 215 Instructional Tech.	3	PED 202 Officiating	2
PED 131 Aquatic/ Begin. Swim	2	PED 226 Ind,. Dual, & Team Spts. II	2
PED 225 Ind., Dual & Team Spts I	2	PED 250 Foundations of HPER	2
	16		18

Junior Year

HIS 203 Found of Am. His./Gov.	3	PSY 403 Educational Psychology	3
PED 109 Tennis	2	PED 422 Prin. of Coaching/Intramurals	3
PED 305 M/M in Elem. P.E.	3	PED 306 M/M in Secondary PE	3
FED 300 Foundations of Ed.	2	PED 133 Intermediate Swimming	2
PED 312 Test and Measurements	3	PED 304 Applied Kinesiology	3
PED 409 Exercise Physiology	3	PED 412 Motor Behavior	3
	16		17

Senior Year

PED 301 Administration HPER	3	PED 495 Internship	12
SED 409 Reading in Content Area	3		12
PED 420 Res. on Teach. PE	3		
PED 427 Adaptive Physical Ed	3		
PED 308 Prev/Care Sports Injuries	2		
	14		

[1]ENG 201 and ENG 202, or ENG 203 and ENG 204, or ENG 301 and ENG 302

PHYSICAL EDUCATION
(Aquatic Administration)
126-127 Semester Hours

Freshman Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
ENG	101 Composition I	3	ENG	102 Composition II	3
BIO	101 General Biology	3	BIO	102 General Biology	3
BIO	101L General Bio Lab	1	BIO	102L General Bio Lab	1
MTH	112 Pre-Calculus Algebra	3	ART	101 Art Appreciation **OR**	3
HIS	101 World History **OR**	3	MUS	101 Music Appreciation	(3)
HIS	102 World History	(3)	PED	101 Fitness for Life	2
ORI	101 Survival Skills	1	CMP	101 Fundamentals of Computer	3
PED	109 Tennis	2	HED	101 Personal Comm. Health	2
		16			17

Sophomore Year

[1]ENG	Literature Elective	3	HIS	203 Found. of American His/Gov.	3
PED	202 Officiating	2	[1]ENG	Literature Elective	3
BIO	221 Human Anatomy/Physiology	3	PED	133 Intermediate Swimming	2
BIO	221L Hum. Anat./Physiology Lab	1	PED	107 Gymnastics/Rhythms	2
PED	131 Aquatic/Begin. Swimming	2	PED	140 Golf for Business & Life	2
ECO	200 Basic Economics	3	PSY	201 General Psychology	3
PED	225 Ind., Dual, Team Spts I	2	PED	250 Foundations of HPER	2
		17			17

Junior Year

ENG	205 General Speech	3	PED	226 Ind. Dual, & Team Sports II	2
PED	409 Exercise Physiology	3	PED	230 Swimming Pool Operations	3
PED	301 Administration in HPER	3	PED	235 Lifeguard Training	3
PED	312 Tests & Measurements	3	PED	304 Applied Kinesiology	3
	Approved Electives	3	PED	412 Motor Behavior	3
		15		Approved Elective	3
					17

Senior Year

PED	325 Emergency Response	3	PED	391 Practicum in Aquatic Admin.	3
PED	308 Prevention/Care of Spt. Inj.	3	PED	445 Externship	9
PED	420 Intro. Res. on Teaching in PE	3			12
PED	422 Principles of Coaching	3			
PED	427 Adaptive Physical Education	3			
PED	452 Aqua. Facility Administration	3			
		18			

[1]ENG 201 and ENG 202, or ENG 203 and ENG 204, or ENG 301 and ENG 302

PHYSICAL EDUCATION
(Sport Management)
126-127 Semester Hours

Freshman Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
ENG	101 Composition I	3	ENG	102 Composition II	3
BIO	101 General Biology	3	BIO	102 General Biology	3
BIO	101L General Bio Lab	1	BIO	102L General Bio Lab	1
MTH	112 Pre-Calculus Algebra	3	ART	101 Art Appreciation **OR**	3
HIS	101 World History I **OR**	3	MUS	101 Music Appreciation	(3)
HIS	102 World History II	(3)	PED	101 Fitness for Life	2
ORI	101 Survival Skills	1	CMP	101 Fundamentals of Com Inf. Sys	3
PED	109 Tennis	2	HED	101 Personal Comm. Health	2
		16			17

Sophomore Year

ENG	Literature Elective	3	HIS	203 Found. Am. Hist./Govt.	3
PED	202 Officiating	2	ENG	Literature Elective	3
BIO	221 Human Anatomy/Physiology	3	PED	107 Gymnastics/Rhythms	2
BIO	221L Hum. Anat./Physiology Lab	1	PED	133 Intermediate Swimming	2
PED	131 Aquatic/Begin. Swimming	2	PED	140 Golf for Business and Life	2
ECO	200 Basic Economics	3	PSY	201 General Psychology	3
PED	225 Ind., Dual & Team Spt. I	2	PED	250 Foundations of HPER	2
		17			17

Junior Year

ENG	205 General Speech	3	PED	226 Ind. Dual, & Team Sports II	2
MGT	315 Principles of Management	3	PED	304 Applied Kinesiology	3
PED	312 Tests & Measurements	3	PED	422 Prin. of Coaching/Intramurals	3
PED	301 Administration in HPER	3	PED	412 Motor Behavior	3
	Approved Elective	3	PED	450 Sport Management	3
		15		Approved Elective	3
					17

Senior Year

PED	308 Prevention/Care Spt. Inj.	2	PED	394 Practicum in Sports Mgt.	3
PED	409 Exercise Physiology	3	PED	445 Externship	9
PED	420 Intro. Res. on Teaching in PE	3			12
PED	325 Emergency Response	3			
PED	427 Adaptive Physical Education	3			
PED	492 Professional Leadership in PE	3			
		17			

[1]ENG 201 and ENG 202, or ENG 203 and ENG 204, or ENG 301 and ENG 302

PHYSICAL EDUCATION

(Exercise Science)

126-127 Semester Hours

Freshman Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
ENG	101 Composition I	3	ENG	102 Composition II	3
BIO	101 General Biology	3	BIO	102 General Biology	3
BIO	101L General Bio Lab	1	BIO	102L General Bio Lab	1
MTH	112 Pre-Calculus Algebra	3	ART	101 Art Appreciation **OR**	3
HIS	101 World History I **OR**	3	MUS	101 Music Appreciation	(3)
HIS	102 World History II	(3)	PED	101 Fitness for Life	2
ORI	101 Survival Skills	1	CMP	101 Fundamentals of Com Inf. Sys	3
PED	109 Tennis	2	HED	101 Personal Comm. Health	2
		16			17

Sophomore Year

ENG	Literature Elective	3	PED	107 Gymnastics/Rhythms	2
PED	202 Officiating	3	PED	133 Intermediate Swimming	2
BIO	221 Human Anatomy/Physiology	3	PED	140 Golf for Business and Life	2
BIO	221L Hum. Anat./Physiology Lab	1	PSY	201 General Psychology	3
PED	131 Aquatic/Begin. Swimming	2	PED	250 Foundations of HPER	2
NHM	102 Principles of Nutrition.	3	ENG	Literature Elective	3
		15	ENG	205 General Speech	2
					16

Junior Year

PED	225 Ind. Dual, & Team Sports I	2	PED	226 Ind. Dual, & Team Sports II	2
PED	301 Administration in HPER	3	PED	304 Applied Kinesiology	3
PED	312 Tests & Measurements	3	PED	412 Motor Behavior	3
PED	310 Adv. Strength & Cond.	3	PED	430 Ex. Testing and Prescription	3
HIS	203 Found. of American His/Gov	3	ECO	200 Basic Economics	3
	Approved Elective	3		Approved Elective	3
		17			17

Senior Year

PED	308 Prevention/Care of Spt. Inj.	2	PED	393 Practicum in Exercise Science	3
PED	325 Emergency Response	3	PED	445 Externship	9
PED	409 Exercise Physiology	3			12
PED	420 Intro. Res. on Teaching in PE	3			
PED	422 Principles of Coaching	3			
PED	427 Adaptive Physical Education	3			
		18			

[1]ENG 201 and ENG 202, or ENG 203 and ENG 204, or ENG 301 and ENG 302

Approved Electives for Concentrations
Choose 6 Hours

MGT	207	Legal Environment and Ethics or	3
MGT	315	Principles of Management	3
MKT	315	Principles of Marketing	3
SOC	201	Intro to Sociology	3
OSM	315	Professional Writing	3
PHY	101/101L	Physical Science and Lab	4
PED	450	Sport Management	3
PED	492	Professional Leadership in Physical Education	3

COURSE DESCRIPTIONS

HED 101 *Personal and Community Health* – 2 hrs. A course 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, and 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 101 *Fitness for Life* - 2 hrs. A course acquainting 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** (Offered Fall, Spring and Summer.)

PED 107 *Gymnastics & Rhythms* - 2 hrs. A course designed to assist students with developing the skill necessary to teach rhythmic activities/dance and gymnastics. Performance and safety will also be objectives. The students 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 locomotions and nonlocomoter movements are examined and experienced in detail. **Prerequisite: None** (Offered Spring)

PED 109 *Tennis* - 2hrs. Methods, procedures, techniques, and safety. Terminology, scoring, and skill development will be included. (Offered Fall, Spring, and Summer)

PED 131 *Beginning Swimming/Aquatic Education* - 2 hrs. Introduction 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 133 *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, theory, and basic stroke mechanics will be covered, on both lectures ad skill instruction sessions. (Offered Fall, Spring and Summer)

PED 140 *Golf for Business and Life* – 2 hrs. Basic principles, rules, history, etiquette, terminology, skill development, safety hints, playing strategies and courtesies of the game. This course teaches students not only how to enjoy the game, but also how to use it as a business tool as well. **Prerequisite: None** (Offered Fall, Spring, and Summer) Fee Required

PED 202 *Officiating* – 2 hrs. Introduction to the art and professional requirements of officiating intramural and athletic contests. The traditional fall/spring sports of flag football, basketball, wrestling, volleyball, soccer, baseball, softball, T-ball, track and field, and tennis are activities covered in this course. A weekly schedule for developing the necessary skills required of each sport is included. **Prerequisite: None** (Offered Spring, Summer and Fall)

PED 225 *Individual, Dual, and Team Sports* I – 2 hrs. Focus on the skill development, organizational strategies, instructional techniques and techniques for evaluating performance in a variety of individual, dual, and team sports. The activities covered in track and field, handball, and aerobics and weight training. **Prerequisite: PED 107, PED 109, PED 140** (Offered Fall)

PED 226 *Individual, Dual, and Team Sports II* – 2 hrs. Focus on the skill development, organizational strategies, instructional techniques and techniques for evaluating performance in a variety of individual, dual, and team sports. The activities covered in this course are: volleyball, basketball, flag football, soccer, softball, pickle ball and field hockey. **Prerequisite: PED 107, PED 109, PED 140** (Offered Spring)

PED 230 *Swimming Pool Operations and Maintenance* – 3hrs. Basic knowledge of water chemistry, filtration, environmental control, risk management, cost effectiveness, and safe swimming pool operations. (Offered Spring)

PED 235 *Lifeguard Training* – 3 hrs. A course providing the participants with the knowledge and skills needed to be lifeguards. It presents information on the basic skills and knowledge lifeguards need in pool, lake, river, surf, and water park environments. (Offered Spring).

PED 250 Foundations of HPER – 2 hrs. A course designed to assist students in developing a historical perspective of events and developments prior to and after 1885 in physical Education. The course includes the development of a personal philosophy of education and physical education through analysis of aims, goals and principles. (Offering Spring)

PED 301 *Administration in PE/Athletics* – 3 hrs. A course designed to assist students in developing an insight into the meaning and organizational skills required for organizing and administering programs of physical education and/or other related programs. This course provides a broad background regarding mechanical and muscular aspects of human motion. In addition, it provides a laboratory component to ensure a means for application and analysis. (Offered Fall)

PED 304 *Anatomy & Kinesiology*- 3 hrs. A course providing 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.** (Offered Spring)

PED 305 *Methods and Materials in Elementary Physical Education* -3 hrs. A course 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: PED 225 PED 226.** (Offered Fall)

PED 306 *Materials and Methods in Secondary Physical Education*-3 hrs. 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 107, PED 109, PED 140, PED 225, PED 226.** (Offered Spring)

PED 308 *Prevention and Care/Treatment of Sports Injuries* – 2 hrs. Fundamental concepts of kinesiology and physiology. A practical approach to physical conditioning, weight training and the care of injuries common to athletic contestants and physical activity participants are also included. As part of the course, the student will be involved in several planned activities for treating specific simulated injuries. **Prerequisites: BIO 101, BIO 101L, and PED 304**. (Offered Fall)

PED 310 *Advanced Strength and Conditioning* – 3 hrs. Health-related fitness assessments, weight training techniques, plyometrics, aerobic training, nutrition, ergogenic aids, and flexibility training. (Offered Fall)

PED 312 *Tests and Measurements 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 are also expected. **Prerequisite: None** (Offered Fall)

PED 325 *Emergency Response* – 3 hrs Development of the knowledge and skills necessary to work as a first responder in an emergency to help sustain life, reduce pain, and minimize the consequences of injury or sudden illness until more advanced medical help can arrive. (Offered Spring)

PED 391 *Practicum in Aquatics* – 3 hrs. Work and learning experiences outside the classroom at an approved fitness, recreation or wellness facility selected for the student. This program is designed to be a practical leadership experience and learning environment for competent, energetic students seeking to become managers and directors of sports and recreational facilities. (Offered Fall, Spring and Summer)

PED 393 *Practicum in Exercise Science* – 3 hrs. Work and learning experiences outside the classroom at an approved fitness, recreation or wellness facility selected for the student. This program is designed to be a practical leadership experience and learning environment for competent, energetic students seeking to become managers and directors of sports and recreational facilities. (Offered Fall, Spring and Summer)

PED 394 *Practicum in Sport Management* – 3 hrs. Work and learning experiences outside the classroom at an approved fitness, recreation or wellness facility selected for the student. This program is designed to be a practical leadership experience and learning environment for competent, energetic students seeking to become managers and directors of sports and recreational facilities. (Offered Fall, Spring, and Summer)

PED 409 *Exercise Physiology* – 3 hrs. A course is providing 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. **Prerequisites: BIO 101, BIO 101L** (Offered Fall)

PED 412 *Motor Learning* – 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 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)

PED 422 *Principles of Coaching/Intramurals* – 3 hrs. 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 included is 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. (Offered Fall)

PED 427 *Adaptive Physical Education* – 3 hrs. An examination of 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 designing individualized physical education programs. (Offered Fall)

PED 430 *Exercise Testing and Prescription* – 3 hrs. Application of exercise testing and prescription in an array of patient/client populations and development of proficiency in using testing equipment and evaluating results. (Offered Spring)

PED 445 *Externship* – 9 hrs. An opportunity for students to participate in the complex dynamics of an educational environment and at the same time prepare them for a multiplicity of careers in industrial recreation programs, and public and private recreation-related programs, including Boy Scouts, Girls Scouts, fitness centers, handicap centers, hospitals, YMCA's, YWCA's and other similarly related agencies. **Prerequisite: None** (Offered Fall, Spring, and Summer)

PED 450 *Sport Management* – 3 hrs. An overview of the fundamental principles of sport management programs combining theory and practice related to legal and ethical issues, marketing and organizational structure of recreational and sport related services and facilities. Also, the course provides insights as to the principal avenues of sport management careers, intercollegiate and professional sport, the sport and recreation industries, and the health and fitness industries. (Offered Spring)

PED 452 *Aquatic Facility Administration* – 3 hrs A course providing participants with the basic knowledge, skills, and materials needed to manage aquatic programs and facilities. (Offered Fall)

PED 492 *Professional Leadership in Physical Education* – 3 hrs A course designed to help participants understand the history and philosophy of physical education programs, teaching concepts, leadership training programs, safety guidelines and resources needed as to the physical education profession. (Offered Spring)

PED 494 *Practicum* – 9 hrs Work and learning experiences outside the classroom at an approved fitness, recreation or wellness facility selected for the student. This program is designed to be a practical leadership experience and learning environment for competent, energetic students seeking to become managers and directors of sports and recreational facilities. (Offered Fall, Spring, and Summer)

PED 495 *Internship in Physical Education* - 12 hrs. One full semester 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)**

PED 496 *Basketball Officiating Workshop Two Man Mechanics* – 2 hrs. 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. 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)

DEPARTMENT OF ELEMENTARY AND EARLY CHILDHOOD EDUCATION

222 Carver Complex North/Hollins Wing
(256) 372-5505
Dr. Rena N. Lott, Chair
rena.lott@aamu.edu

MISSION

The Elementary Education (K-6) and Early Childhood Education (P-3) Departments provide 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.

DEGREE OFFERINGS

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 candidate's major are considered professional education courses. The plan of study follows a recommended sequence for ultimate progress toward the degree. Candidates must earn and maintain at least a 2.5 grade point average overall and in general coursework and professional coursework to be eligible to enroll in materials and methods courses. Candidates should complete FED 200, Introduction to Teacher Education; FED 215 Introduction to Instructional Technology; FED 300 Foundations 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. **Materials and methods courses, ECE 301, ECE 302, ECE 303, ECE 304, ECE 305, ECE 306, ECE 404 and ECE 407 require a practicum in area schools.**

ELEMENTARY EDUCATION (K-6)

127-128 Semester Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ORI	101	Survival Skills	0-1	ENG	102	Composition II	3
ENG	101	Composition I	3	MTH		Approved Math Elective	3
MTH	112	Pre-Calculus Algebra	3	ECO	200	Basic Economics	3
BIO	101	General Biology I	3	BIO	102	General Biology II	3
BIO	101L	General Biology Lab I	1	BIO	102L	General Biology Lab II	1
HIS	101	World History I **or**	3	HIS	203	Funds of Amer History & Gov't	3
HIS	102	World History II	(3)	HED	101	Personal & Community Hlth **or**	2
ART	101	Art Appreciation **or**	3	PED		Approved PE Activity **or**	(2)
MUS	101	Music Appreciation	(3)	MSC	101	Military Science	(2)
			16-17				18

Sophomore Year

First Semester			Sem. Hrs.	*Second Semester*			Sem. Hrs.
ENG	203	World Literature I	3	ENG	204	World Literature II	3
PHY	101	Physical Science I	3	HDF	211	Child Human Growth & Develop	3
PHY	101L	Physical Science I Lab	1	SPE	201	Intro Study of Except'l Children	3
		Approved Soc Science Elective	3	ENG	205	General Speech	3
FED	200	Intro to Teacher Education	2	FED	300	Foundations of Education	2
FED	215	Intro to Instructional Tech	3	MTH		Approved Math Elective	3
MTH		Approved Math Elective	3				17
			18				

Junior Year

First Semester			Sem. Hrs	*Second Semester*			Sem. Hrs.
PSY	403	Educational Psychology	3	ECE	407	Intermediate Readers	3
FED	404	Tests & Measurements	3	ECE	300	Artistic Expressions	3
ELE	300	Elementary School Organization	3	ECE	302	M/M of Social Studies	3
SPE	326	Mangt of Classroom Behavior	3	ECE	303	M/M of Science & Health	3
ART	300	M/M Teaching Art	2	ECE	305	M/M of Mathematics	3
CSD	421	Multicultural Issues	3				15
			17				

Senior Year

First Semester			Sem. Hrs.	*Second Semester*			Sem.Hrs.
ECE	301	M/M of Language Arts	3	ELE	495	Internship	12
ECE	412	Children's Literature	3				12
HDF	304	Parenting	3				
MUS	327	Music for Classroom Teachers	2				
ECE	304	Teaching Reading Young Child	3				
			14				

Additional courses required for candidates seeking dual certification in Early Childhood Education (P-3) are ECH 300 and ECH 405.

EARLY CHILDHOOD EDUCATION (P-3)

126-127 Semester Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	0-1	ENG	102	Composition II	3
ENG	101	Composition I	3	MTH		Approved Math Elective	3
MTH	112	Pre-Calculus Algebra	3	ECO	200	Basic Economics	3
BIO	101	General Biology I	3	BIO	102	General Biology II	3
BIO	101L	General Biology Lab I	1	BIO	102L	General Biology Lab II	1
HIS	101	World History I **or**	3	HIS	203	Funds of Amer History & Gov't	3
HIS	102	World History II	(3)	HED	101	Personal & Community Hlth **or**	2
ART	101	Art Appreciation **or**	3	PED		Approved PE Activity **or**	(2)
MUS	101	Music Appreciation	(3)	MSC	101	Military Science	(2)
			16-17				18

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
PHY	101	Physical Science I	3	HDF	211	Child Human Growth & Develop	3
PHY	101L	Physical Science I Lab	1	SPE	201	Intro Study of Except'l Children	3
		Approved Soc Science Elective	3	ENG	205	General Speech	3
FED	200	Intro to Teacher Education	2	FED	300	Foundations of Education	2
FED	215	Intro to Instructional Tech	3	MTH		Approved Math Elective	3
MTH		Approved Math Elective	3				17
			18				

Junior Year

First Semester			*Sem. Hrs*	*Second Semester*			Sem. Hrs.
PSY	403	Educational Psychology	3	NHM	404	Nutrition for Early/Middle	3
FED	404	Tests & Measurements	3	ECE	300	Artistic Expressions	3
ECH	300	Programs in Early Childhood	3	ECE	302	M/M of Social Studies	3
SPE	326	Mgt. of Classroom Behavior	3	ECE	303	M/M of Science & Health	3
ECH	405	Organization/Admin of ECH	3	ECE	305	M/M of Mathematics	3
			15				15

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem.Hrs.*
ECE	301	M/M of Language Arts	3	ECH	495	Internship	12
ECE	412	Children's Literature	3				12
HDF	304	Parenting	3				
ECE	304	Teaching Reading Young Child	3				
CSD	421	Multicultural Issues	3				
			15				

Additional courses required for candidates seeking dual certification in Elementary Education (K-6) are ECE 407 and ELE 300.

COURSE DESCRIPTIONS

ECE 300 *Artistic Expressions through Art, Music and Movement* – 3 hrs. A course designed to give candidates an understanding of the use of art and music are 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). **Prerequisite: Admission to Teacher Education.**

ECE 301 *Materials and Methods of Teaching Language Arts* – 3 hrs. A course 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, Health & Nutrition* – 3 hrs. A course 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 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. Emphasis on 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. A course providing 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 appropriate 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. A course 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 Technique Skills* – 3 hrs. A course presenting 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. A course involving 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. 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. **Prerequisite: Admission to Teacher Education**

ECE 407 *Teaching Intermediate Readers* – 3 hrs. 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: ECE 304 and Admission to Teacher Education**.

ECE 412 *Children's Literature* – 3 hrs. 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. Introduction to the field of early childhood education. Topics 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. A course addressing 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 levels 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* - 12 hrs. Fourteen weeks of full-time teaching under the immediate direction of supervising teachers in off-campus public (or approved private) 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)

ELE 300 *Elementary School Organization* – 3 hrs. A survey of 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* - 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. Weekly seminar is required.** (Offered Fall and Spring)

DEPARTMENT OF CURRICULUM, TEACHING & EDUCATIONAL LEADERSHIP

201 Carver Complex North/Hollins Wing
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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 to 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 following Career Technical Education areas: Agriscience Education, Business/Marketing Education, Family and Consumer Sciences Education, Technical Education and Career Technologies. 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 must include courses in animal and agricultural mechanics, poultry and forestry;

2. The 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 must include courses in clothing and textiles, consumer education, housing--- living environment and individual and family living, parenthood education, nutrition and parenthood, professional education and consumer sciences, 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. Career Technologies 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
AGRISCIENCE EDUCATION
125-126 Semester Hours

Freshman Year

First Semester			Sem. Hrs	Second Semester			Sem. Hrs
ORI	101	Survival Skills	0-1	ENG	102	Composition II	3
ENG	101	Composition I	3	CHE	101	General Chemistry	3
MTH	112	Pre-Calculus Algebra	3	CHE	101L	General Chemistry Lab	1
BIO	101	General Biology	3	HIS	101	World History	3
BIO	101L	General Biology	1	AGB	102	Careers in Agriculture	1
AGB	199	Computers in Agriculture	3	ART	101	Art Appreciation **OR**	3
			13-14	MUS	101	Music Appreciation	(3)
				HED 101 **OR** PED Activities **OR** MSC 101			2
							16

Sophomore Year

First Semester			Sem. Hrs	Second Semester			Sem. Hrs
ENG	201	English Literature I **OR**	3	ENG	202	English Literature II **OR**	3
ENG	301	Survey of Am. Lit. **OR**	(3)	ENG	302	Survey of American Lit **OR**	(3)
ENG	203	World Literature I	(3)	ENG	204	World Literature II	(3)
FED	200	Intro. To Teacher Ed.	2	PSY	201	General Psychology	3
HIS	203	Found. of Amer. Hist.	3	SPE	201	Intro. To Study of Except. Child	3
AGB	211	Metal Fabrication	3	SPS	101	Intro. to Plant Science	3
AGB	221	Intro. to Ag. Economics	3	FED	212	Human Growth/Growth Dev.	3
FAS	112	Intro. to Animal Science	3				15
			17				

Junior Year

First Semester			Sem. Hrs	Second Semester			Sem. Hrs
FED	300	Foundations of Education	2	AGB	212	Wood Technology	3
PSY	403	Educational Psychology	3	AGB	301	Electrical Systems & Machines	3
SPS	251	Intro. to Soil Science	4	AGB	311	Small Power Unit & Equip.	3
SPS	281	Intro. to Forestry	3	AGB	314	Small Structure Construction	3
AGB	302	Organ. & Admin. of C/TE	3	SPS	423	Ornamental I **OR**	3
ENG	205	General Speech	3	SPS	425	Lawn and Turf Mgt. **OR**	
			18	SPS	427	Ornamental II **OR**	
				ECO	232	Principle of Microeconomics	3
							18

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
FED	404	Tests & Measurements	3	AGB	495	Internship	12
SED	409	Reading in the Content Area	3				12
AGB	401	Methods of Teaching Agriscience	3				
AGB	405	Extension Methods	3				
AGB	421	Agribusiness Management	3				
			15				

SECONDARY EDUCATION

BIOLOGY

127-128 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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**	2	ART	101	Art Appreciation **OR**	
PED		Physical Education Activities **OR**	(2)	MUS	101	Music Appreciation	3
MSC	101	Military Science	(2)	HIS	102	World History II	3
HIS	101	World History I	3	BIO	201	Invertebrate Zoology	3
ORI	101	Survival Skills	0-1	BIO	201L	Invertebrate Zoology Lab	1
MTH	112	Pre-Calculus Algebra	3				17
			15-16				

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ECO	200	Basic Economics	3	BIO	311	Genetics	3
ENG	203	World Literature I[1]	3	BIO	311L	Genetics Lab	1
ENG	205	General Speech	3	ENG	204	World Literature II[2]	3
FED	200	Introduction 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	103L	Principles of Biology	1	SPE	201	Intro. Excep. Individuals	3
			18				17

[1]ENG 201 or ENG 301
[2]ENG 202 or ENG 302

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	3	CHE	407L	Biochemistry Lab	1
			16	SED	409	Reading in Content Area	3
							18

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
BIO	411	Cell Biology	3	SED	495	Directed Teaching	12
BIO	411L	Cell Biology Lab	1				12
BIO	340	Embryology	3				
BIO	340L	Embryology	1				
PSY	403	Educational Psychology	3				
SED	424	Teaching Science in Secondary Schools	3				
			14				

SECONDARY EDUCATION
BUSINESS / MARKETING
125-126 Semester Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	101	Composition I	3	ENG	102	Composition II	3
BIO	101	General Biology I	3	PHY	101	Physical Science	3
BIO	101L	General Biology Lab	1	PHY	101L	Physical Science Lab	1
HIS	101	World History	3	HIS	203	Found. Am. Hist./Gov't.	3
ART	101	Art Appreciation **OR**	3	MTH	112	Pre-Calculus Algebra	3
MUS	101	Music Appreciation	(3)	ENG	205	General Speech	3
HED	101	Personal & Community Health **OR**	2				16
MSC	101	Military Science **OR**	(2)				
PED	1xx	Physical Ed. Activity Course **OR**	(2)				
ORI	101	Survival Skills	0-1				
			15-16				

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ECO	200	Basic Economics	3	PSY	201	General Psychology	3
ENG	201	English Literature **OR**	3	ENG	202	English Literature II **OR**	3
ENG	203	World Literature **OR**	(3)	ENG	204	World Literature II **OR**	(3)
ENG	301	American Literature	(3)	ENG	302	American Literature II	(3)
FED	200	Intro. to Teacher Education	2	SPE	201	Intro. to Exceptional Children	3
FED	212	Human Growth & Development	3	OSM	202	Word Processing	3
ACC	203	Introduction to Accounting I	3	ACC	204	Introduction to Accounting II	3
MGT	213	Computer Apps. in Business	3				15
			17				

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
FED	300	Foundations of Education	2	SED	409	Reading in Content Area	3
PSY	403	Educational Psychology	3	OSM	302	Desktop Publishing & IT	3
OSM	204	Office Procedures	3	TTE	301	Principles of C/TE	3
MGT	207	Legal Environment & Ethics	3	TTE	302	Curriculum Devel. & Eval.	3
SED	307	M/M Teaching Secondary Schools	3	OSM	310	Business Communication	3
OSM	215	Business Mathematics	3				15
			17				

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
FED	404	Test & Measurements	3	BED	495	Internship in Business Education	12
BED	305	Office Practicum	3				12
MKT	306	Principles of Marketing	3				
OSM	309	Records Management	3				
OSM	312	Office Management	3				
BED	425	M/M Teaching Business	3				
			18				

SECONDARY EDUCATION
CAREER TECHNOLOGIES
122-123 Semester Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	101	Composition I	3	ENG	102	Composition II	3
		[2]Science Elective	3			[2]Science Elective	3
		[2]Science Elective Lab	1			[2]Science Elective	1
HIS	101	World History	3	HIS	203	Found. Of Am. Hist./Govt.	3
ART	101	Art Appreciation **OR**	3	MTH	112	Pre-Calculus Algebra	3
MUS	101	Music Appreciation	(3)	ENG	205	General Speech	3
HED	101	Personal & Community Health **OR**	2				16
MSC	101	Military Science **OR**	(2)				
PED	1xx	[1]Physical Ed. Activity Course	(2)				
ORI	101	Survival Skills	0-1				
			15-16				

[1]PED 101, PED 107, PED 109, PED 131, PED 133, or PED 140
[2]PHY 103 and PHY 103L, or BIO 101 and BIO 101L, or PHY 104 or PHY 104L, CHE 101 or CHE 101L, CHE 111 or CHE 111L

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ECO	200	Basic Economics	3	PSY	201	General Psychology	3
ENG	201	English Literature **OR**	3	MDT	111	Technical Drafting	3
ENG	203	World Literature **OR**	(3)	INT	105	Intro. to Graphics Comm.	3
ENG	301	American Literature	(3)	INT	205	Intro. Power/Energy Conversion	3
FED	200	Intro. to Teacher Education	2	SPE	201	Intro. to Exceptional Children	3
FED	212	Human Growth & Development	3				15
INT	102	Introduction Industrial App. Tech.	3				
			14				

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
FED	300	Foundations of Education	2	SED	307	M/M T'ching in Sec. Schools	3
PSY	403	Educational Psychology	3	SED	409	Reading in Content Area	3
INT	221	Materials & Processes I	3	INT	207	CAD: Construction Management	3
INT	303	Trans. Tech.: Power/Energy Systems	3	INT	222	Materials & Process II	3
INT	306	Communication Technology	3	INT	304	Production Systems: Manufacturing	3
			14	INT	314	Construction Technologies	3
							18

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
FED	404	Tests & Measurements	3	TTE	495	Internship	12
TTE	406	Methods of Teaching in C/TE	3				12
TTE	404	Classroom/Lab Mgmt. in C/TE	3				
TTE	401	Planning/Org. Tech Ed. Programs	3				
INT	421	Bio. Tech: Issues & Perspectives	3				
INT	484	Introduction to CIM & Technology	3				
			18				

SECONDARY EDUCATION

CHEMISTRY

127-128 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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**		ART	101	Art Appreciation **OR**	
PED		Physical Education Activities **OR**		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	4
ORI	101	Survival Skills	1				17
MTH	125	Calculus I[1]	4				
			17				

[1]Prerequisite: MTH 113[a] or satisfactory placement test score
[a]Prerequisite: MTH 112 or satisfactory placement test score

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ECO	200	Basic Economics	3	FED	200	Intro. to Education	2
ENG	203	World Literature I[1]	3	FED	212	Hum. Growth & Dev.	3
ENG	205	General Speech	3	ENG	204	World Literature II[2]	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	3	FED	215	Instructional Technology	3
			16	SPE	201	Intro. Excep. Individuals	3
							18

[1]ENG 201 or ENG 301
[2]ENG 202 or ENG 302

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	M/M Teaching in Sec. Schools	3	SED	409	Reading in Content Area	3
PSY	403	Educational Psychology	3				16
			18				

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
CHE	407	Biochemistry I	3	SED	495	Directed Teaching	12
CHE	407L	Biochemistry I Lab	1				12
CHE	409	Instrumental Methods	3				
PHY	105	Physics I	4				
SED	424	M/M T'ching Sci. in Sec. Schls.	3				
			14				

ENGLISH

126-127 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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 & Community Health **OR**	2	ART	101	Art Appreciation **OR**	3
PED		Physical Education Activities[1] **OR**	(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	3
MTH	112	Pre-Calculus Algebra	3				16
ORI	101	Survival Skills	0-1				
			16				

[1]PED 101, PED 107, PED 109, PED 131, PED 133, or PED 140

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	Introduction to Teacher Education	2	SPE	201	Intro. Excep. Individuals	3
FED	212	Human Growth & Development	3	ENG	202	Surv. of English Lit. II	3
ENG	201	Survey of English Literature I	3	PSY	201	General Psychology	3
			17				18

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
FED	300	Foundations of Education	2	FED	404	Tests & Measurements	3
ENG	301	Survey of American Literature I	3	ENG	302	Surv. of Amer. Lit. II	3
ENG	404	Black Literature	3	ENG	307	Shakespeare	3
ENG	305	16th Century English Literature **OR**	3	ENG	308	Literary Criticism	3
ENG	306	17th Century English Literature	(3)	ENG	309	History of English Lang.	3
ENG	310	Journalism Workshop	2	SED	409	Reading in Content Area	3
SED	307	M/M Teaching in Sec. Schools	3				18
			16				

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ENG	401	Romantic Writers **OR**	3	SED	495	Internship	12
ENG	402	Victorian Writers	(3)				12
ENG	403	Play Production	2				
PSY	403	Educational Psychology	3				
SED	421	M/M T'ching ELA in Sec. Schls.	3				
ENG	304	Advanced Composition	3				
			14				

SECONDARY EDUCATION

HISTORY

127-128 Credit Hours

Freshman Year

First Semester			Sem. Hrs.
BIO	101	General Biology I	3
BIO	101L	General Biology I Lab	1
ENG	101	Composition I	3
HED	101	Personal & Community Health **OR**	2
PED		Physical Education Activities[1] **OR**	(2)
MSC	101	Military Science	(2)
HIS	101	World History I	3
MTH	112	Pre-Calculus Algebra	3
ORI	101	Survival Skills	0-1
			15-16

Second Semester			Sem. Hrs.
PHY	101	Physical Science I	3
PHY	101L	Physical Science I Lab	1
ENG	102	Composition II	3
ART	101	Art Appreciation **OR**	(3)
MUS	101	Music Appreciation	3
HIS	104	Intro. History Discipline	3
HIS	102	World History II	3
			16

[1]PED 101, PED 107, PED 109, PED 131, PED 133, or PED 140

Sophomore Year

First Semester			Sem. Hrs.
ECO	200	Basic Economics	3
ENG	203	World Literature I[2]	3
ENG	205	General Speech	3
FED	200	Introduction to Teacher Education	2
FED	212	Human Growth & Development	3
HIS	201	American History I	3
HIS	397	Program Seminar I	0.5
			17.5

Second Semester			Sem. Hrs.
SOC	201	Intro. to Sociology	3
ENG	204	World Literature II[3]	3
HIS	398	Program Seminar II	0.5
FED	215	Instructional Technology	3
SPE	201	Intro. Excep. Individuals	3
HIS	202	American History II	3
			15.5

[2]ENG 201 or ENG 301
[3]ENG 202 or ENG 302

Junior Year

First Semester			Sem. Hrs.
FED	300	Foundations of Education	2
HIS	206	Alabama History	3
HIS	497	Program Seminar III	0.5
PSC	205	American Government	3
PSC	206	State & Local Government	3
PSY	201	General Psychology	3
SED	307	M/M T'ching in Sec. Schools	3
			17.5

Second Semester			Sem. Hrs.
FED	404	Tests & Measurements	3
HIS	304	African-Amer. Hist.	3
HIS	408	Hist. of South Since 1865	3
HIS	305	Modern Asia	3
GEO	214	World Regional Geo.	3
HIS	498	Program Seminar IV	0.5
SED	409	Reading in Content Area	3
			18.5

Senior Year

First Semester			Sem. Hrs.
HIS	402	History of Latin America	3
HIS	403	Modern Europe	3
HIS	499	Senior Seminar	3
PSY	403	Educational Psychology	3
SED	423	M/M T'ching Soc. Sci. in Sec. Schools	3
			15

Second Semester			Sem. Hrs.
SED	495	Internship	12
			12

SECONDARY EDUCATION
MATHEMATICS
126-127 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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 & Community Health **OR**	2	ART	101	Art Appreciation **OR**	3
PED		Physical Education Activities[1] **OR**	(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	3
MTH	112	Pre-Calculus Algebra	3				16
ORI	101	Survival Skills	1				
			16				

[1]PED 101, PED 107, PED 109, PED 131, PED 133, or PED 140

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ECO	200	Basic Economics	3	ENG	204	World Literature II[2]	3
ENG	203	World Literature I[2]	3	FED	215	Instructional Technology	3
ENG	205	General Speech	3	SPE	201	Intro. Excep. Individuals	3
FED	200	Introduction to Teacher Education	2	MTH	126	Calculus II	4
FED	212	Human Growth & Development	3	PSY	201	General Psychology	3
MTH	125	Calculus I	4				16
			18				

[2]ENG 201 and ENG 202, or ENG 301 and ENG 302

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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	3
SED	307	M/M T'ching in Sec. Schools	3	MTH		Advisor-approved elective	3
			18				18

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
MTH	401	History of Mathematics	1	SED	495	Internship	12
MTH	453	Probability & Statistics	3				12
MTH	481	Senior Project	3				
PSY	403	Educational Psychology	3				
SED	422	M/M T'ching Math in Sec. Schools	3				
			13				

SECONDARY EDUCATION
PHYSICS
126-127 Credit Hours

Freshman Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
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**	2	ART	101	Art Appreciation **OR**	3
PED		Physical Education Activities[1] **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	4
MTH	125	Calculus I	4				17
ORI	101	Survival Skills	1				
			17				

[1]PED 101, PED 107, PED 109, PED 131, PED 133, or PED 140

Sophomore Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
ECO	200	Basic Economics	3	MTH	238	Applied Diff. Equations	3
ENG	203	World Literature I[2]	3	ENG	204	World Literature II[3]	3
ENG	205	General Speech	3	PHY	106	Physics II	4
FED	200	Introduction to Teacher Education	2	FED	215	Instructional Technology	3
FED	212	Human Growth & Development	3	SPE	201	Intro. Excep. Individuals	3
PHY	105	Physics I	4				16
			18				

[2]ENG 201 or ENG 301
[3]ENG 202 or ENG 302

Junior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
FED	300	Foundations of Education	2	FED	404	Tests & Measurements	3
PHY	201	Introduction 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	M/M T'ching in Sec. Schools	3	PHY	451	Intro. to Solid State Phys.	3
			14	SED	409	Reading in Content Area	3
							18

Senior Year

First Semester			Sem. Hrs.	Second Semester			Sem. Hrs.
PHY	421	Introduction to Quantum Mechanics	3	SED	495	Internship	12
PHY	341	Heat & Thermodynamics	3				12
PHY	401	Optics	3				
PSY	403	Educational Psychology	3				
SED	424	M/M T'ching Science in Sec. Schools	3				
			15				

COURSE DESCRIPTIONS

EDU 100L *Reading with Lab* - 3 hrs. Corrective 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 Teacher's Test (APTT) 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** (On demand)

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. **2-hour lab requirement for Early Childhood, Elementary, Early Childhood Special Education, and Collaborative Teacher K-6 until candidates demonstrate a passing score on Praxis II. Prerequisite**: **2.50 Grade Point Average** (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, 2.50 Grade Point Average** (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: 2.50 Grade Point Average** (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 of the effects of the purpose of education on organization administration curriculum, and teaching procedures. **2-hour lab requirement for Secondary Education majors until candidates demonstrate a passing score on Praxis II. Prerequisites: Formal admission to the teacher education program** (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. **Prerequisite: Formal admission to the teacher education program** (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: Formal admission to the teacher education program** (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: Formal admission to the teacher education program** (Offered Fall, Spring, and Summer)

SED 421 Materials and Methods of *Teaching English in Secondary Schools* - 3 hrs. 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. **Prerequisite: Formal admission to the teacher education program** (Offered Fall and Spring)

SED 422 Materials and Methods of *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. **Prerequisite: Formal admission to the teacher education program** (Offered Fall and Spring)

SED 423 Materials and Methods of *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** (Offered Fall and Spring)

SED 424 Materials and Methods of *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. **Prerequisite: Formal admission to the teacher education program** (Offered Fall and Spring)

SED 495 *Internship* - 12 hrs. One semester 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: Formal admission to the internship** (Offered Fall and Spring)

DEPARTMENT OF PSYCHOLOGY/COUNSELING, SPECIAL EDUCATION AND COMMUNICATIVE SCIENCES AND DISORDERS

111 Carver Complex North/Hollins Wing
(256) 372-5544
Dr. Shirley T. King, Chair
shirley.king@aamu.edu

MISSION

The Department of Psychology/Counseling, Special Education and Communicative Sciences and Disorders is committed to providing 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 who are being prepared for 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 and mental processes;

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, techniques, and 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 Offerings 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, Rehabilitation Concentration in Counseling Psychology, 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 area of concentration.

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

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills I	0-1	ENG	102	Composition II	3
ENG	101	Composition I	3	HIS	102	World History	3
HIS	101	World History	3	CMP	101	Fundamentals 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	1
PED	101	Fitness for Life **OR**	2				
PED		P.E. Activity **OR**	(2)				
MSC	101	Military Science **OR**	(2)				
HED	101	Personal/Comm Health	(2)				
			15-16				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
PSY	201	General Psychology	3	SOC	201	Intro to Sociology	3
	101	[1]Elem Foreign Lang I	3	PHL	201	Intro to Philosophy	3
MTH	112	Pre-Calculus	3		102	[1]Elem Foreign Lang II	3
ENG	205	General Speech	3	PSY	301	Elementary Behavioral Statistics	3
----	----	General Elective	3				15
			18				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ECO	200	Basic Economics	3		202	[1]Interm Foreign Lang II	3
	201	[1]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	3			Minor Courses	6
			15				16

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
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	6		----	Minor Courses	6
			16				15

[1]French or Spanish

Psychology Electives

Course Number	Course Title	Sem. Hrs.
PSY 303	Applied Psychology	3
PSY 304	Developmental Psychology	3
PSY 320	Cognitive Psychology	3
PSY 330 **OR**	Social Psychology	3
SOC 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	[1]Individual Study in Psychology	3
PSY 406	Industrial Psychology	3
PSY 410	Helping Skills and Techniques	3
PSY 421	[2]Psychology Internship	3
PSY 422	[2]Psychology Internship	3
PSY 423	Adolescent Psychology	3
PSY 482	Human Sexuality	3

[1]With permission of Instructor
[2]Open only to senior psychology majors with permission of Instructor

PSYCHOLOGY MINOR

The undergraduate minor in psychology requires a total of 18 semester hours – excluding General Psychology (PSY-201). The required courses are as follows:

Course No.	Course Title	Semester Hours
PSY 202	History & Systems in Psychology	3
PSY 301	Elementary Behavioral Statistics	3
PSY 307	Introduction to Research	3
PSY 471	Abnormal Psychology	3
PSY	Psychology Electives	6

IMPORTANT NOTES

1. 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.

2. Grades lower than "C" will not be counted toward the major or minor requirements.

3. All Psychology majors must have a minor area of concentration.

4. A minimum total of 127 semester hours is required for graduation.

5. 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.

Psychology majors can select one of the approved minors listed below through consultation with their academic advisor, but other minors are also available. Student should refer to the catalog for the appropriate courses to take for each minor.

Marketing
Management
Finance
Economics
Telecommunications
Criminal Justice
Philosophy
Sociology
Political Science
Apparel, Merchandising, and Design
Human Development & Family Studies
Nutrition & Hospitality Management
Military Science

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 and Summer)

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, pubic 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, neutral growth, language, perception, cognition, and socialization relative to both biological and environmental influences. **Prerequisite: PSY 201** (Offered Spring)

PSY 307 *Introduction to Research - 3 hrs.* 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 and Spring)

PSY 320 *Cognitive Psychology.* 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 include. **Prerequisite: PSY 201** (Offered Fall)

PSY 360 *Personality Theories - 3 hrs.* Focus 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.* A course emphasizing 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)

PSY 410 *Helping Skills and Techniques - 3 hrs.* 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 Corequisite: PSY 415L** (Offered Fall)

PSY 415L *Physiological Psychology Lab - 1 hr.* Various laboratory exercises on the various topics covered. **Prerequisite: PSY 201 Corequisite: 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. **Prerequisite: PSY 201 and PSY 307 Corequisite: PSY 416L** (Offered Spring and Summer)

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 and Summer)

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 and Spring)

PSY 422 *Psychology Internship II - 3 hrs.* Same as PSY 421, but allowing additional hours credit. **Prerequisite: PSY 201** (Offered Fall, Spring)

PSY 423 *Adolescent Psychology - 3 hrs.* A study of 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 Fall)

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.* An intense study of the physiological, psychological, sociological, and ethical considerations of human sexuality. **Prerequisite: PSY 201** (Offered **Spring**)

SPECIAL EDUCATION PROGRAM AREA

111 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 (P-3), 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.

EARLY CHILDHOOD SPECIAL EDUCATION (P-3)

126-127 Semester Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem.Hrs*
ORI	101	Survival Skills I	0-1	ENG	102	Composition II	3
ENG	101	Composition I	3	MTH	113	Pre-Calculus Trig.	3
MTH	112	Pre-Calculus Algebra	3	ART	101	Art Appreciation **OR**	3
BIO	101	General Biology I/Lab I	4	MUS	101	Music Appreciation	(3)
HED	101	Personal & Comm Hlth **OR**	2	BIO	102	General Biology II/Lab	4
PED		PE Activity **OR**	(2)	HIS	203	Found. Of Amer. Hist./Govt.	3
MSC	101	Military Science	(2)				16
HIS	101	World History I **OR**	3				
HIS	102	World History	(3)				
			15-16				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
PHY	101	Physical Science I/Lab	4	ECO	200	Basics of Economics	3
FED	200	Introduction to Education	2	HDF	211	Human Growth/Development	3
SOC	201	Intro to Sociology **OR**	3	SPE	209	Introduction to ECSE	3
PSY	201	General Psychology	(3)	SPE	205	Language Development	3
SPE	201	Intro to Study Excep. Child	3	MTH		Approved Math elective	3
MTH	110	Finite Mathematics	3				18
			18				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
				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	3	ECH	300	Programs in ECE	3
CSD	421	Multicultural Issues	3	PED	427	Adaptive PE	3
			15				17

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem.Hrs.*
FED	404	Tests and Measurements	3	SPE	495	Internship	12
SPE	309	Adapt Tech & Meth	3				12
SPE	327	Assessment in ECSE	3				
SPE	328	Learning Strategies	3				
SPE	403	IEP/IFSP Writing	3				
			15				

COLLABORATIVE (K-6)

126-127 Semester Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem.Hrs*
ORI	101	Survival Skills I	0-1	ENG	102	Composition II	3
ENG	101	Composition I	3	MTH		Approved Math elective	3
MTH	112	Pre-Calculus Algebra	3	ART	101	Art Appreciation **OR**	3
BIO	101	General Biology I/Lab	4	MUS	101	Music Appreciation	(3)
MSC	101	Military Science **OR**	2	HIS	101	World History I **OR**	3
HED	101	Personal & Com Hlth **OR**	(2)	HIS	102	World History II	(3)
PED		PE Activity **OR**	(2)	BIO	102	General Biology II/Lab II	4
HIS	203	Found. Of Am. Hist./Govt.	3				16
			15-16				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
PHY	101	Physical Science I/Lab I	4	MTH		Approved Math elective	3
MTH		Approved Math elective	3	FED	215	Instructional Technology	3
SOC	201	Intro. to Sociology **OR**	3	HDF	211	Child Growth/Development	3
PSY	201	General Psychology	(3)	SPE	201	Intro to Exceptional Children	3
FED	200	Introduction to Education	2				15
			15				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
ECE	305	M/M of Tchg Mathematics	3	CSD	421	Multicultural Issues	3
FED	300	Foundations of Education	2	FED	404	Tests & Measurements	3
ECE	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
ECE	302	Methods of Social Studies	3	SPE	426	Collaborative Consultation	3
SPE	328	Learning Strategies	3	SPE	326	Mgt. of Classroom Behavior	3
			17				18

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
SPE	410	Counseling Parents	3	SPE	495	Internship (K-6)	12
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	3				
SPE	205	Language Development	3				
			18				

COLLABORATIVE TEACHER (6-12)

129-130 Semester Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem.Hrs*
ORI	101	Survival Skills I	0-1	ENG	102	Composition II	3
ENG	101	Composition I	3	MTH	113	Pre-Calculus Trig.	3
MTH	112	Pre-Calculus Algebra	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	(3)
PED		PE Activity **OR**	(2)	BIO	102	General Biology II/Lab II	4
MSC	101	Military Science	(2)				16
HIS	101	World History I **OR**	3				
HIS	102	World History II	(3)				
			15-16				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
SPE	201	Intro to Study Except Child	3	ENG	204	World Literature II	3
PHY	101	Physical Science I/Lab I	4	ENG	205	General Speech	3
FED	200	Introduction to Education	2	ECO	200	Basic of Economics	3
FED	215	Instructional Technology	3	FED	212	Human Growth/Development	3
ENG	203	World Literature	3	SOC	201	Intro. to Sociology	3
MTH	110	Finite Mathematics	3	MTH		Advisor-approved elective	3
			18				18

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
SED	409	Reading in Content Area	3	FED	404	Tests & Measurements	3
FED	300	Foundations of Education	2	SED	424	Tchng Science in Sec Schools	3
SPE	205	Language Development	3	SED	421	M/M Tchng Eng in Sec. Sch.	3
PSY	403	Educational Psychology	3	SPE	436	Assessment in Sec. Sch	3
SPE	319	Transitioning Across the Grades	3	SPE	426	Collaborative Consultation	3
SPE	435	Learning Strategies for Adol.	3	SPE	431	Behavior Mgt for Sec Tchrs	3
			17				18

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem Hrs*
SPE	430	M/M of Content Area Inst	3	SPE	495	Internship (6-12)	12
SED	422	M/M T'ching Mth. in Sec. Schls.	3				12
SPE	403	IEP/IFSP Writing	3				
SPE	432	M/M Functional Curriculum	3				
SED	423	M/M of Teaching Social Studies	3				
			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.* A course covering the rationale for ECSE and providing 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.* A course designed to inform entry-level teacher candidates 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.* A course 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 - 2 hrs.* A course covering 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 327 *Assessment in Early Childhood Special Education – 3 hrs.* Emphasis upon the basic knowledge and skills that are prerequisites to analyzing, selecting, and implementing effective assessment practices with children from birth through age eight with disabilities. **Prerequisites: FED 200 and SPE 201**

SPE 328 *Learning Strategies - 3 hrs.* A course 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 designed to inform entry-level teachers of children with disabilities with the legal requirements, the procedures, and the techniques used for developing legally correct individualized education programs (IEPs) and individualized family service plans (IFSPs) as required by the Individuals with Disabilities Education Act of 1997 (IDEA). **Prerequisite: None** (Offered Spring and Fall)

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.* A course 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.* A course 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 *Materials and Methods of Functional Curricula – 3 hrs.* A course 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.* A course 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)

SPE 495 *Internship 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)

COMMUNICATIVE SCIENCES & DISORDERS PROGRAM AREA

104 Carver Complex North
(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 hospital, 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, 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.

Effective Spring 2008 semester, undergraduate students declaring a major in CSD must have a 2.5 overall GPA prior to enrolling into any CSD prefixed courses. Also, CSD majors must take and pass a speech-language-hearing screening during their first semester in the program (class requirement in CSD 202/500 – Survey of Communication Disorders). The purpose of this screening is to identify any speech, language or hearing problem that may interfere with a students' academic or clinical progression in the Program. Students must demonstrate the ability to speak Standard American English intelligibly including modeling of all English phonemes. Students will be enrolled in the AAMU Speech and Hearing Clinic free of charge if test results deem intervention necessary.

CSD majors whose first language is not English require a minimum score on the *Test of English as a Foreign Language (TOEFL)* of 600 (paper-based), 250 (computer-based) within two years prior to taking CSD coursework. The *TOEFL* web site is http://www.toefl.org. Students must also take and pass a speech-language screening in the CSD Program's Speech and Hearing Clinic for an assessment of the applicant's command of spoken and written English. Students must demonstrate the ability to speak Standard American English.

Students enrolled in CSD 310 – Clinical Procedures are required to undergo a criminal background check which includes fingerprinting and a check of national and state criminal databases. This process is handled through the Teacher Service Center on campus and applications are forwarded to the Alabama State Department of Education (ASDE) for processing. 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. Results must be received by the CSD Program prior to students entering practicum courses.

COMMUNICATIVE SCIENCES AND DISORDERS CURRICULUM

125-126 Semester Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills I	0-1	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	MSC	101	Military Science **OR**	2
MTH	112	Pre-Calculus Algebra **OR**	(3)	PED	101	Fitness for Life **OR**	(2)
		Higher Math	3	PED		PE Elective	(2)
			15-16	MUS	101	Music Appreciation	3
							16

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
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. **OR**	3
				Any 100, 200, or 300 level Human/Child Growth & Development			(3)
							17

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
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	3	CSD	332	Augmentative Comm.	3
			15	CSD	414	Advanced Speech Pathology	3
							17

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
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
SPE	326	Mgmt Classrm Behavior	3	ECO	200	Basic Economics	3
			15				15

*CSD 325 Voice & Articulation (3) (if needed as a substitute course for CSD 203 Phonetics)

COURSE DESCRIPTIONS

CSD 202 *Survey of Communication Disorders - 3 hrs*. A broad survey of the field of speech-language pathology and audiology. Students must take and pass a speech-language-hearing screening during their first semester in the program (class requirement in CSD 202). **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 along with utilization of diagnostic tests, test interpretation, and report writing of test results on speech and language disorders. **Prerequisite: CSD 203, CSD 205, and CSD 215** (Offered Fall)

CSD 308 *Basic Audiology - 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 Disorders - 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. Students enrolled in CSD 310 are required to undergo a criminal background check which includes fingerprinting and a check of national and state criminal databases. Results must be received by the CSD Program prior to students entering practicum courses. **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***.** Emphasis 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***.** A course 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, finger spelling, 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.* A course 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 is 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.* A course addressing 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 to 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***.** A course 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***.** A course 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)

SCHOOL OF ENGINEERING AND TECHNOLOGY

Dr. Trent Montgomery, Dean
227 Engineering & Technology Building
256-372-5560
trent.montgomery@aamu.edu

INTRODUCTION

The School of Engineering and Technology provides educational opportunities for students with interests in preparing for employment in engineering, technology, and computer science in industry and government, self-employment as engineering and technological entrepreneurs, graduate education, and professional engineering practice. Students in industrial technology are prepared for careers in technical education and 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 available 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

Requirements for admission to and graduation from the School of Engineering and Technology are as following:

1. Satisfactory completion of entrance examinations.

2. Demonstrated maturity in the physical sciences and mathematics..

3.. 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.

4. A minimum grade point average of 2.00 in the major field of specialization.

PROGRAM OFFERINGS

The School of Engineering and Technology offers three engineering degree programs – civil, electrical and mechanical engineering.

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 Fundamentals 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 Fundamentals of Engineering (FE) examination. The School of Engineering and Technology offers a graduate program leading to the master of engineering degree in Materiel Engineering.

The Department of Technology offers programs of instruction in engineering technology, industrial technology, and construction management.. The Engineering Technology program provides instruction in, 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 and Applied Technology Management. Both options leads 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 Technology also offers a curriculum leading to the BS degree in Construction Management.

The Department of Computer Science provides a curriculum 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). The Department of Compute Science also offers a graduate program leading to the masters of science degree in computer science.

Every student enrolled in School of Engineering and Technology will be assigned an advisor. All students are assigned advisors who are instructors in their perspective program.

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. All programs in engineering, computer science and engineering technology are accredited by the Accrediting Board for Engineering and Technology (ABET)..

COOPERATIVE EDUCATION/INTERNSHIPS

Academic credit up to 6 semester hours may be given 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.

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.

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. While it is not a requirement, students in the School of Engineering & Technology to either have their own computer or access to computer for work after hours. are expected to either have their own computer or access to a computer for work after hours.

COURSE DESCRIPTIONS

CE - Civil Engineering
CMG - Construction Management
CMP - Computer Science
CTE- Career Technology Education
CWE - Cooperative Education Work Experience
EE- Electrical Engineering
EET - Electrical Engineering Technology
EGC - Engineering General Course
GEN- Graduate Engineering Course
INT - Industrial Technology
MDT - Mechanical Drafting and Design Technology
ME- Mechanical Engineering
MET - Mechanical Engineering Technology
TBC - Technology Basic Course
TGC - Technology General Course
TED- Technical Education

DEPARTMENT OF CIVIL ENGINEERING

305 Engineering & Technology Building
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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; and 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 Bachelor of Science Degree in Civil Engineering is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

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:

- Successfully practice civil engineering in industry and/or government
- Proceed on the track towards attainment of professional registration by taking the Fundamentals of Engineering (FE) Examination
- Continue to pursue lifelong learning through professional development or completion of advanced studies (graduate degree, short courses etc.)
- Recognize the need for scholarship, leadership, and services 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 or 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, scholarship awarded to a senior in Civil Engineering/AAMU
- The Birmingham Construction Industry Authority scholarship awarded to an eligible engineering major interested in construction
- Alabama Space Grant Consortium Scholarship
- Undergraduate/graduate research assistantships through various grants and research contracts

Additional scholarships are available to Civil Engineering majors only through an annual grant funded by Alabama Licensing Board for General Contractors. In addition, a variety of scholarships are offered through national competitions by organizations such as American Institute of Steel Construction, American Concrete Institute, National Society of Professional Engineers, 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 programs 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 of Department of Civil Engineering and the Director of Cooperative Education.

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.

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. The ASCE Alabama Section awards a scholarship to a senior in Civil Engineering/AAMU.

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. 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 129 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** (47 semester credit hours): ENG 101, ENG 102, ENG 205, ECO 200, CHE 101, CHE 101L, PHY 105, PHY 106, MTH 125, MTH 126, two history electives, one literature elective, a second literature elective or humanities elective (may be chosen from philosophy, foreign language, art, music, theatre, dances), physical education (2 credit hours) or health or military science, ORI 101 (Freshmen and new students who transfer fewer than 31 semester credit hours).
- **School of Engineering Core requirements**: None.
- **Major Requirements for Bachelor of Science in Civil Engineering :** (82 semester credit hours): CHE 102, CHE 102L, MTH 227, MTH 238, EGC 101, EGC 104, EGC 204, EGC 205, EGC 206, EGC 207, EGC 207L, EGC 305, EGC 305L, EE 201, EE 201L, CE 101, CE 201, CE 304, CE 305, CE 306, CE 308, CE 308L, CE 310, CE 401, CE 402, CE 404, CE 408, CE 410, CE 424, CE 470, CE Elective (3).
- **Requirements for Minor in Civil Engineering**: Not available.

CIVIL ENGINEERING (BSCE)
129 Credit Hours

Freshman Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
ORI 101	Survival Skills	1	ENG 102	Composition II[1]	3
ENG 101	Composition I[1]	3	MTH 126	Calculus II	4
CHE 101	General Chemistry I	3	EGC 104	Computer Programming	3
CHE 101L	General Chemistry I Lab	1	CHE 102	General Chemistry II	3
[2]Health Science/PE/MSC Elective		2	CHE 102L	General Chemistry II Lab	1
EGC 101	Eng. Drawing & Graphics	3	PHY 105	Physics I	4
CE 101	Intro. to Civil Engineering	1			18
MTH 125	Calculus I	4			
		18			

[1]ENG 103 and 104 may be taken by international students
[2]FAS 101, HED 101, NHM 103, OR PE 1xx

Sophomore Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
[3]History Sequence Elective		3	[3]History Sequence Elective		3
MTH 227	Calculus III	4	MTH 238	Applied Diff. Equations	3
PHY 106	Physics II	4	EE 201	Linear Circuit Analysis I	3
EGC 205	Statics	3	EE 201L	Linear Circuit Analysis I Lab	1
CE 201	Surveying	3	EGC 206	Dynamics	3
		17	EGC 207	Strength of Materials	3
			EGC 207L	Strength of Materials Lab	1
					17

[3]Any History Sequence

Junior Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
ENG 205	General Speech	3	CE 304	Environmental Eng.	3
ECO 200	Basics of Economics	3	CE 305	Hydrogeology	3
EGC 204	Engineering Analysis	3	CE 308	Soil Mechanics	3
EGC 305	Fluid Mechanics	3	CE 308L	Soil Mechanics Lab	1
EGC 305L	Fluid Mechanics Lab	1	CE 310	Transportation Systems	3
CE 306	Structural Analysis	3	CE 401	Structural Steel Des	3
	16			16	

Senior Year

First Semester		Sem. Hrs.	Second Semester		Sem. Hrs.
[4]Humanities (Lit.) Elective		3	[4]Humanities/Fine Arts Elective		3
CE 402	Reinforced Concrete Des.	3	CE 404	Hydraulic Eng. & Design	3
CE 408	Foundation Design	3	CE 470	Civil Eng. Design Project	3
CE 410	Transportation Eng. & Des.	3	[5]CE Elective		3
CE 424	Civil Engineering Practice	3			12
		15			

[4]At least one literature elective; the second Humanities/Fine Arts Elective may be chosen from literature, philosophy, foreign language, art, music, theatre, or dances.
[5] The CE Elective may be chosen from senior level CE courses or approved by the advisor.

DESCRIPTIONS

CE 101 *Introduction to Civil Engineering* - 1 hr. Introduction to civil engineering profession and societies. Local field trips and guest lectures are also included. (Offered Fall and 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 204 and EGC 305.** (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; and 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)

CE 308 Soil Mechanics - 3 hrs. 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. Co-requisites: EGC 207L, CE 308L.** (Offered Spring)

CE 308L Soil Mechanics Lab. - 1 hr. The purpose of this course is to present a selection of experiments that will demonstrate the principles of Soil Mechanics. A Laboratory Manual for this course will be used for performing these experiments. **Prerequisites: EGC 207. Co-requisite: CE 308**. (Offered Spring)

CE 310 Transportation Systems and Materials - 3 hrs. (2 hours lecture and 2 hours lab.) Transportation systems including land and air transportation for passenger movement; functions of transportation systems; vehicles and controls; transportation system planning, operation, maintenance, safety and transportation material testing are addressed in this course. **Prerequisites: EGC 101, CE 201 and EGC 205.** (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 204, EGC 207 and EGC 305** (Offered Spring)

CE 405 Concrete and Aggregates - 3 hrs. (2 hours lecture and 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. Focus 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. **Prerequisite: 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. **Prerequisite: 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 upon sufficient demand – Consult Advisor)

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 upon sufficient demand – Consult Advisor)

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 upon sufficient demand – Consult Advisor)

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 upon sufficient demand – Consult Advisor)

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. **Prerequisites: EGC 101 and senior standing** (Offered upon sufficient demand – Consult Advisor)

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 - A course covering 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 and 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 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. **Prerequisites: EGC 205 and MTH 126. Co-requisite: (for CE Majors) EGC 104** (Offered Spring and Summer)

EGC 207L Strength of materials Lab. 1 hr. The purpose of this course is to present a selection of experiments that will demonstrate the principles of Mechanics of Materials. A Laboratory Manual for this course will be used for performing these experiments. **Co-requisite: EGC 207**. (Offered Spring and Summer)

EGC 305 Fluid Mechanics - 3 hrs. A study of the properties of fluids and fundamental principles governing fluid motion, including fluid statics; conservation of mass momentum and energy with application to pipe and channel flow of incompressible fluids. **Prerequisites: EGC 206, MTH 227 and MTH 238. Co-requisite: EGC 305L.** (Offered Fall).

EGC 305L Fluid Mechanics Lab - 1 hr. The purpose of this course is to present a selection of experiments that will demonstrate the principles of Fluid Mechanics. A Laboratory Manual for this course will be used for performing these experiments. **Co-requisite: EGC 305**. (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 is offered in three options, the General EE Option, Computer Engineering Option, and Microelectronics (VLSI) Option. 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 Commission (EAC) of the Accreditation 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. 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 contacts 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 129 semester hours of course work, for all the three options with an overall cumulative grade point average of 2.00 or better. A minimum grade point average of 2.00 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)
General EE Option
129 Semester Hours

Freshman Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
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 Survival Skills	1	EE 109 Engineering Programming	3
EE 101 Intro of Electrical Engineering	3	HIS 101 World History I	3
Health Science Elective[1] or PE/MSC	2	**Total**	**17**
Total	17		

Sophomore Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
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	1	EE 203L Analog Circuits Laboratory	1
Total	**15**	EE 204 Digital Circuit Design/Analysis	3
		Total	**16**

Junior Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
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 320L Digital Systems Lab	1	EE 330 Microprocessors	3
EE 333 Analog Circuits Des/Anal II	3	Math Elective[3]	3
Humanities/Fine Arts Elective[2]	3	EE 340L Ener. Conv. or EE 360L Comm. Lab	1
Total	**16**	**Total**	**16**

Senior Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
EE 4xx Elective	3	ME 481 Quality/Reliability Assurance	3
EE 4xx Elective	3	EE 404 Communications Theory	3
EE 403 Feedback Sys Analysis/Design	3	EE 405L Simulation Techniques Lab	1
Engineering Science Elective[4]	3	EE 410 Microwave Engineering	3
Humanities/Fine Arts Elective[2]	3	EE 4xx Elective	3
EE 470 Engineering Design I	2	EE471 Engineering Design II	2
Total	**17**	**Total**	**15**

[1]Health Science Elective to be chosen from HED101, NHM103, or FAS102
[2]Humanities/Fine Arts electives to be chosen from ENG 204, ENG 205, Art, Music courses
[3]Math Elective to be selected from MTH 237, PHY 303, MTH 303, MTH 452 , MTH 453
[4]Engineering Science Elective 200 level or above course from non-EE Engineering Disciplines

ELECTRICAL ENGINEERING (BSEE)

Computer Engineering Option
129 Semester Hours

Freshman Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
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 Survival Skills	1	EE 109 Engineering Programming	3
EE 101 Intro of Electrical Engineering	3	HIS 101 World History I	3
Health Science Elective[1] or PE/MSC	2	**Total**	**17**
Total	**17**		

Sophomore Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
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	1	EE 203L Analog Circuits Laboratory	1
Total	**15**	EE 204 Digital Circuit Design/Analysis	3
		Total	**16**

Junior Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
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 Numerical Methods	3
EE 320L Digital Systems Lab	1	EE 330 Microprocessors	3
EE 333 Analog Circuit Design/Anal II	3	EE 340L Ener.Conv or EE 360L Comm Lab	1
CMP 215 Data Structures	3	Math Elective[2]	3
Total	**16**	**Total**	**16**

Senior Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
EE 4xx Elective	3	ME 481 Quality/Reliability Assurance	3
Humanities/Fine Arts Elective[3]	3	EE 404 Communications Theory	3
Engineering Science Elective[4]	3	EE 405L Simulation Techniques	1
EE 403 Feedback Sys Analysis/Design	3	CMP 4xx Elective	3
CMP 384 Operating Systems	3	Humanities/Fine Arts Elective[3]	3
EE 470 Engineering Design I	2	EE 471 Engineering Design II	2
Total	**17**	**Total**	**15**

[1]Health Science Elective to be chosen from HED101, NHM103, or FAS102
[2]Math Elective to be selected from MTH 237, PHY 303, MTH 303, MTH 452 , MTH 453
[3] Humanities/Fine Arts electives to be chosen from ENG 204, ENG 205, Art, Music courses
[4]Engineering Science Elective 200 level or above course from non-EE Engineering Disciplines

ELECTRICAL ENGINEERING (BSEE)

Microelectronics (VLSI) Option
129 Semester Hours

Freshman Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs..*
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 Survival Skills	1	EE 109 Engineering Programming	3
EE 101 Intro. to Elec. Engineering	3	HIS 101 World History I	3
Health Science Elective[1] or PE/MSC	2	**Total**	**17**
Total	**17**		

Sophomore Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
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	1	EE 203L Analog Circuits Laboratory	1
Total	**15**	EE 204 Digital Circuit Design/Analysis	3
		Total	**16**

Junior Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
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 320L Digital Systems Lab	1	EE 330 Microprocessors	3
EE 333 Analog Circuit Design/Anal II	3	EE 350 VLSI Design & Testing	3
Humanities/Fine Arts Elective[2]	3	EE 340L Ener. Conv. /EE 360L Comm. Lab	1
Total	**16**	**Total**	**16**

Senior Year

First Semester	*Sem.Hrs.*	*Second Semester*	*Sem.Hrs.*
EE 4xx Elective	3	ME 481 Quality/Reliability Assurance	3 Math
Elective[3]	3	EE 404 Communications Theory	3
EE 403 Feedback Sys Analysis/Design	3	EE 431 Semiconductor Engineering II	3
EE 451 Integrated Circuit Fabrication	3	Engineering Science Elective[4]	3
EE 451L IC Fabrication Lab	1	Humanities/Fine Arts Elective[2]	3
EE 470 Engineering Design I	2	EE 471 Engineering Design II	2
Total	**15**	**Total**	**17**

[1]Health Science Elective to be chosen from HED101, NHM103, or FAS102
[2]Humanities/Fine Arts electives to be chosen from ENG 204, ENG 205, Art, Music courses
[3]Math Elective to be selected from MTH 237, PHY 303, MTH 303, MTH 452 , MTH 453
[4]Engineering Science Elective 200 level or above course from non-EE Engineering Disciplines

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. **Corequisite: MTH 125**

EE 109 *Engineering Programming* - 3 hrs. This course introduces students to the concepts of utilizing computer systems for solution of engineering problems using the C/C++ programming language. Formulation and development of problem solving strategies are explored. Basic data representation and program flow control structures are discussed, as well as techniques for input/output of data. Intermediate level data and program structures are introduced. **Prerequisites: EE101**

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 126 Corequisite: EE 201L**

EE 201L *Linear Circuit Analysis I Lab* - 1 hr. This course is the companion lab to EE 201. **Corequisite: EE 201**

EE 202 *Linear Circuit Analysis II* - 3 hrs. This is a continuation course to EE 201. It addresses analysis of ac circuits, power calculations, Laplace transforms and application to transient analysis of electric circuits. Response to non-periodic excitations using Fourier series is included. Concepts of frequency response, basic filter circuits are also considered. **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**

EE 203L *Analog Circuits Lab* - 1 hr. This course is the companion lab to EE-203 and includes both analysis, simulation and fabrication of analog electronic circuits including diode circuits, bipolar junction transistor amplifiers, operational amplifiers and circuits using operational amplifiers such as oscillators and filters. **Corequisite: EE 203**

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. **Prerequisite: EE 101**

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**

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**

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**

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 software development techniques, solution of both liner and nonlinear equations, numerical integration and differentiation, interpolation and curve fitting, solution of differential equations, and optimization techniques. Emphasis is placed on developing programs in C++ language for execution in a UNIX environment. **Prerequisites: EE 109 and MTH 238**

EE 305 *Semiconductor Engineering I* – 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**

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**

EE 311L *Electrical Engineering Lab* - 1 hr. This course is a companion lab to EE 311. **Corequisite: EE 311**

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** , **Corequisite: EE 320L**

EE 320L *Digital Systems Laboratory* - 1 hr. This laboratory course provides a hand-on approach to digital fundamentals through the use of Complex Programmable Logic Devices (CPLDs and FPGAs). A number of laboratory projects will be completed. Early experiments concentrate on basic logic devices, and then more complex combinatorial circuits follow, including adders, multiplexers, encoders, and decoders. Low level memory devices including latches and flip-flops, counters and registers are developed. The use of advanced logic device technology prepares students for work using an industry-standard design environment. **Corequisite: EE 320**

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**

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.**

EE 333L *Analog Circuit Design and Analysis II Lab* – 1 hr. This course is the companion lab to EE 333.

EE 340L *Energy Conversion Laboratory* - Lab. 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**

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.**

EE 360L *Communications Laboratory* - Lab. 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**

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**

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**

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

EE 405L *Simulation Techniques* - 1 hr. This course is designed to provide hands on experience in he use of computer software and simulation tools. Simulation using SPICE is emphasized. Software such as National Instruments Multisim, LabView and Matlab will be used to analyze and design electronic circuits. The course will include the analysis and design of mixed-signal electronics including analog to digital conversion and digital to analog conversion. **Prerequisite: EE 333**

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**

EE 410L *Microwave Engineering Laboratory* - 1 hr. This lab complements the course materials taught in EE 410, Microwave Engineering. **Corequisite: EE 410**

EE 411 *Radar Engineering I* – 3 hrs. Fundamentals of pulsed and continuous wave radar systems and the concepts of range and doppler frequency measurement are presented. Radar receiver sensitivity, effects of noise, and component losses are analyzed. Techniques of signal detection in noise, parameter estimation, and radar waveform analysis are introduced. The effects of radar cross-section, clutter, multipath, and electronic countermeasures on the received signal are analyzed. **Prerequisite: Senior Standing and Approval of Instructor**

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: Senior Standing and Approval of Instructor**

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: Senior Standing and Approval of Instructor**

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**

EE 425 *High Performance Computing and Networks* - 3 hrs. This course introduces students to the cutting edge of high performance computing, examining both parallel and distributed architectures and the networks that interconnect them. The course covers a number of topics, ranging from computing and network architecture, design of software applications, to hands-on supercomputing. **Prerequisite: EE 304 and Senior Standing**

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**

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**

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**

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, Corequisite: EE 451L**

EE 451L *Integrated Circuit Fabrication Laboratory* - 1 hr. This laboratory course provides a hand-on clean room experience fabricating an integrated circuit (IC) chip. Silicon-based semiconductor technology and standard IC microfabrication processes for the fabrication of the microchip will be implemented through the course. Specific clean room fabrication processes and techniques used in the class include basic clean room skills, mask layout and fabrication, UV lithography, wet and dry oxidation, wet and dry etching, thermal diffusion, metallization, packaging, and device characterization. The students will fabricate a device wafer and characterize the electrical properties of the fabricated devices and circuits on the wafer. **Corequisite: EE 451**

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**

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

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**

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. **Prerequisite: Senior Standing and Approval of Instructor**

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**

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. Prerequisite: Senior Standing or Approval of Instructor**

DEPARTMENT OF MECHANICAL ENGINEERING

314 Engineering and Technology Building
(256) 372-5889

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 of Science Degree in Mechanical Engineering. The common program includes courses in fluid and solid mechanics, heat transfer, thermodynamics, instrumentation, automatic controls 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 carry out 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, CAE, 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. The Bachelor of Science Degree in Mechanical Engineering is accredited by the Engineering Accreditation Commission(EAC) of the Accreditation Board for Engineering and Technology (ABET).

MISSION

The mission of the Department of Mechanical Engineering 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 engineering technologies in areas of mechanical engineering, 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 encourages 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 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 B.S.M.E. 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 Center (B.S.M.E.)

General Program

129 Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs*
ORI	101	Survival Skills	1	[1]ENG	102	Composition II	3
[1]ENG	101	Composition I	3	[2]MTH	126	Calculus II	4
MTH	125	Calculus I	4	PHY	105	Physics I	4
CHE	101	General Chemistry I	3	ME	104	Engineering A. & Comp	3
CHE	101L	General Chemistry I Lab	1	ME	101	Introduction to ME	1
		[3]Health Science or PE/MSC	2	ME	101L	Introduction to ME Lab	1
ME	103	Computer Aided Design I	3				16
			17				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
MTH	227	Calculus III	4	MTH	238	Differential Equations	3
PHY	106	Physics II	4	HIS	102	World History II	3
HIS	101	World History I	3			[4]Social Science	3
EE	201	Linear Circuit Analysis I	3	ME	210	Material Science	3
EE	201L	Linear Circuit Analysis I Lab	1	ME	206	Dynamics	3
ME	205	Statics	3				15
			18				

Junior Year

First Semester				*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ECO	200	Basic Economics		3	ME	320	Kinematics/Dynamics of Mach.	3
ME	231	Strength of Materials		3	ME	313L	Experimental Mechanics Lab	1
ME	300	Math. Methods in M.E.		3	ME	301/301L	Anal. & Inst./Phys. Sys./Lab	3
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		1	ME	312L	Heat and Mass Transfer Lab	1
					ME	425	Design of Machine Element	3
				16				17

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
ME	432/432L	Design for Manuf. Rel.	4			Art/Music Elective	3
ME	451/451L	Auto Control Systems	3	ME	475	ME Design Project Continuation	3
ME	470	ME Engr. Design Project	2	ME	4XX	[5]Elective	3
ME	4XX	[5]Elective	3	ME	4XX	[5]Elective	3
			15				15

[1]ENG 103, and ENG 104 may be taken by international students

[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

[3]FAS 101, HED 101, or NHM 103

[4]PSY 201, SOC 201, or GEO 213

[5]Technical elective may be chosen from senior-level ME courses with approval of advisor

Mechanical Engineering Center (B.S.M.E.)

Manufacturing Systems Concentration

129 Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs*
ORI 101	Survival Skills		1	[1]ENG 102	Composition II		3
[1]ENG 101	Composition I		3	[2]MTH 126	Calculus II		4
[2]MTH 125	Calculus I		4	PHY 105	Physics I		4
CHE 101	General Chemistry I		3	ME 104	Engineering A. & Comp		3
CHE 101L	General Chemistry I L.		1	ME 101	Introduction to ME		1
	[3]Health Science or PE/MSC		2	ME 101L	Introduction to ME Lab		1
ME 103	Computer Aided Design I		3				16
			17				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
MTH 227	Calculus III		4	MTH 238	Differential Equations		3
PHY 106	Physics II		4	HIS 102	World History II		3
HIS 101	World History I		3		[4]Social Science		3
EE 201	Linear Circuit Analysis I		3	ME 210	Material Science		3
EE 201L	Linear Circuit Analysis I Lab		1	ME 206	Dynamics		3
ME 205	Statics		3				15
			18				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ECO 200	Basic Economics		3	ME 320	Kinematics/Dynamics of Mach..		3
ME 231	Strength of Materials		3	ME 313L	Experimental Mechanics Lab		1
ME 300	Math. Methods in M.E.		3	ME 301/301L	Anal. Inst./Phys. Sys./L		3
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		1	ME 312L	Heat and Mass Trans/L.		1
			16	ME 425	Design of Machine Element		3
							17

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG 203	World Literature I		3	ENG 204	World Literature II		3
ME 432/432L	Design for Man. Rel./L		4		Art/Music Elective		3
ME 451/451L	Auto Control Systems		3	ME 475	ME Design Project Continuation		3
ME 470	Mech. Engr Design Prj.		2	ME 472	Economic Eval. of Design Project		3
ME 481	Qual. Reliability Assurance		3	ME 482	Operations Planning & Scheduling		3
			15				15

[1]ENG 103, and ENG 104 may be taken by international students

[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

[3]FAS 101, HED 101, or NHM 103

[4]PSY 201, SOC 201 or GEO 213

Mechanical Engineering Center (B.S.M.E.)

Propulsion Systems Concentration

129 Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs*
ORI	101	Survival Skills	1	[1]ENG	102	Composition II	3
[1]ENG	101	Composition I	3	[2]MTH	126	Calculus II	4
[2]MTH	125	Calculus I	4	PHY	105	Physics I	4
CHE	101	General Chemistry I	3	ME	104	Engineering A. & Comp	3
CHE	101L	General Chemistry I L.	1	ME	101	Intro. to Mech. Engineer	1
		[3]Health Science or PE/MSC	2	ME	101L	Intro. to Mech. Engin. Lab.	1
ME	103	Computer Aided Design I	3				16
			17				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
MTH	227	Calculus III	4	MTH	238	Differential Equations	3
PHY	106	Physics II	4	HIS	102	World History II	3
HIS	101	World History I	3			[4]Social Science	3
EE	201	Linear Circuit Analysis I	3	ME	210	Material Science	3
EE	201L	Linear Circuit Analysis I Lab	1	ME	206	Dynamics	3
ME	205	Statics	3				15
			18				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ECO	200	Basic Economics	3	ME	320	Kinematics/Dynamics of M.	3
ME	231	Strength of Materials	3	ME	313L	Experimental Mechanics Lab	1
ME	300	Math. Methods in M.E.	3	ME	301/301L	Anal. Inst./Phys. Sys./L	3
ME	310	Thermodynamics	3	ME	311	Power Systems Integration	3
ME	360	Fluid Mechanics I	3	ME	312	Heat and Mass Transfer	3
ME	360L	Fluid Mechanics I Lab	1	ME	312L	Heat and Mass Transfer Lab	1
			16	ME	425	Design of Machine Element	3
							17

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG	203	World Literature I	3	ENG	204	World Literature II	3
ME	411	Power Plant Performance	3			Art/Music Elective	3
ME	412/412L	Anal./Syn. Gas Turb./Com	4	ME	413	Rocket Propulsion	3
ME	451/451L	Auto Control Systems	3	ME	416	Gas Dynamics	3
ME	470	ME Engineering Design Project	2	ME	475	ME Engineering Design Project	3
			15				15

[1]ENG 103, and ENG 104 may be taken by international students

[2]The listed mathematics courses are the minimum requirement. Upper level mathematics courses other than the above may be substituted.

[3]FAS 101, HED 101, or NHM 103

[4]PSY 201, SOC 201 or GEO 213

COURSE DESCRIPTIONS

ME 101 *Introduction to Mechanical Engineering* - 1 hrs. (Lect.. 1 hr.) Brief review of 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** (Offered - consult advisor) Co-requisite ME 101L.

ME 101L *Introduction. to Mechanical Engineering Lab* - 1cr.hr. (Lab.3 hrs). Laboratory required to develop the project/s associated with **ME 101.** Co-requisite ME 101

ME 103 *Computer Aided Design I* - (3 credit hrs, Lect. 2 hrs; Lab 1 cr. Hrs.) Introduction to computer graphics user interface (GUI) for Computer Aided Design (CAD), Graphics visualization and interpretation; creating engineering drawings in two and three dimensions, solid modeling utilities, assembly for manufacturing fundamentals, manufacturing process definition and implementation. Topics include basics on solid modeling, sweeps and blends, Interaction with automated manufacturing devices and basics of Computer Aided Manufacturing (CAD). Prerequisites: none, **Co**-requisite:. None

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. Topics include 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 and an 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, along with an 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 and heat treatments, material selection for manufacturing and corrosion problems are also included. **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** (consult advisor)

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** (consult advisor)

ME 301 *Analysis and Instrumentation of Physical Systems* - 2 hrs. (Lec. 2 hrs) 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.) Laboratory supporting 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** (consult advisor)

ME 311 *Power Systems Integration* - 3 hrs. Analysis of 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** (consult advisor)

ME 312 *Heat and Mass Transfer* - 4 hrs. (Lec. 2 hrs.) Fundamentals of heat transfer by conduction, convection, and radiation, and mass transfer by convection. Relevance to engineering applications is also addressed. **Prerequisites: ME 310 and ME 360** (consult advisor)

ME 312L *Heat and Mass Transfer Lab* - 1 hrs. (Lab. 3 hr.) Laboratory to support the practices and projects of ME 312. **Co-requisite: ME 312**

ME 313L **Experimental Mechanics Lab – 1 hr.** Introduction to experimental stress analysis; measurement of tensile, compressive, bending and shear stresses; impact and hardness tests; vibration measurements, modal analysis; structural dynamics; Strain Gages. **Prerequisite: ME 210, Co-requisite: ME 231**

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.** (consult advisor)

ME 360 *Fluid Mechanics I* - 3 hrs. (Lec. 3 hrs.) Fundamentals of fluid mechanics, covered are 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, and relevance to engineering applications. **Prerequisite: MTH 227** (consult advisor) Co-requisite ME 360L

ME 360L *Fluid Mechanics I Lab* - 1 hrs. (Lab. 3 hrs.) 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** (consult advisor)

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 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** (consult advisor)

ME 412 *Analysis and Synthesis of Gas Turbines and Components* - 3 hrs. (Lec. 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** (consult advisor) Co-requisite: ME 412L

ME 412L *Analysis and Synthesis of Gas Turbines and Components Lab* - 1 hrs. (Lab. 3 hr.) Laboratory supporting 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** (Offered - consult advisor)

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** (Offered - consult advisor)

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** (Offered - consult advisor)

ME 425 **Design of Machine Elements – 3 hrs.** Application of engineering mechanics and strength of materials to the analysis. Synthesis, and design of machine elements (design of screws, fasteners, and connections; design of welded, brazed, and bonded joints; mechanical springs; bearings; gears; shafts; design of clutches, brakes, couplings, and flywheels); theories of failure, stress concentrations, fatigue life, and thermal stresses; consideration of economics and safety; projects in creative mechanical design; design case studies. **Prerequisite: ME 231**

ME 432 *Design for Manufacture and Reliability* - 3 hrs. (Lec. 3). A study of the 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** (Offered - consult advisor) Co-requisite ME 432L

ME 432L *Design for Manufacture and Reliability* - 1 hrs. (Lab 3 hrs.) Laboratory supporting design work for ME 432. **Co-requisite: ME 432**

ME 451 *Automatic Control Systems* - 2 hrs. (Lec 2 hrs.). Amplification of knowledge of linear system properties gained from previous courses 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 are 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** (Offered - consult advisor) Co-requisite ME 451L

ME 451L *Automatic Control Systems Lab* - 1 hrs. (Lab 3 hrs.) 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. **Prerequisites: Senior Standing and consent of instructor** (Offered - consult advisor)

ME 471 *Systems Engineering* - 3 hrs. (Lec 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** (Offered - consult advisor)

ME 472 *Economic Evaluation of Design* - 3 hrs. 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**(Offered - consult advisor)

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. 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** (Offered - consult advisor)

ME 475 *Mechanical Engineering Design Project Continuation* **- 3 hrs. (Lec. 1 hr., Lab 2 hrs.)** A continuation of ME 470**. Prerequisite: ME 470 (Offered - consult advisor)**

ME 481 *Quality and Reliability Assurance* - 3 hrs. (Lec 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** (Offered - consult advisor)

ME 482 *Operations Planning and Scheduling* - 3 hrs. (Lec. 3 hrs.) Analysis and design of production and control systems for both intermittent and continuous manufacturing, inventory effects on production, and production control techniques review of Just In Time manufacturing. Emphasis is given to extending concurrent engineering techniques and methods for manufacturing and product development. **Prerequisite: ME 370** (Offered - consult advisor)

ME 485 *Computer Aided Manufacturing* - 2 hrs. (Lec. 2hrs.). A study of the use of CAD/CAM/CIM technology and the minimization of the overall manufacturing operation, including product design, product modification, areas, and economy. **Prerequisite: ME 370** (Offered - consult advisor) **Co-requisite ME 485L**

ME 485L *Computer Aided Manufacturing Lab* - 1 hrs. (Lab. 3 hrs.) Laboratory supporting projects and practices of ME 485. **Co-requisite ME 485.**

ME 490 *Special Topics* – 1 to 3 hrs. A course covering, in additional depth, topics on Mechanical Engineering. It can be taken as individual work under the supervision of 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. Prerequisites: Senior standing and consent of instructor** (Offered - consult advisor)

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 construction management, 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 200, 231, 232, MTH 112, history or literature sequence, fine arts elective, social science elective, two Natural/Physical science electives with labs, physical education, health or military science.

CONSTRUCTION MANAGEMENT PROGRAM

INTRODUCTION

Alabama A&M University offers a Bachelor of Science (B.S) degree in Construction Management. AAMU is unique in having this program where classes are taught by professional engineers with doctorate degrees as well as industrial and research experience. The CM curriculum has been developed using the guidelines provided by the Associated Schools of Construction (ASC) and the Associated General Contractors (AGCY) and designed to meet accreditation board of the American Council for Construction Education (ACCE) which is the predominant accreditation agency for construction management programs. You will receive an outstanding technical education and opportunities to develop hands-on experience, teamwork, and leadership skills. The small classes, friendly atmosphere, and helpfulness of our faculty and staff ensure that students succeed. You will be prepared for a career in an industry where the demand for graduates outstrips the supply.

WHAT IS CONSTRUCTION MANAGEMENT?

Construction management is the study of the management and engineering aspects of residential and commercial construction buildings, bridges, highways, power plants, water and waste water treatment facilities, and other public works essential to the quality of life of an industrial society. Construction managers apply management and engineering techniques to the planning, design and construction of a project in order to control the time and cost to complete the project and the quality of the construction. The construction industry needs qualified people who possess skills and knowledge in the management, engineering, economic and environmental aspects of construction projects.

The Bachelor's Degree program in Construction Management offered by AAMU is designed to provide a foundation in construction management, construction engineering and legal issues relating to the construction management field. The mission of the program is to produce quality construction management graduates with technical and management skills that meet or exceed the expectations of industry, government, and graduate programs. The goals of the program are to prepare graduates for a lifelong professional career in the construction industry, meet the educational requirements for professional certification, and to provide graduates with solid academic preparation for graduate study.

MISSION

The mission of the Construction Management Program is to educate our students for professional construction leadership positions with a sense of ethical and environmental responsibility and also for advanced degree programs. Our focus is on the fundamental concepts and technical skills required to create a wide range of career paths in the construction profession. We balance practical knowledge with theory. Through excellence in teaching, research and community service, the program promotes opportunities for scholarly, personal, and professional growth. We value and will continue our long tradition of educating non-traditional students of diverse backgrounds for successful entry into the workforce. The program is committed to

maintaining scholarly activities to keep the program at the State of the Art of Application and seeks to provide service and outreach activities to the construction profession.

PROGRAM EDUCATIONAL OBJECTIVES

The objective of the Construction Management Program is to provide graduates with the knowledge and skills necessary to coordinate the multifaceted aspects of the construction industry. Course work presents basic scientific principles augmented by business and engineering practices and procedures. The program will produce graduates who:

1. Demonstrate a readiness and ability to perform in the construction industry.
2. Demonstrate an ability to apply problem solving skills and integrate technical knowledge.
3. Demonstrate a solid understanding of many diverse construction fields including; environmental sustainability, accounting, finance, business regulations, contract law, labor- law, and marketing practices.
4. Demonstrate an ability to participate successfully within an interdisciplinary team environment.
5. Demonstrate an understanding of professional behavior, standards, and leadership attributes.
6. Demonstrate an ability to communicate effectively, both orally and written, and professionally present ideas.
7. Demonstrate a propensity for life long learning and service to the industry and community at large.

GRADUATION/PROGRAM REQUIREMENTS

A student must successfully complete the required 127 semester hours of course work, as prescribed in the general program. In addition, a student must complete a minimum of 44 semester credit hours in general education: ENG 101, ENG 102, ENG 205, ECO 232, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs, physical education (2 credit hours) or health or military science.

SCHOLARSHIPS AND AWARDS

Financial assistance is available through the Office of Student Financial Aid. Several full-tuition Construction Management scholarships are available to incoming freshmen and transferred students on a competitive basis through the School of Engineering and Technology. Other scholarships are available through endowments and industrial donations to students majoring in Construction Management.

COOPERATIVE EDUCATION/INTERNSHIPS

All Construction Management majors are encouraged to obtain professional work experience prior to graduation through Cooperative Education programs administered by the Career Development Services (CDS). In addition, All Construction Management undergraduate students are required to complete 12-weeks of internship in the construction industry, and will register and receive three (3) credit hours for satisfactory completion. The Construction Management Program will assist in placing students on internship via the Career Fair or during a week of on-campus interviews each semester, or the student may contact the CDS with a requested placement site. Compensation and possible travel expenses will be negotiated between the student and sponsor. CDS will match students and companies based upon the student's interests and amount of experience and the requests of the company. During the scheduled interview week, industry representatives will interview students and, subsequently, make job offers.

CONSTRUCTION MANAGEMENT STUDENT PROFESSIONAL ORGANIZATION

The Construction Management Professional Organization is a student activities dedicated to learn more about the construction industry through scheduled meetings, guest speakers, field experiences, and networking with local construction related companies. All construction management majors are strongly encouraged to join the following Student Chapters

Associated General Contractors
Associated Builders and Contractors
National Association of Home Builders
Design Build Institute of America
Emerging Green Builders
Sigma Lambda Chi
American Society of Civil Engineers

PROGRAM CURRICULA
CONSTRUCTION MANAGEMENT (B.S.C.M.)

127 Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II	3
ENG	101	Composition I	3	MTH	113	Pre-Calculus Trigonometry	3
MTH	112	Pre-Calculus Algebra	3	ECO		Economics[1]	3
CMG	101	Intro. to Construction Management	2			Fine Arts[2]	3
CMG	105	Intro. to Construction Materials	2	HIS	101	World History I	3
		Health, PE or Military Science	2	CMG	110	Blue Print Reading/Const Plans	3
CHE	101	General Chemistry	3				
CHE	101L	General Chemistry Lab	1				
			17				18

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ENG		Literature[3]	3			Humanities or Fine Arts[4,2]	3
HIS	102	History II	3			Social Science Elective[5]	3
		Natural/Physical Science Elective[6]	4	ENG	205	General Science	3
MGT	207	Legal Environments & Ethics	3	CE	201	Construction Surveying	3
TGC	217	Statics & Structural Analysis	3	TGC	218	Strength of Materials	3
				CMG	250	Construction Estimating	3
			16				18

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
CMG	300	Construction Methods	3	CMG	315	Heavy Construction	3
CMG	301	Construction Materials & Testing	3	CMG	318	Mechanical & Elect Systems	3
CMG	306	Construction Planning & Sched	3	CMG	320	Leadership in Construction	3
CMG	308	Soil Mechanics & Foundations	3	CMG	325	Comp. Application for Const.	3
CMG	310	Construction Contracts & Law	3	CMG	350	Construction Safety	3
		Business Elective[7]	3	MGT	315	Principles of Management	3
			18				18

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
CMG	400	Construction Accounting	3	MGT	352	Entrepreneurship	3
CMG	410	Concrete/Steel/Wood Des & Con	3	CMG	450	Const. Codes & Quality Control	3
CMG	420	Internship	3	CMG	460	Capstone Project	4
CMG	430	Advanced Const. Cost Estimation	3				
			15				10

[1]Approved Economics - ECO 200, ECO 231, or ECO 232
[2]Approved Fine Arts – ART 101 or MUS 101
[3]Approved Literature – ENG 201 or ENG 203
[4]Humanities – Approved course from literature, foreign languages, art, music, theater, and dance.
[5]Social Science–Approved course from economic, history, geography, psychology, political science and sociology
[6]BIO101/101L Biology, PHY 101/101L Physics, CHE 102/102L Chemistry
[7]Business Elective – MGT 433, MGT 450, FIN 315 or other course approved by advisor

COURSE DESCRIPTIONS

CMG 101 *Introduction to Construction Management* – 2 hrs: Study of construction industry practice emphasizing business organizations and management techniques and career opportunities. Topics include organizational environments, decision making, design, technology, leadership, and basic construction management including terminology, quantity take-offs, estimating, planning, scheduling and inspection. Occasional field trips required. **Prerequisites: None** (Offered Fall)

CMG 105 *Introduction to Construction Materials* – 2 hrs: Introduction to basic construction materials, to their properties in place in completed projects and to their characteristics that affect construction processes. Overview and study of the principal construction materials used within the construction industry: concrete, masonry, metals, woods, thermal materials, finishes, construction equipment, and specialties. Labs and field trips are required. **Prerequisites: None** (Offered Fall)

CMG 110 *Blue Print Reading & Construction Plans* – 3 hrs: The students will be exposed to the whole spectrum of construction blueprint reading—from what a blueprint is to how to make use of a set of plans. The students will learn the proper meaning of the construction symbols, abbreviations, and keynotes common to construction for all trades; the difference in the plan groups and how they are applied to a project; how to associate plans, sections, and details on blueprints to get a better understanding of the object(s) noted; and how to determine the coordination of the plans and how to reference the plans to each other. **Prerequisites: None** (Offered Spring)

CMG 250 *Construction Estimating* – 3 hrs: Detailed unit price cost estimating including quantity takeoff, labor, material, mechanical and electrical systems, equipment unit pricing and computer-aided estimation applications. The course will also examine bidding strategies, worker and equipment productivity, and value engineering. **Prerequisites: CMG 105 and CMG 110** (Offered Spring)

CMG 300 *Construction Methods* – 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. **Prerequisites: TGC 217, TGC 218, CE 201, CMG 105 and CMG 110** (Offered Fall)

CMG 301 *Construction Materials & Testing* – 3 hrs: Properties of concrete, masonry, metals, woods, thermal materials and hot mix asphalt. Construction materials testing and inspection procedures in laboratory and field situations using standard testing equipment, methods and field inspection techniques. Testing concrete, steel, wood, soils, aggregate, asphalt and masonry materials and samples relative to ASTM testing standards, laboratory reports, computer analysis, data collection and simulated field inspections. Two hours lecture and 2 hours lab. **Prerequisites: CMG 105, TGC 217 and TGC 218** (Offered Fall)

CMG 306 *Construction Planning & Scheduling* – 3 hrs: Study the fundamentals of planning and scheduling of construction projects. Introduction to all of the aspects and techniques of scheduling such as precedence diagrams, activity durations, contract provisions, resource allocation and leveling, money, project monitoring and control, computer scheduling, CPM and PERT methods, earned value, productivity, litigation, short-interval schedules, linear scheduling, arrow diagrams and, scheduling using Primavera and Microsoft projects. **Prerequisites: CMG 110, CMG 300** (Offered Fall)

CMG 308 *Soil Mechanics & 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. Two hours lecture and 2 hours lab. **Prerequisites: TGC 217 and TGC 218** (Offered Fall)

CMG 310 *Construction Contracts and Law* – 3 hrs: Examine the major legal issues concerning the construction industry. Topics include an overview of participants; bidding and contract formation; typical construction contracts and conditions; subcontracts; architects and engineers; privacy of contracts; defaults/termination; changed conditions; changes/extra work; lien law; surety bonds; fraud, duress, and mistakes; delays; and alternative dispute resolution. **Prerequisites: MGT 207** (Offered Fall)

CMG 315 *Heavy Constructions* – 3 hrs: Construction methods and management of heavy construction projects including highways, bridges, tall buildings, dams, tunnels, waste treatment facilities, governmental buildings and underground facilities. **Prerequisites: CMG 300, CMG 301, CMG 308,** (Offered Spring)

CMG 318 *Mechanical and Electrical Systems* – 3hrs: Basic study of the primary mechanical and electrical equipment and systems used in buildings. Design principles for selecting and sizing various systems are stressed throughout the course. Mechanical topics include plumbing, heating, ventilating, air conditioning, water supply, fire protection, and sanitary sewer systems. Electrical topics include basic principles of electricity, single and three phase systems, transformers, branch circuits and feeders and residential and commercial illumination. **Prerequisites: Junior Standing (**Offered Spring**)**

CMG 320 *Leadership in Construction* – 3 hrs: Models of construction leadership for the 21st Century, application of transformational leadership to strategic planning and marketing in construction contracting and, leadership and strategic problem solving in construction and methods. **Prerequisites: MGT 207, CMG 310 (**Offered Spring**)**

CMG 325 *Computer Applications for Construction* – 3 hrs: Computer-based construction project management techniques for planning, scheduling, estimating, cost optimization, cash flow analysis, bidding, accounting and project control. **Prerequisites: CMG 110, CMG 250, CMG 300, CMG 306, CMG 310** (Offered Spring)

CMG 350 *Construction Safety* – 3 hrs: Explanation of requirements of the Occupational Safety and Health Act and other related federal and state legislation as applied to the construction industry. Standards for accident prevention, hazard identification, and responsibility for compliance emphasized. **Prerequisites: Junior Standing** (Offered Spring)

CMG 400 *Construction Accounting* – 3 hrs: Introduction to the long-term contract methods for recognizing revenue and their impact on financial statements. An analysis of financial statements and their use in developing budgets, projecting cash needs, pricing construction projects, and forecasting the impact of business decisions on profit. **Prerequisites: Senior Standing** (Offered Fall)

CMG 410 *Concrete, Steel and Wood Design & Construction* – 3 hrs: Design and construction of concrete, steel and wood structures. Principles and fundamental design procedures for concrete, steel, wood beams, columns, slabs, and footings. Gain experience working with the building codes for designing, detailing and construction of structural members. **Prerequisites: TGC 217, TGC 218, CMG 301** (Offered Fall)

CMG 420 *Internship* – 3 hrs: Cooperative education/internship in construction management provides practical, on-the-job experience in blueprint reading, material takeoffs, estimating, scheduling, construction safety, equipment management, construction management, and project planning. **Prerequisites: Senior Standing** (Offered Fall)

CMG 430 *Advanced Construction Cost Estimating* – 3 hrs: Examines cost estimating as a key process in planning, designing and constructing buildings. Topics include the analysis of the elements of cost estimating; database development and management, productivity, unit costs, quantity surveys and pricing, and the application of these tools in business situations; marketing, sales, bidding, negotiating, value engineering, cost control, claims management and cost history. Computerization is evaluated as an enhancement to the process. **Prerequisites: CMG 110, CMG 250, CMG 300, CMG 306, CMG 325** (Offered Fall)

CMG 450 *Construction Codes & Quality Control* – 3 hrs: Issues of Quality Assurance and Quality Control (QA/QC) in the construction process. The constructors' roles in ensuring quality are analyzed. Interpretation of building code requirements, assessment of the utilization of QA/QC and its impact on project quality, cost, schedule, productivity, and safety are examined. **Prerequisites: TGC 217, TGC 218, CMG 300, CMG 301, CMG 400, CMG 410** (Offered Spring)

CMG 460 *Capstone Project* – 4 hrs: This capstone course is designed to provide instruction in the successful analysis of a construction-related project. Coordination with the CM course faculty is required to propose, design and implement a project that will analyze, integrate, and synthesize concepts and knowledge from previous CM and related course work. Independent research will be performed to develop projects in preparation for a formal final presentation for the CM course faculty, selected other college professors, and participating industry professionals. **Prerequisites: CMG 306, CMG 318, CMG 325, CMG 400, CMG 410, CMG 450,** (Offered Spring)

SUPPORTING CONSTRUCTION MANAGEMENT CORE COURSES

TGC 217 *Statics & Structural Analysis* – 3 hrs: Offered by the Department of Technology, School of Engineering and Technology.

TGC 218 *Strength of Materials* – 3 hrs: Offered by the Department of Technology, School of Engineering and Technology

MGT 207 *Legal Environment & Ethics* – 3 hrs: Offered by the Department of Management and Marketing, School of Business.

MGT 315 *Principles of Management* – 3 hrs: Offered by the Department of Management and Marketing, School of Business.

MGT 352 *Entrepreneurship* – 3 hrs: Offered by the Department of Management and Marketing, School of Business.

Business Elective

MGT 433 *Human Resource Management* – 3 hrs: Offered by the Department of Management and Marketing, School of Business.

MGT 450 *Principles of Real States* – 3 hrs: Offered by the Department of Management and Marketing, School of Business.

FIN 315 *Principles of Finance* – 3 hrs: Offered by the Department of Management of Economics and Finance, School of Business.

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.

PROGRAM CURRICULA
ELECTRICAL ENGINEERING TECHNOLOGY
128 Credit Hours
Accredited by the Technology Accreditation Commission of ABET
111 Market Place, Suite 1050, Baltimore, MD 21202-4012
Telephone: (410) 347-7700

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II	3
ENG	101	Composition I	3			[5]Fine Arts Elective	3
MDT	111L	Technical Drafting	3	MTH	113	Precalculus Trigonometry	3
MTH	112	Precalculus Algebra	3	TBC	102	Microcomputer Skills	3
EET	103	Intro. to Engineering Technology	3	EET	109	Digital Fundamentals	3
		Health, PE or Military Science	2	EET	110	DC Circuits	3
HIS	101	World History	3				18
			18				

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
MTH	125	Calculus I	4	MTH	126	Calculus II	4
EET	210	AC Circuits	3	EET	228	Electrical Power & Control	3
EET	211L	EET LAB 1	1	EET	231	Instrumentation	3
EET	212	Electronics	3	EET	290L	EET LAB II	1
EET	241	Microcontrollers 1	3			Technical Elective	3
CHE	101	General Chemistry I	3			Technical Elective	3
CHE	101L	General Chemistry I Lab	1				17
			18				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
EET	300	Engr. Ethics & Professionalism	3	ECO		[6]Economics	3
EET	310L	EET LAB III	1			[4]Natural/Physical Science w/lab	4
EET	312	Methods of Engineering Analysis	3	EET	390L	EET LAB IV	2
EET	370	PLCs I	3	MET	315	Mechatronics	3
EET	380	Computer Networks I	3			EET Elective	3
		EET Elective	3				15
			16				

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
EET	428	Capstone Design Phase I	1	EET	429	EET Capstone Design Phase II	1
ENG	205	General Speech	3			EET Elective	3
		EET Elective	3			EET Elective	3
HIS	102	World History	3			[3]Social Science	3
		[1]Literature	3			[2]Humanities or Fine Arts	3
			13				13

[1]All Engineering Technology students must take a six-semester credit hour sequence in literature or history.
[2]Humanities electives include literature, philosophy, speech, foreign languages, art, music, theater, dance, etc.

[3]Social Science electives include history, economics, geography, psychology, sociology, etc.
[4]Natural/Physical Science electives require course with lab BIO 101/101L, CHE 102/102L, PHY 103, or PHY 105.
[5]Fine Arts electives are ART 101 or MUS 101.
[6]ECO 200, ECO 231, or ECO 232

EET ELECTIVE and TECHNICAL ELECTIVE COURSES

The EET elective and technical elective courses allow the students, through guidance from their academic advisor to customize their education to meet their personal career goals. Students can choose to focus in Computers and Networking or Power & Control. A broad based general program can be obtained by selecting an appropriate combination of courses across the two areas. Technical electives can be used to obtain either additional breadth or depth of technical knowledge in support of a student's career goals. Technical electives can be selected from any of the tables below or other technical areas if the advisor approves them as being related to the student's career goals.

TECHNICAL ELECTIVES

Course No.	*Course Name*	*Sem. Hrs.*
TGC 201	Technical Communication	3
TGC 202	Applied C++ for Engineering Technology	3
TGC 217	Statics	3
MDT 204L	Electrical/Electronics Drafting	3
EET 390	Microelectronics & Nanotechnology	3
MET 413	Quality Control and Reliability	3
MET 415	Design of Manufacturing Facilities	3

COMPUTERS & NETWORKING ELECTIVES

Course No.	*Course Name*	*Sem. Hrs.*
EET 341	Microcontrollers 2	3
EET 315	Programmable Devices	3
EET 318	Advanced Digital Circuits	3
EET 411	Data Communication Systems	3
EET 421L	Computer Design & Construction	3
EET 477	Digital Signal Processing	3
EET 486	Advanced Microprocessors	3
EET 480	Computer Networks 2	3
EET 460	RFID Technology and Applications	3
EET 499	VLSI Circuit Design	3
EET 490	Special Topics in Electrical Engineering Technology	1 to 4

POWER & CONTROL ELECTIVES

Course No.	*Course Name*	*Sem. Hrs.*
EET 341	Microcontrollers 2	3
EET 319	AC/DC Motor Control	3
EET 351	Advanced Circuit Analysis	3
EET 456	Embedded Control	3
EET 457	High Precision Motor Control	3
EET 458	High Purity Instrumentation and Process Control	3
EET 423	Power Generation & Distribution	3
EET 477	Digital Signal Processing	3
EET 490	Special Topics in Electrical Engineering Technology	1 to 4

COURSE DESCRIPTIONS

EET 103 *Introduction to Engineering Technology* - 3 hrs. A course providing a broad view of the many specialties in engineering and technology and discussions the differences between engineering science and engineering technology. This course acquaints the beginning student with the fundamental mathematical and physical concepts, tools, equipment, and language of the electrical and mechanical fields. Scheduling, planning, and time management skills are developed.
Prerequisite: None (Offered Fall)

EET 109 *Digital Fundamentals* **-** 3 hr. A study of digital fundamentals, including Boolean Algebra, different base-numbering systems, logic gates and combinational and sequential logic. Introduced are simplification techniques such as Karnaugh mapping. The basic concepts of digital design are presented. The course includes laboratory. **Prerequisite: EET 103 Introduction to Engineering Technology** (Offered Spring)

EET 110 *DC Circuits* - 3 hrs. A study of further DC circuit concepts including Kirchoff's Laws, Thevenin's Theorem, Superposition Theorem, and the basic design of DC instruments, magnetic circuits, and transient analysis. **Prerequisite: EET 103 Introduction To Engineering Technology. (Offered Spring)**

EET 210 *AC Circuits* - 3 hrs. A study of basic principles of alternating circuits, vectors, phase relationship, inductance, capacitance, impedance and reactance. The application of network theorems to a-c analysis, and investigation of resonance phenomena are also discussed. **Prerequisite: EET 110 DC Circuits.** (Offered Fall)

EET 211L *EET Lab I* - 1hr. A course including laboratory projects in Digital Logic, DC Circuits, AC Circuits, Electronics and Microcontrollers. The Lab will meet each week starting the first week of the semester. A strict schedule will be followed so that all projects can be completed before the end of the semester. The lab will require the students to work in teams assigned by the instructor. Quality technical reports will be required for each project and several projects will require oral presentations. The student should be prepared to meet with team members outside class time to prepare the reports and presentations. A specific lab report format will be adhered to. **Prerequisites: EET 109, EET 110** (Offered Fall)

EET 212 *Electronics* - 3 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. **Prerequisite: EET 110.** (Offered Fall)

EET 228 *Electrical Power & Control* - 3 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 includes AC/DC motors and generators and other industrial control devices. **Prerequisites: EET 210, EET 212.** (Offered Spring)

EET 231 *Instrumentation* - 3 hrs. Real-world applications of computers and devices for electronic instrumentation and studies of 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: EET 211L** (Offered Spring)

EET 241 *Microcontrollers I* - 3 hrs. An introduction to the Microchip's PIC microprocessor. Students will learn to design embedded system using industry standard components and assemblies. Topics include PIC architecture, arithmetic logic, data handling, interrupt concepts, subroutines, and elementary Basic language programming. **Prerequisites: EET 109, EET 110** (Offered Fall)

EET 290L *EET Lab II* - 1 hr. Laboratory projects in Instrumentation, Power and Control, AC Circuits, Electronics, and Microcontrollers,. The Lab will meet each week starting the first week of the

semester. A strict schedule will be followed so that all projects can be completed before the end of the semester. The lab will require the student to work in teams assigned by the instructor. Quality technical reports will be required for each project and several projects will require oral presentations. The student should be prepared to meet with team members outside class time to prepare the reports and presentations. A specific lab report format will be adhered to. **Prerequisite: EET 211L** (Offered Spring)

EET 310L *EET Lab III* - 1 hr. Laboratory projects in PLCs, Instrumentation, Power and Control. The Lab will meet each week starting the first week of the semester. A strict schedule will be followed so that all projects can be completed before the end of the semester. The lab will require the student to work in teams assigned by the instructor. Quality technical reports will be required for each project and several projects will require oral presentations. The student should be prepared to meet with team members outside class time to prepare the reports and presentations. A specific lab report format will be adhered to. **Prerequisite: EET 290L** (Offered Fall)

EET 312 *Methods of Engineering Analysis* - 3 hrs. A study of probability, statistics, and differential equations and their applications to engineering problems. Emphasis is placed on the use of Microsoft Excel in the solution of these applications. **Prerequisites: TBC 102, MTH 126** (Offered Fall & Spring)

EET 315 *Programmable Devices* - 3 hrs. The design and implementation of digital systems utilizing modern programmable devices from companies such as Xilinx, Altera, and Intel. **Prerequisite: EET 205L Digital Electronics** (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. **Prerequisite: EET 205L Digital Electronics.** (Offered Fall)

EET 351 *Advanced Circuit Analysis* - 3 hrs. A comprehensive coverage of circuit analysis utilizing the Laplace transform. Also covered are active filter design, and computer solutions using PSPICE. **Prerequisite: EET 202L AC Circuits.** (Offered upon sufficient demand)

EET 370 *PLC I* - 3 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 231** (Offered Fall)

EET 380 *Computer Networks I* - 3 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 work groups, local area networks, wide area networks, and global networking and modern network technology and applications including Wi-Fi, Microsoft Networks and CISCO routers. The course covers the material necessary for taking the Network+ certification exam. **Prerequisite: EET 211L** (Offered Spring)

EET 390 *EET Lab IV* - 2 hrs. Laboratory projects in Computer Networks and PLCs. The Lab will meet each week starting the first week of the semester. A strict schedule will be followed so that all projects can be completed before the end of the semester. The lab will require the student to work in teams assigned by the instructor. Quality technical reports will be required for each project and several projects will require oral presentations. The student should be prepared to meet with team members outside class time to prepare the reports and presentations. A specific lab report format will be adhered to. **Prerequisite: EET 310** (Offered Spring)

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 Solid State Theory.** (Offered upon sufficient demand)

EET 421 *Computer Design & Construction* - 3 hr (2 hrs Lec, 3 hrs Lab) A course covering the current state of the art in computer design as applied to industrial applications and computer networking. **This course covers the material necessary for taking the A+ certification. Prerequisite: EET 280 Computer Networking** (Offered Spring)

EET 428 *EET Capstone Design Phase I* - 1 hr. Course demonstrating 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 focusing 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. A course providing 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 Microcontrollers** (Offered upon sufficient demand).

EET 486 *Advanced Microprocessors* - 3 hrs. A study of the 32-bit advanced processors from Motorola and Intel covering the architecture, memory design, addressing, and the instruction set with machine language and C++ programming. **Prerequisites: EET 240L Microcontrollers, EET 318 Advanced Digital Circuits.** (Offered upon sufficient demand)

EET 490 *Special Topics in Electrical Engineering Technology* - 1 to 4 hrs. Focuses on topics based on modern trends in electrical 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)

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 Advanced Digital Circuits.** (Offered upon sufficient demand)

MECHANICAL ENGINEERING TECHNOLOGY Program Area

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.

PROGRAM CURRICULA
MECHANICAL ENGINEERING TECHNOLOGY

Accredited by the Technology Accreditation Commission of ABET
111 Market Place, Suite 1050, Baltimore, MD 21202-4012
Telephone: (410) 347-7700
127 Credit Hours

Freshman Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
ORI	101	Survival Skills	1	ENG	102	Composition II	3
ENG	101	Composition I	3	MDT	112L	Machine & Tool Drafting	3
MDT	111L	Technical Drafting	3	MTH	113	Precalculus Trigonometry	3
MTH	112	Precalculus Algebra	3	TBC	102	Microcomputer Skills for Tech.	3
		[5]Fine Arts	3	HIS	101	World History	3
MET	103	Intro to Engineering Technology	3			Health, PE or Military Science	2
			16				17

Sophomore Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
		[1]Literature	3	MET	200	Electromechanical Principles	3
MDT	213	Computer Graphics	3			[4]Nat./Phys. Science w/lab	4
MTH	125	Calculus I	4			[2]Humanities or Fine Arts	3
CHE	101	General Chemistry	3	MTH	126	Calculus II	4
CHE	101L	General Chemistry Lab	1	TGC	218	Strength of Materials	3
TGC	217	Statics	3				17
			17				

Junior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
INT	311	Properties of Materials	3	INT	310	Manufacturing Cost Analysis	3
MDT	302L	Technical Design Principles	3			Technical Elective	3
		MDT Elective	3	MET	331L	MET Lab II	1
MET	330L	MET Lab I	1	MET	306	Thermodynamics & Heat Trans.	3
MET	304	Fluid Mechanics & Hydraulics	3	MDT	407	Mechanical Design I	3
MET	312	Methods of Engineering Analysis	3	MET	315	Mechatronics	3
			16				16

Senior Year

First Semester			*Sem. Hrs.*	*Second Semester*			*Sem. Hrs.*
		Technical Elective	3	ENG	205	General Speech	3
		[1,3]Social Science Elective	3			Technical Elective	3
EET	300	Engr. Ethics & Professionalism	3	MET	429	MET Capstone Phase II	1
MET	413	Quality Control & Reliability	3	MET	431L	MET Lab IV	1
MET	428	MET Capstone Phase I	1	HIS	102	World History	3
MET	430L	MET Lab III	1	ECO		[6]Economics	3
			14				14

[1]All Engineering Technology students must take a six-semester credit hour sequence in literature or history.
[2]Humanities electives include literature, philosophy, speech, foreign languages, art, music, theater, dance, etc.
[3]Social Science electives include history, economics, geography, psychology, sociology, etc.
[4]Natural/Physical Science electives require course with lab BIO 101/101L, CHE 102/102L, PHY 103, or PHY 105.
[5]Fine Art electives are ART 101 and MUS 101.
[6]ECO 200, ECO 231, or ECO 232

TECHNICAL ELECTIVE COURSES

The student will select four advisor-approved courses from the following list. Students may also select courses from other technical programs (e.g.; Mathematics, Industrial Technology, Computer Science, Urban Planning, Electrical Engineering Technology, Civil Engineering Technology) if their advisors 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

Mechanical Design

MDT	204L	Electronics Drafting	3
MDT	206	Architectural Drafting	3
MDT	210	Piping & Sheet Metal Draft	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

Manufacturing

MET	412	Control Systems	3
MET	414	Operations Planning & Scheduling	3
MET	415	Design of Manufacturing Facilities	3
MET	416	Operations Research	3
MET	421	Numerical Control of Machinery	3
MET	490	Special Topics in MET	3

COURSE DESCRIPTIONS

MDT 111L *Technical Drafting* – 3 hrs. 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)

MDT 112L *Machine and Tool Drafting* – 3 hrs 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 Technical Drafting** (Offered Spring)

MDT 204L *Electrical/Electronics Drafting* – 3 hrs. A study of specialized electronic drafting theory, practice of dimensions and tolerances. Detail and working drawings, pictorial drawing, and reproduction of drawings are covered. **Prerequisite: MDT 111L Technical Drafting** (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 Technical Drafting** (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. **Prerequisite: MDT 111L Technical Drafting** (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 Technical Drafting** (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 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 Strength of Materials.** (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. **Prerequisites: TGC 218 Strength of Materials and MDT 111L Technical Drafting** (Offered upon sufficient demand)

MDT 313 *Computer-Aided Drafting and Design I* – 3 hrs. A course offering hands-on training in two- and three-dimensional computer-aided design software. **Prerequisite: MDT 213 Computer Graphics.** (Offered Fall)

MDT 407 *Mechanical Design I* – 3 hrs. A continuation of MDT 302L. The emphasis is on a design project using the principles covered in MDT 302L. **Prerequisite: MDT 302L** (Offered Spring)

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. **Prerequisite: MDT 313 Computer-Aided Drafting and Design I** (Offered Spring)

MET 103 *Introduction to Engineering Technology* – 3 hrs. A course providing a broad view of the many specialties in engineering and technology and discussing the differences between engineering science and engineering technology. This course acquaints the beginning student with the fundamental mathematical & physical concepts, tools, equipment, and language of the electrical and mechanical fields. Scheduling, planning, and time management skills are developed. (Offered Fall)

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 Precalculus Trigonometry** (offered Spring)

MET 304 *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 Statics**. (Offered Fall)

MET 306 *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 Statics**. (Offered Spring)

MET 312 *Methods of Engineering Analysis* – 3 hrs. The application of algebra, trigonometry and calculus to engineering problems. Microsoft Excel™ is used for curve fitting, solving single and simultaneous algebraic. A special emphasis is placed on differential equations, probability, and statistics. **Prerequisite: TBC 102 Microcomputer Skills for Technology** (Offered Fall and Spring)

MET 315 *Mechatronics* – 3 hrs. Integration of electrical, mechanical, and computer technology in the design. manufacture, and maintenance of a wide range of engineering products and processes. It gives a framework of knowledge that allows engineers to develop an interdisciplinary understanding and integrated approach to engineering. **Pre-requisites or co-requisites: MET 200, MET 304, MET 306, MDT 302L** (Offered Spring)

MET 330L *Mechanical Engineering Technology Lab I* - 1 hr. 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 Statics, MET 304 Fluid Mechanics & Hydraulics** (Offered Fall)

MET 331L *Mechanical Engineering Technology Lab II* - 1 hr. Laboratory projects in thermodynamics, heat transfer, and electro-mechanics. 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 Electromechanical Principles, MET 306 Thermodynamics and Heat Transfer,** (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; design and analysis of hydraulic systems for some typical applications. **Prerequisites: MET 304 Fluid Mechanics and Hydraulics, MET 306 Thermodynamics and Heat Transfer.** (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 are covered. Use of the computer is required. **Prerequisite: MET 306 Thermodynamics and Heat Transfer.** (Offered upon sufficient demand)

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 306 Thermodynamics and Heat Transfer.** (Offered upon sufficient demand)

MET 409 *Mechanical Vibration* - 3 hrs. A study of the response of structures to vibrational motion, including 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. **Prerequisite: TGC 218 Strength of Materials.** (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 306 Thermodynamics and Heat Transfer.** (Offered upon sufficient demand)

MET 412 *Control Systems* – 3 hrs. A combined study of controlling methods and equipment for power transfer devices. **Prerequisites: MET 312, MET 126**

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. Prerequisite: Use of the computer is required. **Prerequisite: Senior Standing or permission of instructor.** (Offered Fall)**.**

MET 414 *Operations Planning and Scheduling* – 3 hrs. Production and control systems for both intermittent and continuous manufacturing are studied. Inventory control is treated as an integral part of the production control system using MRP and JIT techniques. Emphasis is placed on the role of concurrent engineering situations in these manufacturing situations. Use of the computer is required. **Prerequisite: Senior Standing or permission of instructor. (Offered upon sufficient demand)**

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 421 *Numerical Control of Machines* – 3 hrs. An introduction to numerical control as applied to drilling, milling, and turning operations. Mathematical methiods for computer numerical control are presented. Includes cutter center line programming, tool offsets, cutter diameter compensation TNR compensation, and tool length compensation. Experience is provided in operation of an automated manufacturing machine. **Prerequisite: Senior standing.**

MET 428 *MET Capstone Phase I* – 1 hr. Development of proficiency in analysis, layout, and completion of a mechanical project. This first course is provided to facilitate project selection, project planning/scheduling, literature survey, patent searching, and proposal writing. **Prerequisite: Senior Standing** (Offered Fall)

MET 429 *MET Capstone Phase II* - 3 hrs. A continuation of MET 428, focusing 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: MET 428** (Offered Spring)

MET 430L *Mechanical Engineering Technology Lab III* – 1 hr. 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: TGC 218 strength of Materials, INT 311 Properties of Materials** (Offered Fall)

MET 431L *Mechanical Engineering Technology Lab IV* - 1 hr. 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 Quality Control and Reliability, MDT 407 Mechanical Design I** (Offered Spring)

MET 490 *Special Topics in Mechanical Engineering Technology* - 1 to 4 hrs. 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 or Senior Standing** (Offered Fall, Spring, Summer)

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 Spring)

TBC 201 *Technical Communications* – 3 hrs. Aspects of communication that the technical person is likely to encounter in industry. The course 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 upon sufficient demand)

TGC 217 *Statics* – 3 hrs. A study of force systems in equilibrium and their action on bodies at rest. The course 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 Precalculus Trigonometry** (Offered Fall)

TGC 218 *Strength of Materials* – 3 hrs. A study of the concepts of stress, strain, and Hooke's Law. Also studied is the strength and deformation of axial force members, shafts, beams, and columns, and an introduction to combined stress. **Prerequisite: TGC 217 Statics** (Offered Spring)

INDUSTRIAL TECHNOLOGY (INT)

332-333 Engineering and Technology Building
(256) 372-5573

INTRODUCTION

The bachelor's degree program in Industrial Technology is designed to prepare technical and/or technical-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 bachelor's degree program in Industrial Technology provides students with knowledge and understanding of people, tools, materials, machines, processes; and their relationship to industrial production. Industrial Technology professionals work with managers, engineers, production employees, scientists, and supervisors to improve organizational effectiveness and efficiency.

MISSION/OBJECTIVES

The mission of the bachelor's degree program in Industrial Technology program is to prepare technical and technical-management oriented personnel to function as technologists in today's ever-changing, competitive workplace. This mission is accomplished through various programs of study that blend technical and technical-management oriented concepts with subjects in communications, humanities and fine arts; science and mathematics; and history, behavioral and social sciences to prepare students to be healthy contributing citizens in today's society. The objectives of the Industrial Technology program are to provide students with:

1. Depth and breath in mathematics, science, and other academic subjects, and their relationship to Industrial Technology;

2. Knowledge of information and communication technologies, including their efficient use in transmitting information and communicating ideas;

3. Knowledge of industrial, manufacturing, design, and safety technologies; and their use in producing consumer products and providing related services.

4. Knowledge to design and develop instructional materials and resources; and deliver and evaluate instruction in various employee training and development environments.

FINANCIAL ASSISTANCE/SCHOLARSHIPS

All prospective students applying for admission to the Industrial Technology program should contact the Financial Aid and/or Admission Office regarding information on available financial aid and scholarships.

COOPERATIVE EDUCATION/INTERNSHIPS

All students majoring in Industrial Technology are encouraged to complete an industrial internship or CO-OP work experience as part of their course of study. The exact type and length of the experience depends upon the individual student's background, goals, interests, and needs. 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 Coordinator or CO-OP Work Experience Director prior to enrolling in these courses.

STUDENT/PROFESSIONAL ORGANIZATIONS

The following collegiate organizations are available to students majoring in Industrial Technology: (1) National Association of Industrial Technology; (2) Technology Student Association; and (3) Graphic Arts Club

ADMISSION CRITERIA

All students admitted to the University are eligible to be admitted to the bachelor's degree program in Industrial Technology. Students seeking admission to the teaching field programs in Career Technologies or Technical Education must satisfy all admission requirements of the School of Education with respect to the Teacher Education Program.

GRADUATION REQUIREMENTS

All candidates for graduation must successfully complete all coursework in their program of study with an overall grade point average of 2.00; complete an exit interview in the senior project course; and make a passing score (70%) on a program approved exit examination in an area of Industrial Technology.

SPECIAL FEES/ASSESSMENTS

Specific fees are charged for selected laboratory based courses in Industrial Technology, and are included in the tuition and registration fees.

PROGRAMS OF STUDY IN INDUSTRIAL TECHNOLOGY

The Bachelor of Science in Industrial Technology degree includes the following major programs of study as described in the classification of instructional programs:

1 Industrial Technology Major: This program of study prepares individuals to apply basic engineering principles and technical skills in support of industrial engineers and managers. It includes instructions in optimization theory, human factors, organizational behavior, industrial processes, industrial planning procedures, computer applications, and report and presentation. It also includes instruction in industrial management, industrial distribution, manufacturing systems, safety technology, and elective coursework in a variety of other academic courses.

2. Graphics Communications and Imaging Technology Concentration: This program of study prepares individuals to apply technical knowledge and skills in the manufacture and distribution or transmission of graphic communications products. It includes instructions in the prepress, press, and post-press phases of production operations and processes such as offset lithography, flexography, gravure, letterpress, screen printing, foil stamping, digital imaging, and other production methods. In addition, it includes instructions in printing management, desktop publishing, and digital imaging design.

3. Industrial Safety Technology Concentration: This program of study prepares individuals to apply basic engineering principles and technical skills to assist engineers and other professionals in implementing and enforcing industrial safety standards. It includes instructions in industrial processes, industrial hygiene, toxicology, ergonomics, system and process safety, safety performance measurement, human factors, human behavior, and applicable laws and regulations.

5. Manufacturing Systems Technology Concentration/Mechanical Drafting and Design Option. This program prepares individuals to apply basic engineering principles and technical skills to identification and resolution of production problems in the manufacture of products. This program includes instructions in manufacturing machine operations, production line operations, cost analysis, systems analysis, instrumentation, physical controls, automation, computer-aided manufacturing, manufacturing planning, quality control, and information infrastructure. Instructions are also provided in technical drafting and design.

6. Mechanical Drafting and Design Technology Concentration/Manufacturing Materials and Processing Option. This program prepares individuals to apply basic engineering principles and technical skills to the development of working drawings and electronic simulations in support of mechanical and industrial engineers, and related professionals. It includes instructions in manufacturing materials and processes, mechanical drafting, basic metallurgy, geometric dimensioning and tolerancing, blueprint reading and technical communication. Instructions are also provided in manufacturing materials and processes.

7. Technology Management Concentration (Associate Degree required): This program of study is designed for individuals with a completed program of study at the associate degree level (Associate of Arts, Associate of Science or Associate of Applied Science) or its equivalency, and desire to earn the Bachelor of Science degree program in Industrial Technology/Technology Management Concentration to advance in their career field. It is also designed for personnel with work related learning and experience in post-secondary career/technical education program; training with industry program (i.e., Apprenticeship Programs); military occupational specialty (MOS) career programs; and career development programs in business and industry, and government sponsored colleges and schools.

8. Technical Education – a Postsecondary Emphasis: This program of study is designed to prepare individuals to teach technical (trades and industry) subjects in career/technical education and vocational education programs in various training settings, including high schools, community/technical colleges, business and industry, departments of corrections, and private schools. It includes instructions in designing and developing instructional programs; and delivering and evaluating instructions in a career/technical education or vocational industrial education setting.

In cooperation with the School of Education, the Department of Technology provides the required teaching field coursework for candidate teachers majoring in Career Technologies and Secondary Technical Education. Students must first be admitted to the University's Teacher Education Program in the School of Education before completing required upper division coursework in professional studies and the teaching field. An overall grade point average of 2.50 and a passing score on the Praxis Examination are required to be admitted to the 12-week period of Internship (CTE494 and TED495). The checklists and curriculum sequences for these two secondary teaching field programs are in this bulletin under the School of Education.

BACHELOR'S DEGREE COMPLETION REQUIREMENTS

Students majoring in the Bachelor of Science degree program in Industrial Technology must complete 122 – 123 semester hours of undergraduate coursework to include 47 semester hours in General Studies; 22 semester hours in Core Industrial Technology coursework; 36-semester hours in a concentration program of study; and 18-semester hours of elective coursework.

General Studies (47-Semester Hours)

Students completing a program of study in either the Industrial Technology Major, Graphics Communications and Imaging, Industrial Safety Technology, Manufacturing Systems Technology, or Mechanical Drafting and Design Technology must complete specific courses in each area as described below.

The required coursework for students completing a program of study in Technology Management (2+2), Technical Education – Postsecondary Emphasis, Career Technologies, or Secondary Technical Education must complete course titles that are included in the curriculum sequence for each concentration. However, the required semester hours in each area remain unchanged.

The required coursework in General Studies may be completed at any regionally accredited 2-year or 4-year college or university or at AAMU. However, only courses with a passing grade (C grade or higher) will be accepted for transfer credits at the University.

Area I: Written Communications (6-sh required)	
ENG 101, ENG 101H, or ENG 103 Written Composition I	3
ENG 102, ENG 102H, or ENG 104 Written Composition II	3
Total	**6**
Area II: Humanities and Fine Arts (12-semester hours required)	
Note: All Students must complete a 2-course sequence in either literature (ENG 201/ENG 202 or ENG 203/ENG 204) or history (HIS 101/102 or HIS 201/202)	3
Humanities Electives: ENG 205 General Speech	3
Fine Arts Elective: ART 101, ART 220, ART 221, or MUS 101 Music Appreciation	3
Literature Elective: ENG 201, 202 Survey of English Literature or ENG 203,204 World Literature	3
Total	**12**
Area III: Science and Mathematics (14-semester hours required)	
MTH 112 Pre-Calculus Algebra	3
MTH 113 Pre-Calculus Trigonometry	3
CHE 101/101L General Chemistry I/with required lab	4
(Note: Students in Graphic Communications may also elect CHE 111/CHE 11lL)	
CHE 102/102L General Chemistry II /with required lab	4
(Note: Students in Graphic Communications may also elect CHE 112/112L)	
(Note: Students in all other concentrations may elect PHY 103/PHY 103L	
Total	**14**
Area IV: History, Behavioral and Social Sciences (9-semester hours required)	
Note: Students must complete a 2-course sequence in either literature (ENG 201/ENG 202 or ENG 203/ENG 204) or history (HIS 101/102 or HIS 201/202)	
ECO Elective 200, 231, 232	3
Social Science Elective	3
History Elective: HIS 101/102 World History /II or HIS 201/202 American History I/II	3
Total	**9**
Area V: Other Courses (3-semester hours required)	
ORI 101 Survival Skills	1
Health (FAS 103, HED 101, NMH102), Military Science (MSC), Physical Science (PED) course	2
Total	**3**
Total for General Studies	**44**

Core Industrial Technology Coursework (22-semester Hours Required)

Students completing a program of study in either the Industrial Technology Major, Graphics Communications and Imaging, Industrial Safety Technology, Manufacturing Systems Technology, or Mechanical Drafting and Design Technology must complete specific courses in each area as described below.

INT 103 Introduction to Industrial Technology	2
INT 205 Power and Energy Systems	3
INT 206 Computer Applications in Technology Management	3
INT 326 Applied Statistics in Technology Management	3
INT 340 Principles of Occupational Safety and Health	3
INT 412 Technology, Society, and the Environment	2
MDT 111 Technical Drafting	3
Elective: INT 203, TBC 201, ENG 304, OSM 310, or PHL 201 Logic	3
Total	**22**

BACHELOR OF SCIENCE DEGREE
INDUSTRIAL TECHNOLOGY MAJOR
Industrial Management Option
123 Semester Hours Required

The Industrial Technology Major/Industrial Management Option requires 36 semester hours in the major; and 18 semester hours in the Industrial Management Option. Graduates of the Industrial Management option are involved in the application of management and technical skills in preparing and controlling long-term strategic planning of an organization.

Industrial Technology Major (36-semester hours)	
INT 107 Industrial Materials and Processes I	3
INT 108 Industrial Materials and Processes II	3
INT 207 CAD/CAM	3
INT 210 Manufacturing & Machine Tools Operation	3
INT 301 Product Design and Development	3
INT 310 Production Cost Analysis	3
INT 311 Properties of Materials	3
INT 327 Statistical Quality Control	3
INT 484 Computer-Integrated Manufacturing	3
INT 435 Organizational Leadership and Supervision	3
INT 490 Internship: Technical	3
INT 439 Senior Project	3
Total	**36**

Industrial Management Option (18-semester hours)	
INT 300 Methods, Standards, and Measurements	3
INT 428 Technology Project Management	3
INT 437 Facilities Planning	3
INT 438 Production and Inventory Control	3
Electives (Choose two courses from): INT 406 Industrial Psychology (3)	6
Total	**18**

Minor in Industrial Management for non-Industrial Technology Majors

INT 326 Applied Statistics in Technology Management	3
INT 327 Statistical Quality Control	3
INT 300 Methods, Standards, and Measurements	3
INT 437 Facilities Planning	3
INT 438 Production and Inventory Control	3
INT (Technical-Management) Elective	3
Total	**18**

BACHELOR OF SCIENCE IN INDUSTRIAL TECHNOLOGY
INDUSTRIAL TECHNOLOGY MAJOR
Industrial Management Option
123 Semester Hours

Curriculum Sequence

Freshman Year - Fall Semester	
INT 103 Introduction to Industrial Technology	2
MDT 111 Technical Drafting	3
ENG 101, ENG 101H, or ENG 103	3
ORI 101 Survival Skills	1
HIS 101 or HIS 201	3
MTH 112 Pre-Calculus Algebra	3
Total	**15**

Freshman Year - Spring Semester	
ENG 102, ENG 102H, or ENG 104	3
CHE 101 General Chemistry I	3
CHE 101L General Chemistry I Lab	1
FAS 101, HED 101, NHM 103, or PED	2
ART 110, ART 220, ART 221 or MUS 101	3
MTH 113 Pre-Calculus Trigonometry	3
Total	**15**

Sophomore Year - Fall Semester	
CHE 102 or PHY 103	3
CHE 102L or PHY 103L	1
ENG 201 or ENG 203	3
INT 107 Industrial Materials & Processes I	3
INT 205 Power & Energy Systems	3
INT 207 CAD/CAM	3
Total	**16**

Sophomore Year - Spring Semester	
INT 206 Comp. Applications in Technology Mgt.	3
ENG 202, ENG 204 or elective	3
INT 108 Industrial Materials & Processes II	3
ENG 205 General Speech	3
INT 210 Mfg. & Machine Tools Operation	3
Total	**15**

Junior Year – Fall Semester	
ECO 231 Principles of Macroeconomics	3
HIS 102, HIS 202 or other Area IV course	3
INT 301 Product Design & Development	3
INT 326 Applied Statistics in Technology Mgt	3
INT 340 Principles of OSH	3
Total	**15**

Junior Year – Spring Semester	
INT 327 Statistical Quality Control	3
INT 310 Production Cost Analysis	3
INT 311 Properties of Materials	3
INT 203/TBC201/PHL201/ENG304/OSM310	3
INT 412 Technology, Society, and the Env.	2
ECO 232 Principles of Microeconomics	3
Total	**17**

Senior Year – Fall	
INT 300 Methods, Standards & Measurement	3
INT 435 Organizational Leadership & Superv.	3
INT 437 Facilities Planning	3
INT 410 Principles of Industrial Management	3
Elective course	3
Total	**15**

Senior Year – Spring	
INT 428 Technology Project Management	3
INT 493 Senior Project	3
INT 438 Production and Inventory Control	3
INT 490 Internship: Technical	3
Elective course	3
Exit Examination	0
Exit Interview	0
Total	**15**

GRAPHIC COMMUNICATIONS AND IMAGING TECHNOLOGY CONCENTRATION
Printing Management Option
123-Semester Hours Required

Career Information: The graphic communications/printing industry is one of the 10 largest industries in the U.S. The concentration s designed to prepare graduates for positions in electronics imaging, publishing, printing, website developers, plant supervisors, entrepreneurs, and related professions. The Graphic Communications/Imaging Technology Program of Study requires 36 semester hours in the concentration and 18-semster hours of elective coursework.

Graphic Communications and Imaging Technology Concentration (36-semester hours)

CMP 102 Introduction to Programming	3
INT 202L Image Conversion	3
INT 212 Internet Foundations, Technology, and Development	3
INT 306 Multimedia and Communication Technologies	3
INT 313 Principles of Graphics Communication Technology	3
INT 314L Image Transfer	3
INT 315L Advance Image Transfer	3
INT 330L Graphics Design and Planning	3
INT 417L Electronics Publishing I	3
INT 418L Electronics Publishing II	3
INT 490 Internship: Technical	3
INT 493 Senior Project	3
INT 490 Internship: Technical	3
Total	**36**

Additional Requirements/Elective

INT 201 Printing History/Typography	3
INT 307 Printing Management and Estimating	3
INT 308Printing Inks and Substrates	3
INT 434 Quality Planning & Analysis	3
Total	**18**

Minor in Graphic Communication and Imaging Technology for non-Industrial Technology Majors

INT 201L Printing History/Typography	3
INT 202L Image Conversion	3
INT 308 Printing Inks and Substrates	3
INT 314L Image Transfer	3
INT 330L Graphics Design and Planning	3
INT 417L Electronics Publishing I	3
Total	**18**

INDUSTRIAL TECHNOLOGY
GRAPHIC COMMUNICATIONS AND IMAGING TECHNOLOGY CONCENTRATION
Printing Management Option
123 Semester Hours

Curriculum Sequence

Freshman – Fall Semester	
INT 103 Introduction to Industrial Technology	2
MDT 111L Technical Drafting	3
ENG 101, ENG 101H, or ENG 103	3
MTH 112 Pre-Calculus Algebra	3
CHE 101 or CHE 111	3
CHE 101L or CHE 111L	1
ORI 101 Survival Skills	1
Total	**16**

Freshman – Spring Semester	
ENG 102, ENG 102H, or ENG 104	3
MTH 113 Pre-Calculus Trigonometry	3
CMP 102 Introduction to Programming	3
CHE 102 or CHE 112	3
CHE 102L or CHE 112L	1
ART 101 or MUS 101	3
Total	**16**

Sophomore – Fall Semester	
INT 212 Internet Foundation Tech. & Dev.	3
FAS 103, HED 101, NHM 102, or PED course	2
INT 201L Printing History/Typography	3
HIS 101 or HIS 201	3
ENG 201 or ENG 203	3
INT 202L Image Conversion	3
Total	**17**

Sophomore – Spring Semester	
INT 206 Comp. Applications in Technology Mgt	3
INT 313 Principles of Graphic Comm. Tech.	3
INT 330L Graphic Design & Planning	3
HIS 102, HIS 202, or elective course	3
ENG 202, ENG 204, or elective course	3
Total	**15**

Junior Year – Fall Semester	
ENG 205 General Speech	3
ECO 231 Principles of Macroeconomics	3
INT 314L Image Transfer	3
INT 306 Multimedia & Comm. Technologies	3
INT 326 Applied Statistics in Technology Mgt	3
Total	**15**

Junior Year – Spring Semester	
ECO 232 Principles of Microeconomics	2
INT 315L Advanced Image Transfer	3
INT 307L Printing Management/Estimating	3
INT 327 Statistical Quality Control	3
INT 203, PHL 201, ENG304, or OSM 310	3
Total	**14**

Senior Year – Fall Semester	
INT 308 Printing Inks & Substrates	3
INT 340 Principles of OSH	3
INT 434 Quality Planning & Analysis	3
INT 417L Electronics Publishing I	3
Advisor Approved Elective	3
Total	**15**

Senior Year – Spring Semester	
INT 493 Senior Project	3
INT 418L Electronic Publishing II	3
INT 412 Technology, Society, and the Env.	3
INT 490 Internship I: Technical	3
Advisor Approved Elective	3
Exit Interview	3
Exit Examination	3
Total	**15**

INDUSTRIAL SAFETY TECHNOLOGY CONCENTRATION
Industrial Management Option
123-Semester Hours Required

Career Information: This concentration provides students with an understanding of people, tools, materials, machines, and processes; and their relationship with production. An Industrial Safety Technology and Management graduate is valuable liaison person linking technical and engineering function with the supervision/management function. The industrial safety personnel assist the engineer in maintaining the workplace free of recognized safety and health hazards. The Industrial Safety Technology program of study requires 36 semester hours in the concentration and 18 semester hours of elective coursework.

Industrial Safety Technology (36-semester hours)	
INT 107L Industrial Materials and Processes I	3
INT 108L Industrial Materials and Processes II	3
INT 210 Manufacturing & Machine Tools Operation	3
INT 301 Product Design/Development	3
INT 310 Production Cost Analysis	3
INT 341 Five Prevention/Protection for Industry	3
INT 342 Ind. Safety: Management and Technology	3
INT 420 Industrial Hygiene	3
INT 422 Industrial Hazardous Materials Management	3
INT 425 Industrial Safety Standards I	3
INT 426 Industrial Safety Standards II	3
INT 490 Internship: Technical	3
INT 493 Senior Project	3
Total	**36**

Additional Requirements/Electives (18-semester hours required)	
INT 300 Methods, Standards, and Measurements	3
INT 327 Statistical Quality Control	3
INT 437 Facilities Planning	3
INT 438 Production and Inventory Control	3
Electives (Choose two courses from):	6
INT 406 Industrial Psychology (3)	
INT 410 Principles of Industrial Management (3)	
INT 435 Organizational Leadership and Supervision (3)	
MGT 207 Legal Environment and Ethics (3)	
MGT 315 Principles of Marketing (3)	
MGT 322 Organizational Behavior and Theory (3)	
TED 302 Course Development and Evaluation in Career and Technical Education (3)	
TED 406 Methods of Teaching Career and Technical Education (3)	
Advisor approved technical or technical-management oriented courses (6)	
Total	**18**

Minor in Industrial Safety Technology for non-Industrial Technology Majors

INT 340 Principles of Occupational Safety and Health		3
INT 341 Fire Prevention and Protection for Industry		3
INT 342 Industrial Safety: Management & Technology		3
INT 420 Industrial Hygiene		3
INT 425 Industrial Safety Standards I		3
INT 426 Industrial Safety Standards II		3
	Total	**18**

INDUSTRIAL TECHNOLOGY
INDUSTRIAL SAFETY TECHNOLOGY CONCENTRATION
Industrial Management Option
123 Semester Hours

Curriculum Sequence

Freshman – Fall		**Freshman – Spring**	
INT 103 Introduction to Industrial Tech.	2	ENG 102, ENG 102H, or ENG 104	3
MDT 111 Technical Drafting	3	CHE101 General Chemistry	3
ENG 101, ENG 101H, or ENG 103	3	CHE101L General Chemistry I Lab	1
MTH 112 Pre-Calculus Algebra	3	MTH 113 Pre-Calculus Trigonometry	3
HIS 101 or HIS 201	3	ART 101 or MUS 101	3
ORI 101 Survival Skills	1	HIS 102, HIS 202, PSY 201, GEO 213, or SOC 201	3
FAS 103, HED101, NHM 102, MSC, PED	2	**Total**	**16**
Total	**17**		

Sophomore – Fall		**Sophomore – Spring**	
INT 205 Power and Energy Systems	3	INT 108 Industrial Materials/Processes II	3
INT 107 Industrial Materials/Processes I	3	INT 210 Mfg & Machine Tools Operation	3
INT 207 CAD/CAM	3	ECO 231 Principles of Macroeconomics	3
PHY 103 General Physics I	3	INT 206 Comp. Applications in Technology Mgt.	3
PHY 103L General Physics I Lab	1	ENG 202, ENG 204, or Humanities elective	3
ENG 201 or ENG 203	3	**Total**	**15**
Total	**16**		

Junior Year - Fall		**Junior Year - Spring**	
ECO 232 Principles of Microeconomics	3	INT 203, PHL 201, ENG 304 or OSM 310	3
ENG 205 General Speech	3	INT 310 Production Cost Analysis	3
INT 326 Applied Statistics in Tech. Mgt.	3	INT 311 Properties of Materials	3
INT 340 Principles of Occupational Safety & Health	3	INT 327 Statistical Quality Control	3
INT 341 Fire Protection & Prevention for Ind.	3	INT 342 Ind. Safety: Mgt & Technology	3
Total	**15**	**Total**	**15**

Senior Year - Fall		**Senior Year - Spring**	
INT 300 Methods, Standards, & Measurements	3	INT 410 Principles of Industrial Management	3
INT 420 Industrial Hygiene	3	INT 412 Technology, Society, and the Env.	2
INT 422 Ind. Hazardous Materials Mgt	3	INT 426 Industrial Safety Standards II	3
INT 425 Industrial Safety Standards I	3	INT 438 Production and Inventory Control	3
INT 437 Facilities Planning	3	Elective course	3
	3	Exit Examination	0
Total	**15**	Exit Interview	0
		Total	**14**

INDUSTRIAL TECHNOLOGY
MANUFACTURING SYSTEMS TECHNOLOGY CONCENTRATION
Quality Management Option
123-Semester Hours Required

The Manufacturing Systems Technology program of study requires 36 semester hours in the concentration, and 18 semester hours in the Quality Option.

Manufacturing Systems (36-semester hours)	
INT 107 Industrial Materials and Processes I	3
INT 108 Industrial Materials and Processes II	3
INT 207 CAD/CAM	3
INT 210 Manufacturing & Machine Tools Operation	3
INT 301 Product Design and Development	3
INT 310 Production Cost Analysis	3
INT 311 Properties of Materials	3
INT 327 Statistical Quality Control	3
INT 484Computer Integrated Manufacturing	3
INT 427 Manufacturing Automation Systems	3
INT 490 Internship: Technical	
INT 493 Senior Project	3
Total	**36**

Additional Requirements/Electives (18-semester hours required)	
INT 304 Manufacturing Organizations and Management	3
INT 434 Quality Planning and Analysis	3
INT 441 Design of Experiments	3
INT 443 Lean Manufacturing	3
Electives (Choose two courses from):	6
INT 406 Industrial Psychology (3)	
INT 410 Principles of Industrial Management (3)	
INT 435 Organizational Leadership and Supervision (3)	
MGT 207 Legal Environment and Ethics (3)	
MGT 315 Principles of Marketing (3)	
MGT 322 Organizational Behavior and Theory (3)	
Advisor approved MDT electives (6)	
Total	**18**

Minor in Manufacturing Systems Technology for non-Industrial Technology Majors

Minor in Manufacturing Systems Technology (18-sh)	
INT 107 Industrial Materials and Processes I	3
INT 108 Industrial Materials and Processes II	3
INT 207 CAD/CAM	3
INT 210 Manufacturing & Machine Tools Operation	3
INT 310 Production Cost Analysis	3
INT (Manufacturing elective)	3
Total	**18**

INDUSTRIAL TECHNOLOGY
MANUFACTURING SYSTEMS TECHNOLOGY CONCENTRATION
Quality Management Option
123 Semester Hours

Curriculum Sequence

Freshman - Fall		Freshman – Spring	
INT 103 Introduction to Industrial Technology	2	MDT 112 Machine and Tool Drafting	3
MDT 111 Technical Drafting	3	ENG 102, ENG 102H, or ENG 104	3
ENG 101, ENG 101H, or ENG 103	3	ART 101, ART 201, ART 202, or MUS 101	3
MTH 112 Pre-Calculus Algebra	3	MTH 113 Pre-Calculus Trigonometry	3
HIS 101 or HIS 201	3	FAS 103, HED 101, NHM 102, MSC or PED	2
ORI 101 Survival Skills	1	**Total**	**14**
Total	**15**		

Sophomore – Fall		Sophomore – Spring	
CHE 101, CHE 111, or PHY 103	3	CHE 102, CHE 112, or PHY 104	3
CHE 101L, CHE 111L, or PHY 103L	1	CHE 102L, CHE 112L, or PHY 104L	1
ENG 201 or ENG 203	3	HIS 102, HIS 202, Behavioral Science elective	3
INT 107 Industrial Materials and Processes I	3	INT 108 Industrial Materials and Processes II	3
INT 205 Power and Energy Systems	3	INT 203, PHL 201, ENG 304, or OSM 310	3
INT 207 CAD/CAM	3	INT 206 Comp. Applications in Technology Mgt.	3
Total	**16**	**Total**	**16**

Junior Year – Fall		Junior Year – Spring	
ECO 231 Principles of Macroeconomics	3	ECO 232 Principles of Microeconomics	2
ENG 205 General Speech	3	ENG 202, ENG 204, or Humanities elective	3
INT 301 Product Design & Development	3	INT 210 Manufacturing & Machine Tools Operation	3
INT 304 Mfg Organization and Management	3	INT 310 Production Cost Analysis	3
INT 326 Applied Statistics in Tech. Mgt.	3	INT 311 Properties of Materials	3
Total	**15**	INT 327 Statistical Quality Control	3
		Total	**17**

Senior Year – Fall		Senior Year – Spring	
INT 340 Principle of OSH	3	INT 412 Technology, Society, and the Env.	3
INT 434 Quality Planning & Analysis	3	INT 427 Manufacturing Automation Systems	3
INT 443 Lean Manufacturing	3	INT 441 Design of Experiments	3
INT 484 Computer-Aided Manufacturing	3	INT 493 Senior Project	3
INT 490 Internship: Technical	2	Elective	3
Elective	3	Exit Examination	0
Total	**17**	Exit Interview	0
		Total	**15**

INDUSTRIAL TECHNOLOGY
MANUFACTURING SYSTEMS TECHNOLOGY CONCENTRATION
Automated Manufacturing Option
124 Semester Hours

Curriculum Sequence

Freshman Year-Fall Semester	
INT 103 Introduction to Industrial Technology	2
MDT 111 Technical Drafting	3
ENG 101, ENG 101H or ENG 103	3
MTH 112 Pre-Calculus Algebra	3
CHE 101 General Chemistry I	3
CHE 101L General Chemistry I Lab	1
ORI 101 Survival Skills	1
Total	**16**

Freshman Year-Spring Semester	
MDT 112L Machine and Tools Drafting	3
MTH 113 Pre-Calculus Trigonometry	3
ENG 102, ENG 102H, or ENG 104	3
ART 101 or MUS 1101	3
PHY 103 General Physics I	3
PHY 103L General Physics I Lab	1
Total	**16**

Sophomore Year-Fall Semester	
ECO 231 Principles of Macroeconomics	3
ENG 201 or ENG 203	3
FAS 103, HED 101, NHM 102, MSC, or PED	3
HIS 101 or HIS 201	2
INT 107 Industrial Materials and Processes I	3
INT 205 Power and Energy Systems	3
Total	**17**

Sophomore Year-Spring Semester	
ECO 232 Principles of Microeconomics	3
ENG 202, ENG 204, or Elective Course	3
HIS 102 or HIS 202	3
INT 108 Industrial Materials and Processes II	3
INT 210 Mfg. & Machine Tools Operation	3
Total	**15**

Junior Year-Fall Semester	
ENG 205 General Speech	3
INT 207 CAD/CAM	3
INT 301 Product Design and Development	3
INT 304 Manufacturing Organization & Mgt.	3
INT 326 Applied Statistics in Tech. Mgt.	3
Total	**15**

Junior Year-Spring Semester	
INT 203, PHL 201, ENG 304, or OSM 310	3
INT 310 Production Cost Analysis	3
INT 311 Properties of Materials	3
INT 327 Statistical Quality Control	3
INT 412 Technology, Society, and the Env.	3
Total	**15**

Senior Year - Fall Semester	
INT 340 Principles of OSH	3
INT 438 Production and Inventory Control	3
INT 443 Lean Manufacturing	3
INT 484 Computer-Integrated Manufacturing	3
Elective	3
Total	**15**

Senior Year - Spring Semester	
INT 427 Manufacturing Automation Systems	3
INT 434 Quality Planning & Analysis	3
INT 490 Internship	3
INT 493 Senior Project	3
Elective	3
Exit Examination	0
Exit Interview	0
Total	**15**

MECHANICAL DRAFTING AND DESIGN TECHNOLOGY CONCENTRATION
Materials and Processing Option
123-Semester Hours Required

The Mechanical Drafting and Design Technology Program of Study requires 36 semester hours in the concentration and 18 semester hours in the Manufacturing Materials and Processing Option.

Mechanical Drafting and Design Technology (36-semester hours)

INT 490 Internship: Technical		3
INT 493 Senior Project		3
MDT 112 Machine and Tools Drafting		3
MDT 204 Electrical Drafting		3
MDT 210 Sheet Metal Drafting		3
MDT 213 Computer Graphics		3
MDT 301 Descriptive Geometry		3
MDT 302 Technical Design Principles		3
MDT 306 Structural Drafting		3
MDT 313 CADD I		3
MDT 414 CADD II		3
TGC 217 Statics		3
TGC 218 Strength of Materials		3
	Total	**39**

Additional Requirements/Electives (15-semester hours required)

INT 107 Industrial Materials and Processes I		3
INT 108 Industrial Materials and Processes II		3
INT 207 CAD/CAM		3
INT 210 Manufacturing & Machine Tools Operation		3
Advisor Approved Elective Course		3
	Total	**15**

MECHANICAL DRAFTING AND DESIGN TECHNOLOGY CONCENTRATION
Materials and Processes Option
123 Semester Hours

Curriculum Sequence

Freshman – Fall	
INT 103 Introduction to Industrial Technology	2
MDT 111 Technical Drafting	3
ENG 101, ENG 101H or ENG 103	3
MTH 112 Pre-Calculus Algebra	3
HIS 101, or HIS 201	3
ORI 101 Survival Skills	1
Total	**15**

Freshman – Spring	
ENG 102, ENG 102H or ENG 104	3
MDT 112 Machine and Tool Drafting	3
MTH 113 Pre-Calculus Trigonometry	3
ART 101, ART 201, ART 202, or MSU 101	3
FAS 103, HED 101, NHM 101, MSC or PED	2
HIS 102, HIS 202, Behavioral Science elective	3
Total	**17**

Sophomore – Fall	
CHE 101 or CHE 111	3
CHE 101L or CHE 111L	1
INT 107 Industrial Materials & Processes I	3
MDT 210 Sheet Metal Drafting	3
MDT 213 Computer Graphics	3
TGC 217 Statics	3
Total	**16**

Sophomore – Spring	
CHE 102, CHE 112, or PHY 103	3
CHE 102L, CHE 112L, or PHY 103L	1
INT 108 Industrial Materials & Processes II	3
INT 206 Comp. Applications in Technology Mgt.	3
MDT 204 Electrical Drafting	3
TGC 218 Strength of Materials	3
Total	**16**

Junior Year - Fall	
ECO 231 Principles of Macroeconomics	3
ENG 201 or ENG 203	3
ENG 205 General Speech	3
INT 205 Power and Energy Systems	3
INT 207 CAD/CAM	3
Total	**15**

Junior Year - Spring	
ECO 232 Principles of Microeconomics	3
ENG 202, ENG 204 or Humanities elective	3
INT 210 Mfg & Machine Tools Operation	3
INT 203, PHL 201, ENG 304, or OSM 310	3
MDT 302L Technical Design Principles	3
Total	**15**

Senior Year – Fall	
INT 326 Applied Statistics in Technology Mgt	3
INT 340 Principles of OSH	3
INT 490 Internship: Technical	2
MDT 301 Descriptive Geometry	3
MDT 313 CADD I	3
Total	**17**

Senior Year – Spring	
INT 412 Technology, Society, and the Env.	2
INT 493 Senior Project	3
MDT 306 Structural Drafting	3
MDT 414L CADD II	3
Elective Course	3
Exit Examination	0
Exit Interview	0
Total	**15**

TECHNOLOGY MANAGEMENT CONCENTRATION (2+2)
Minors, Options, and Electives
122 Semester Hours

The Technology Management (2+2) Program of Study requires 122 semester hours of coursework, including 44 semester hours in General Studies, 9-semester hours in Industrial Technology Foundations, 15-semester hours in Industrial Management, 36-semester hours in technical and technical-management oriented coursework at the associate degree level (equivalency) or senior college level, and 18-semester hours of additional requirements/elective courses. Transfer credits from the associate degree program may not exceed 64 semester hours.

General Studies – Areas I - IV (44-semester hours required)

The required courses (course prefixes and titles) in General Studies (Area I – Area V) are listed in STARS at website: www.aamu.edu. This required coursework may be completed at any regionally accredited 2-year or 4-year college, university, or at AAMU. Only courses with a passing grade ("C" or higher) are accepted for transfer credits.

Area I: Written Communications (6-sh required)	
ENG 101, ENG 101H, or ENG 103 Written Composition I	3
ENG 102, ENG 102H, or ENG 104 Written Composition II	3
Total	**6**
Area II: Humanities and Fine Arts (12-semester hours required)	
Note: Students must complete a 2-course sequence in either literature (ENG 201/ENG 202 or ENG 203/ENG 204) or history (HIS 101/102 or HIS 202/202)	
Required Speech course	3
Required Fine Arts elective	3
Required Literature elective	3
Required Humanities and second Literature sequence course	3
Total	12
Area III: Science and Mathematics (11-semester hours required)	
MTH 112 Pre-Calculus Algebra	3
Science elective/with required laboratory	4
Science elective/with required laboratory	4
Total	**11**
Area IV: History, Behavioral and Social Sciences (12-semester hours required)	
Note: Students must complete a 2-course sequence in either literature (ENG 201/ENG 202 or ENG 203/ENG 204) or history (HIS 101/102 or HIS 202/202)	
Required Economics elective	3
Required History elective	3
Behavioral or Social Science elective or second History sequence course	3
Behavioral Science elective	3
Total	**12**
Area V: Other Courses (3-semester hours required)	
College orientation course	1
Health or Physical Fitness elective	2
Additional Requirements/Electives included in the Concentration	
Total	**3**
Total for General Studies	**44**

INDUSTRIAL TECHNOLOGY
TECHNOLOGY MANAGEMENT CONCENTRATION
(formerly Applied Technology Concentration)
University Four-Year Technical and Technical-Management Oriented Transfer Courses

General Studies Requirements (Completed in AA or AS Degree Program)	
Area I: Written Communication	6
Area II: Humanities and Fine Arts	12
Area III: Science and Mathematics	14
Area IV: History, Behavioral and Social Sciences	12
Area V: AAMU Requirements: College Orientation and Health or Physical Fitness elective (Remaining required and elective courses are included with the Concentration)	3
Total	**47**

Industrial Technology Foundation Courses (22-sh)	
INT 103 Introduction to Industrial Technology	2
INT 205 Power and Energy Systems	3
INT 206 Computer Applications in Technology Management	3
INT 326 Applied Statistics in Technology Management	3
INT 340 Principles of Occupational Safety and Health	3
INT 412 Technology, Society, and the Environment	2
MDT 111 Technical Drafting	3
Elective: INT 203, TBC 201, PHL 201, OSM 310, or ENG 304	3
Total	**22**

Four-Year College and/or University Technical and Technical-Management Oriented Coursework (36-sh)

EXAMPLE- Courses transferred from the Career Technologies Teaching Field Program:	
INT 107 Industrial Materials and Processes I	3
INT 207 CAD/CAM	3
INT 210 Manufacturing & Machine Tools Operation	3
INT 301 Product Design/Development	3
INT 303L Transportation Systems Technology Laboratory	2
INT 306 Multimedia and Communication Technologies	3
INT 310 Production Cost Analysis	3
INT 313 Graphics Communication Technology	3
INT 320 Construction Systems Technology	3
INT 327 Statistical Quality Control	3
INT 484 Computer-Integrated Manufacturing	3
INT 305L Bio-Related Systems Technology Laboratory	2
INT 493 Senior Project	3
Total	**37**

INDUSTRIAL TECHNOLOGY
TECHNOLOGY MANAGEMENT CONCENTRATION
With a Completed AA or AS Degree

General Studies Requirements (Completed in AA or AS Degree Program)	
Area I: Written Communication	6
Area II: Humanities and Fine Arts	12
Area III: Science and Mathematics	11
Area IV: History, Behavioral and Social Sciences	12
Area V: AAMU Requirements: College Orientation and Health or Physical Fitness elective	3
Total	**44**
Industrial Technology Foundation Courses (9-semester hours)	
(Courses maybe completed at any regionally accredited 2-year or 4-year college or university or	
INT 203 Industrial Communications or TBC 201 Technical Communications	3
INT 206 Computer Applications in Technology Management	3
MTH – Applied mathematics elective course such as MTH 110, MTH 113, others	3
Total	**9**
Industrial Management Courses (15-sh)	
INT 326 Applied Statistics in Technology Management	3
INT 327 Statistical Quality Control	3
INT 340 Principles of Occupational Safety and Health	3
INT 428 Technology Project Management	3
INT 435 Organizational Leadership and Supervision	3
Total	**15**
Additional Requirements/Electives (18-semester hours required)	
(AA or AS Degree Major Courses counted here)	18
Total	**18**
Technical and Technical-Management Oriented Coursework with AAMU (36-semester hours)	
Advisor Approved Technical Coursework	24
Advisor Approved Technical-Management Oriented Coursework	12
Total for Technical and Technical-Management Oriented Coursework	**36**
Total for BS degree in Industrial Technology/Technology Management Concentration	**122**

TECHNOLOGY MANAGEMENT CONCENTRATION
With a Completed AAS Degree or Its Equivalency

General Studies Requirements	
Area I: Written Communication	6
Area II: Humanities and Fine Arts	12
Area III: Science and Mathematics	11
Area IV: History, Behavioral and Social Sciences	12
Area V: AAMU Requirements: College Orientation and Health or Physical Fitness elective (Remaining required and elective courses are included with the Concentration)	3
Total	**44**
Industrial Technology Foundation Courses (9-semester hours)	
INT 203 Industrial Communications or TBC 201 Technical Communications	3
INT 206 Computer Applications in Technology Management	3
MTH – Applied mathematics elective course such as MTH110, MTH113, others	3
Total	**9**
AAS Degree - Technical Requirements or Its equivalency (36-semester hours)	
Technical Block Transfer Credits from completed AAS Degree Program **or**	36
equivalent evaluation credits from any postsecondary career/technical education program at a community/technical college; training with industry program (i.e., Apprenticeships); military	
Total	**36**
INT 326 Applied Statistics in Technology Management	3
INT 327 Statistical Quality Control	3
INT 340 Principles of Occupational Safety and Health	3
INT 428 Technology Project Management	3
INT 435 Organizational Leadership and Supervision	3
Total	**15**
Additional Requirements/Electives (18-semester hours required)	
Advisor approved technical-management oriented option, electives, or minor area study at AAMU. Through a careful selection of courses, students may complete this requirement online	18
Total	**18**
Total for BS degree in Industrial Technology/Technology Management Concentration	**122**

INDUSTRIAL TECHNOLOGY
TECHNICAL EDUCATION – POSTSECONDARY EMPHASIS
122 Semester Hours

The Technical Education Major – Postsecondary Emphasis 122 semester hours of coursework, including 44 semester hours in General Studies, 36-semester hours in technical (trades and industry) specialty coursework, and 42 semester hours of required and elective career/technical certificate coursework leading to endorsements in Technical Education

General Studies – Areas I - IV (44-semester hours required)

The required courses (course prefixes and titles) in General Studies (Area I – Area V) are listed in STARS at website: www.aamu.edu. This required coursework maybe completed at any regionally accredited 2-year or 4-year college, university, or at AAMU. Only courses with a passing grade ("C" or higher) are accepted for transfer credits.

Area I: Written Communications (6-sh required)	
ENG 101, ENG 101H, or ENG 103 Written Composition I	3
ENG 102, ENG 102H, or ENG 104 Written Composition II	3
Total	**6**
Area II: Humanities and Fine Arts (12-semester hours required)	
Note: Students must complete a 2-course sequence in either literature (ENG201/ENG202 or ENG 203/ENG 204) or history (HIS 101/102 or HIS 202/202)	
Required Speech course	3
Required Fine Arts elective	3
Required Literature elective	3
Required Humanities and second Literature sequence course	3
Total	**12**
Area III: Science and Mathematics (11-semester hours required)	
MTH 112 Pre-Calculus Algebra	3
Physical Science elective/with required laboratory	4
Science elective/with required laboratory	4
Total	**11**
Area IV: History, Behavioral and Social Sciences (12-semester hours required)	
Note: Students must complete a 2-course sequence in either literature (ENG 201/ENG 202 or ENG 203/ENG 204) or history (HIS 101/102 or HIS 202/202)	
Required Economics elective	3
Required History elective	3
Behavioral or Social Science elective or second History sequence course	3
Behavioral Science elective	3
Total	**12**
Area V: Other Courses (3-semester hours required)	
College orientation course	1
Health or Physical Fitness elective	2
Additional Requirements/Electives included in the Concentration	
Total	**3**
Total for General Studies	**44**

INDUSTRIAL TECHNOLOGY
TECHNICAL EDUCATION MAJOR – POSTSECONDARY EMPHASIS
122 Semester Hours

General Studies Requirements	
Area I: Written Communication	6
Area II: Humanities and Fine Arts	12
Area III: Science and Mathematics	11
Area IV: History, Behavioral and Social Sciences	12
Area V: AAMU Requirements: College Orientation and Health or Physical Fitness elective	3
Total	**44**
Technical Requirements	
Technical Block Transfer Credits from completed AAS Degree Program **or** equivalent evaluation credits from any postsecondary career/technical education program at a community/technical college; training with industry program (i.e., Apprenticeships); military occupational specialty (MOS) program; government sponsored civilian career development program; or career development programs provided through business and industry (maximum credits: 36-semester hours)	36
Total	**36**
Applied Mathematics Course (3-sh)	
	3
Technical Education – Level 2 CT Endorsement Certificate Courses	
TED 302 Course Development and Evaluation in Career/Technical Education	3
TED 402 Learning Resources and Technology in Career/Technical Education	3
TED 404 Classroom/Laboratory Management in Career/Technical Education	3
TED 406 Methods of Teaching in Career and Technical Education	3
TED 409 Special Needs in Career and Technical Education	3
Total	**15**
Technical Education – Level 3 CT Endorsement Certificate Courses	
INT 206 Computer Applications in Technology Management	3
INT 340 Principles of Occupational Safety and Health	3
TED 407 Career/Technical Student Organizations	3
TED 410 Principles and Objectives of Career and Technical Education	3
Total	**12**
Technical Education – Required Electives	
TED 403 Career Information and Guidance	3
TED 421 Tests and Assessments in Technical Education	3
TED 450 Practicum	3
TED 301 Introduction to Technical Education **or**	3
Total	**12**
Total for BS Degree – Technical Education Major – Postsecondary Emphasis	**122**

BACHELOR OF SCIENCE IN SECONDARY EDUCATION
CAREER TECHNOLOGIES
128 Semester Hours

The Career Technologies teaching program prepares candidate teachers to teach subjects in Technology Education at the secondary level (grades 7-12) in Alabama. With the growing importance of technology to our society, it is vital that students receive an education that emphasizes technological literacy (ITEA, 2000). Students need to understand this so that they can make appropriate career choices regarding the technology that surrounds them. In keeping with the Mission of the School of Education, this program is designed to prepare candidate teachers to be effective educators as service professionals who can help all students learn.

Freshman Year-Fall Semester	
INT 103 Introduction to Industrial Technology	2
MDT 111 Technical Drafting	3
ENG 101 or ENG 101H	3
ORI 101 Survival Skills	1
MTH 112 Pre-Calculus Algebra	3
HIS 101 World History I	3
Total	**15**

Freshman Year-Spring Semester	
ENG 102 or ENG 102H	3
MTH 110 or MTH 113	3
HIS 203 Found. in American History/ Gov	3
FAS 103, HED101, NHM 102, MSC or PED	2
PSY 201 General Psychology	3
INT 206 Comp. Applications in Technology Mgt.	3
Total	**17**

Sophomore Year-Fall Semester	
INT 107 Industrial Materials and Processes I	3
INT 205 Power and Energy Systems	3
INT 207 CAD/CAM	3
PHY 103 General Physics I	3
PHY 103L General Physics I Lab	1
FED 200 Introduction to Teacher Education	2
FED 212 Human Growth/Development	3
Total	**18**

Sophomore Year-Spring Semester	
INT 210 Mfg & Machine Tools Operation	3
ART 101 or MUS 101	3
ENG 205 General Speech	3
BIO 101, CHE101, or PHY 104	3
BIO 101L, CHE101L, or PHY 104L	1
ECO 200 Basic Economics	3
Total	**16**

Junior Year-Fall Semester	
ENG 201 or ENG 203	3
FED 300 Foundations of Education	2
INT 301 Product Design and Development	3
INT 320 Construction Systems Tech.	3
SED 307 Principles of Teaching	3
SPE 201 Intro. to the Exceptional Children	3
Total	**17**

Junior Year-Spring Semester	
CTE 300 Curriculum Foundations in CTE	3
ENG 202 or ENG 204	3
INT 303L Transportation Systems Tech	2
INT 306 Multimedia/Com. Technologies	3
INT 313 Graphics Com. Technology	3
INT 412 Technology, Society, and the Environment	2
Total	**16**

Senior Year - Fall Semester	
INT 484 Computer-Integrated Manufacturing	3
INT 305L Bio-Related Systems Technology	2
FED 404 Tests and Measurements	3
RDG 409 Reading in Content Areas	3
PSY 403 Educational Psychology	3
CTE 400 M&M of Teaching in CTE	3
	17

Senior Year - Spring Semester	
CTE 495 Internship	12
Total	**12**

BACHELOR OF SCIENCE IN SECONDARY EDUCATION
TECHNICAL EDUCATION – SECONDARY EMPHASIS
126 Semester Hours

This teaching field program prepares candidate teachers for professional teaching positions in a career and technical education program at secondary level (Grades 6-12). It also prepares candidate teachers to serve as coordinator of cooperative career/technical education positions in technical education. A completed post-secondary career/technical education program and the minimum wage earning are required to be admitted to this secondary teaching field program.

Freshman – Fall	
ENG 101 Written Composition I	3
MTH 110 Finite Mathematics	3
HIS 101 World History I	3
CHE 101, PHY 101, or PHY 103	3
CHE 101L, PHY 101L, or PHY 103L	1
Technical elective from AAS Degree	3
ORI101 Survival Skills	1
	17

Freshman – Spring	
ENG 102 Written Composition II	3
MTH 112 Pre-Calculus Algebra	3
ART 101 or MUS 101	3
CHE 102, PHY 102 or PHY 104	3
CHE 102L, PHY 102L or PHY 104L	1
FAS 103, HED 101, NHM 102, MSC or PED	2
	Total 15

Sophomore – Fall	
FED 200 Introduction to Teacher Education	2
FED 211 Human Growth and Development	3
ENG 205 General Speech	3
ENG 201 or ENG 203	3
HIS 203 Foundations in American Govt.	3
ECO 200 Basic Economics	3
	Total 17

Sophomore – Spring	
INT 206 Comp. Applications in Technology Mgt.	3
SPE 201Intro. to Study of Exceptional Child.	3
PSY 201 General Psychology	3
ENG 202 or ENG 204	3
Technical elective from AAS Degree Program	3
	Total 15

Junior Year – Fall	
FED 300 Foundations in Education	2
INT 340 Principles of OSH	3
TED 301 Introduction to TED	3
TED 302 Course Dev/Evaluation in CTED	3
TED 404 CR/Laboratory Mgt in CTED	3
TED 410 Principles/Objectives of CTED	3
	Total 17

Junior Year – Spring	
INT 410 Principles of Industrial Management	3
SED 307 Principles of Teaching	3
TED 402 Learning Resources/Tech in CTED	3
TED 403 Career Information and Guidance	3
TED 407 CT Student Organizations	3
TED 409 Special Needs in CTED	3
	Total 18

Senior Year – Fall	
FED 404 Tests and Measurements	3
PSY 403 Educational Psychology	3
RDG 409 Reading in Content Areas	3
TED 405 Functions of the TED Coordinator	3
TED 406 Method of Teaching in CTED	3
	Total 15

Senior Year – Spring	
TED 494 Internship	12
	Total 12

INDUSTRIAL TECHNOLOGY (INT)
COURSE DESCRIPTIONS

INT 103 Introduction to Industrial Technology – 2 hrs. This course emphasizes the four basic technology systems in Manufacturing, Construction, Communication and Transportation, and emerging concepts and principles in Bio-Related Technologies. **Pre-requisites**: None

INT 107L Industrial Materials and Processes I – 3hrs. A basic course in machining technology and metallurgy. Step by step procedures used to provide instruction on how to turn raw metallic materials into useful products. **Pre-requisites:** None

INT 108L Industrial Materials and Processes II – Continuation of INT 107L. **Pre-requisites:** INT107

INT 201L Printing History/Typography – 3 hrs. This course places emphasis on the study and practice of type and typography combined with a rich social and technological evolution. **Pre-requisite:** None.

INT 202L Image Conversion – 3 hrs. This course places emphasis on the process of photographic processing for black and white copy; introduction to color applications, film assembly, platemaking, and quality control. **Pre-requisite:** None.

INT 203 Industrial Communications – 3hrs. An examination of the demand for clear, concise expression of thoughts in written and oral communications. Objectives, principles, and rules used in formal communication are explained. Procedures for organizing and writing technical memorandums, reports, and letters are covered and applied by students. **Pre-requisites:** ENG 102.

INT 205L Power and Energy Systems – 3hrs. A basic study of energy sources. Means of harnessing and transmitting energy and the effects of power systems. **Pre-requisites:** MTH112

INT 206 Computer Applications in Technology Management – 3 hrs. This course is designed to introduce students to the computer and its use in industrial technology, technical education, and technology education. Emphasis is placed on the computer and its terminology, applications, networking, troubleshooting, ethics, trends, and safe handling/operation of hardware, software and supplies. Students gain hands-on experience in the use of the computer application software, with emphasis on word processing, PowerPoint presentation, and Excel spreadsheet applications as problem solving tools in technology management. **Pre-requisites:** MTH112.

INT 207 CAD/CAM – 3hrs. This a basic course in computer-aided design and manufacturing. Topics include geometric modeling, computer graphics, product design and development, product manufacturing and management. Use of the computer is required. **Pre-requisites:** INT102

INT 210 Manufacturing and Machine Tools Operation – 3hrs. 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. **Pre-requisites:** INT108

INT 300 Methods, Standards, and Measurement
This course covers the basic concepts and techniques of work methods and measurement. The focus of this course is on workplace design, ergonomics of workplace design, performance measurement, study of operations and process analysis, and methods analysis in manufacturing and service industries. Prerequisite: Junior standing

INT 301 Product Design and Development – 3 hrs. A study of processes, procedures and techniques of designing and developing consumer products. **Pre-requisites:** INT107 or INT108.

INT 303L Transportation Systems: Power & Energy Technologies – 2 hrs. An investigation of transportation systems. Emphasis is placed on air, land, water, and space travel and power/energy systems employed in transportation technology. Careers, concepts, processes and applications relating to transportation, power and energy are explored. **Prerequisites:** INT 205 or MET 200.

INT 304 Manufacturing Organization and Management – 3 hrs. A study of the organization and management of resources and systems in the manufacturing industry. Prerequisite: Junior standing.

INT 305L Bio-Related Systems Technology – 2 hrs. An exploratory study of the developments in the field of bio-related technologies with emphasis on health-related, medical, ergonomics, agri-bio-technologies, and environmental management technologies. The perspective of issues on the environment, individual, society and an analysis of innovations are investigated. **Prerequisites**: Junior standing

INT 306L Multimedia and Communication Technologies – 3 hrs. The course covers subjects related to the transmission of information via various communication modes to include audio and visual, computer multimedia and animation, and data communication. A laboratory-based course designed to provide persons interested in teaching technology education a working knowledge of various modes of communication. **Prerequisites**: INT 206

INT 307 Printing Management/Estimating – 3 hrs. This course places emphasis in leadership, planning, organizing, and maintaining a printing plant or any other production plant, including organization and operations of various departments, layout of a shop, equipment selection, materials and location. Also, it focuses on the analysis of printing cost procedures. A breakdown of how to determine the cost of materials, equipment and human activity. **Pre-requisites:** None.

INT 308 Printing Inks & Substrates – 3hrs. The study of the relationship of inks, papers and other substrates use to produce the printed image. Emphasis is on types of paper used in the printing and production processes, ink colors and mixing color combinations. **Pre-requisites:** INT 307.

INT 310 Production Cost Analysis – 3hrs. Theory and principles of financial project analyses for making financial decisions on technical projects and alternatives. Topics include time value of money and investments, cash flow equivalence techniques, depreciation and income taxes, break-even analysis. Emphasis is placed on contemporary computer-oriented decision-making tools and the application of cost information to the production of manufactured goods. Use of computer is required. **Prerequisites**: MTH 112; and junior standing.

INT 311 Properties of Materials – 3hrs. A study of 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 the use of laboratory testing machines. **Pre-requisites:** INT 108 and INT 210

INT 313 Principles of Graphic Communications – 3 hrs. This course provides a thorough introduction to graphic communications, printing processes and focuses on digital printing and electronic pre-press systems. **Pre-requisite:** None.

INT 314L Image Transfer – 3 hrs. Fundamentals of offset presswork; preparation of the press, one color presswork; methods of offset presswork, including press preparation, film assembly, platemaking, make-ready, press running; mechanism and upkeep; running difficult papers and forms; and multi-color work. 2 Lect/3 Lab. **Pre-requisites:** INT 202L.

INT 315L Advanced Image Transfer – 3hrs. This course includes all aspects of printing production using conventional and digital printing. Covers silk screen printing on various substrates. **Pre-requisite:** INT 314L

INT 316 Production Technologies: Manufacturing & Construction – 3 hrs. An emphasis on manufacturing systems, managerial processes, and manufacturing resources. Additionally, a study of the construction industry with regard to concepts of construction technology through experiences in planning, organizing, and controlling of resources to produce constructed products on and off-site. Construction systems, models and historical perspectives are covered. **Prerequisites:** Junior standing

INT 320 Construction Technologies – 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. Students are expected to complete a construction project in the laboratory. **Prerequisites:** Junior standing.

INT 326 Applied Statistics in Technology Management – 3hrs. Course introduces students to the applications of statistics in technology management with emphasis on designing experiments, descriptive statistics, correlation and

regression, probability and sampling, and tests of significance. Use of Minitab statistical software is emphasized. **Prerequisites:** MTH 112 and junior standing.

INT 327 Statistical Quality Control – 3hrs. Methods and tools for analyzing and controlling variations in industrial processes. Topics include frequency distributions, process data modeling, variables and attributes control charts, and process capability. Use of Minitab statistical software is emphasized. **Pre-requisites:** INT 326.

INT 330L Graphic Design & Planning – 3hrs. This course places emphasis on four main goals: first, to provide students with a comprehensive foundation in design; second, to address basic problems and applications in the graphic design and advertising; third, to encourage students to explore the disciplining to graphic design; and fourth, to explore various graphic design applications such as CDs, packages, logos, posters and etc. Students will utilize magazines, the computer lab, and other printed materials in this class for the various projects. **Pre-requisite:** INT201L**.**

INT 340 Principles of Occupational Safety and Health – 3 hrs. An introductory study of the significance of maintaining quality occupational safety and health standards in the workplace; safety education and promotion; and occupational safety and health requirements. **Pre-requisites**:
Junior standing

INT 341 Fire Protection and Prevention 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. **Pre-requisites**: Junior standing

INT342 Industrial Safety: Management and Technology – 3 hrs. Based on sound safety, management, and quality and performance technology principles, Industrial Safety: Management and Technology will help manage employees and or projects in safety and health efforts. **Prerequisites**: INT 340

INT 401 Industrial 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 environmental systems, project control, and cost control for maintenance operations through the use of a computerized industrial maintenance management program. **Pre-requisites:** Senior standing

INT 406 Industrial Psychology – 3 hrs. A survey course that focuses on research studies in industrial and organizational psychology to include job related behavior and its measurements; employee selection and placement; employee training and development; the organizational and social context of human work behavior; and the job and work environment. **Prerequisites:** Senior standing.

INT 409L Plastics Processing – 3 hrs. A basic course in plastics, structure, composition, and processing, extrusion, injection, and blow molding. **Prerequisite**: INT108

INT 410 Principles of Industrial Management – 3hrs. A survey course that focuses on the business environment, including sociological and psychological principles pertinent to effective human relations in business and industry; work ethics, values, and leadership skills; methods, concepts, and techniques appropriate to industrial organization and management; and labor relations, regulations, and laws affecting employer-employee relations. **Pre-requisites:** Senior standing.

INT 412 Technology, Society, and the Environment – 2 hrs. This course examines the development of technology and its effects upon the economy, environment, individual, and society. **Pre-requisites:** None

INT 417L Electronic Publishing I – 3hrs. This course is an official training course of Adobe Illustrator CS3. Students learn to design, create, and manipulate text and other graphic elements on the computer screen. Exercises are generated with the aid of the student knowledge of the program itself after completing computer lab activities and/or imported text and graphic for print and online graphics. **Pre-requisite:** INT 330L

INT 418L Electronic Publishing II – 3hrs. This course is an official training course of Adobe Illustrator CS3. Students learn how to plan, create and enhance an illustration, work with paths, layers, and tools, and edit artwork using advanced features for print and for the web. Exercises are generated with the aid of the Project Illustrator itself along with other programs in Adobe CS3. **Pre-requisite:** INT 417L

INT 419 Quality in the Printing Industry – 3hrs. An analysis of industrial standards and methods of quality controls in the printing industry. **Pre-requisites:** INT326

INT 420 Industrial Hygiene – 3 hrs. This course covers federal, state, and professional standards applicable to health and environmental controls, and personal protection equipment in factories and plants. **Pre-requisites:** INT 340 and Senior Standing

INT 422 Industrial Hazardous Materials Management – 3 hrs. Specific OSH, NRS, ANSI and other standards as applied to usage, storage, transportation and disposal of industrial hazardous materials. Pre-requisites: Senior Standing

INT 425/426 Industrial Safety Standards I – 3 hrs. Specific federal and state OSH standards as applied to building and facilities, materials handling and storage, machine guarding, welding, electrical hazards, construction, and transportation in factories and plants. **Prerequisites:** Senior Standing.

INT 426 Industrial Safety Standards II – 3 hrs. Continuation of INT 425. **Prerequisite**: INT 425.

INT 427 Manufacturing Automated Systems – 3hrs. Principles and practices off automating machine tools operations and manufacturing processes. **Pre-requisites:** INT 207, INT 304, and INT 310

INT 428 Technology Project Management – 3hrs. Theory and practices of managing projects, including the application of modern project management software. **Pre-requisites:** Senior standing

INT 434 Quality Planning & Analysis – 3hrs. Tools and techniques to control quality of products and services and improve enterprise performance by ensuring quality of processes, systems, organization, and leadership. **Pre-requisite:** INT 327

INT 435 Organizational Leadership and Supervision – 3 hrs. Modern industrial supervision techniques with Respect to interpersonal relations, societal changes, and effects of technological developments and impacts on duties, roles, and responsibilities of the supervisor. **Pre-requisite:** Senior Standing.

INT 437 Facilities Planning – 3hrs. Techniques and procedures for developing an efficient facility layout. The course focuses on systematic and methodical approach that will lead students through the collection, analysis and development of information to produce a quality functional plant layout. **Pre-requisites:** Senior Standing.

INT 438 Production and Inventory Control – 3hrs. Principles and techniques of minimizing cost of ordering, receiving, storing, issuing, scheduling, routing, dispatching, expediting, and controlling materials, parts, subassemblies, and final assembles for a manufacturing system. **Pre-requisites:** Senior Standing.

INT 441 Design of Experiments – 3hrs. This course covers destructive and non-destructive testing procedures and equipment for determining mechanical, physical, and other properties of industrial materials. Students is required to use various research tools and techniques to construct and analyze experiments for process improvements to include Randomized blocks, Latin squares, and related designs, factorial design, regression models, response surface models, and analysis of variance. Use of Minitab statistical software is emphasized. **Pre-requisites:** INT326.

INT 443 Lean Manufacturing – 3hrs. Manufacturing system design based on philosophies and principles for the elimination of waste or non-value-added activities in manufacturing operations. **Pre-requisites:** INT 304.

INT 484 Computer-Integrated Manufacturing – 3hrs. 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. **Pre-requisites:** INT 207 and INT 210.

INT 490 Internship I (Technical) – 3hrs. Practical **technical** experience 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. **Pre-requisite:** Junior and Senior standing.

INT 491 Internship II (Management) – 3hrs. Practical **management** experience 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. **Pre-requisite:** Junior or Senior standing.

INT 493 Senior Project – 3 hrs. This course focuses primarily on an individual design project within a chosen academic concentration in Industrial Technology under the supervision of an instructor. **Pre-requisite:** INT 301

CAREER TECHNOLOGIES (CTE)
Course Descriptions

CTE **300 Curriculum Foundations in Technology Education** – 3 hrs. A study of the growth and development of career and technology education in the United States, together with considerations to the effects of the role and trends of technology education on curriculum, and teaching procedures.
Prerequisites: None.

CTE 402 Methods and Materials of Teaching CTE – 3 hrs. A course designed to acquaint the student with education principles focusing on developing and selecting instructional materials and strategies to be used in teaching technology education subjects. The use of the computer as a teaching tool in the classroom is explored. The candidate teacher is required to develop units of instruction and lesson plans that incorporate instructional materials and strategies to be used in teaching and evaluating students' performance in the classroom, and the laboratory.
Prerequisites: CTE300 and Senior standing in Career Technologies.

CTE 495 Directed Teaching – 12 hrs**.** Twelve weeks of full-time teaching in Career Technologies (Technology Education) under the supervision of supervising teachers in off-campus public schools. Upon return to campus, students share their experiences, discuss problems, and develop new techniques in a professional seminar.
Prerequisites: Approval of Director of Field Experience is required

TECHNICAL EDUCATION (TED)
Course Descriptions

TED 297 Occupational Assessment: Knowledge – Nine Semester Hours. An approved occupational competency test is administered to students to assess their knowledge in a career/technical education program area (trades and industry). **Pre-requisites:** Minimum validated wage earning work experience in an approved postsecondary career/technical education program (trades and industry). Students must make arrangements with the professional organizations administering the examination, and provide copies of the test results to the Department.

TED 298 Occupational Assessment: Skills – Nine Semester Hours. An approved occupational competency test is administered to students to assess their skills in a career/technical education program area (trades and industry). **Pre-requisites:** Minimum validated wage earning work experience in an approved postsecondary career/technical education program (trades and industry). Students must make arrangements with the professional organizations administering the examination, and provide copies of the test results to the Department.

TED 299 Basic Career/Technical Education Program Completion Credits. – Zero to Thirty Six (0:36) Semester Hours. Credits awarded to students at the point of entry for work related learning in post-secondary career/technical programs offered at community/technical college level; military occupational specialty (MOS) career programs; career development programs in business and industry; and civilian career programs sponsored through government schools and colleges through an approved evaluation program guide.

TED 301 Introduction to Technical Education – Three Semester Hours. This course is designed for the beginning technical education teacher, as well as those planning to enter the profession. It focuses on methods and practical examples of methods and techniques needed by teachers to deal with the bureaucracy, the curriculum, and students during the first year of teaching. **Pre-requisites:** Completion of the New Teacher Institute is required to enroll in this course.

TED 302 Course Development and Evaluation in Career/Technical Education – Three Semester Hours. The courses focuses on practices, procedures, and techniques that are employed to analyze occupations to identify for content for the program of study; organization and sequence of instruction; and developing of objectives and learning outcomes; and implementation schedules. **Pre-requisites:** Hold or eligible to hold the Level I Career/Technical Certificate endorsed in Technical Education or the Level 1/Level 2 Career/Technical Certificate endorsed in Health Science. **Pre-requisites:** Hold or is eligible to receive the Level 1 Career/Technical Certificate endorsed in Technical Education.

TED 399 Supervised Occupational Development . Three Semester Hours each. This course is designed to provide an opportunity for students to maintain their existing knowledge, improve existing knowledge, or developing new knowledge in a subject area within their career/technical program area through participation in work experience programs in business and industry; seminars and workshops conducted by professional societies in career/technical education. **Pre-requisites:** Advisor approval is required prior to enrolling in this course (s).

TED 402 Learning Resources and Technology in Career/Technical Education – Three Semester Hours. The course covers practices, procedures, and techniques that are employed in developing and selecting learning resources and technology to be used in teaching subjects in a career/technical education program. **Pre-requisites:** TED 302

TED 403 Career Information and Guidance – Three Semester Hours. The course covers research and development in theories of vocational development and occupational choices; and models of career education programs. **Pre-requisites:** Senior classification.

TED 404 Classroom and Laboratory Management in Career/Technical Education – Three Semester Hours. The course emphasizes the physical aspects of buildings, laboratories, and shops to include building design and lay. The course also covers topics on purchase and inventory of supplies, materials, and equipment; selection, acquisition, installation, and maintenance of equipment; and basic philosophy of classroom and laboratory instruction, and industrial safety.
Pre-requisites: TED 302

TED 405 Functions of the Technical Education Coordinator – Three Semester Hours.
This course focuses on the role and responsibilities of the high school cooperative technical education coordinator. It examines in details planning, organizing, and maintaining a high school cooperative career/technical education program; and designing and providing instruction in the related instruction program. **Pre-requisites:** Admission to the Secondary Teacher Education Program.

TED 406 Methods of Teaching in Career and Technical Education –Three Semester Hours
The course examines methods and materials of presenting classroom and laboratory instruction in career/technical education programs. Candidate teachers are required to design and develop lessons to be used in providing instruction and evaluating students performance in specialized technical education (trades and industrial education) programs. **Pre-requisites:** TED 302, TED 402, and TED 404.

TED 407 Career/Technical Student Organizations – Three Semester Hours. This course examines the duties and responsibilities of career/technical education teach in advising students in the high school career/technical student organization. **Pre-requisites:** Senior standing

TED 409 Special Needs in Career/Technical Education (formerly TTE 440 Special Needs in Career/Technical Education) – Three Semester Hours. This course focuses on methods and materials appropriate for providing instruction in a career/technical education programs for students special needs and students from special populations. **Pre-requisites:** TED 302, TED 402, TED 404, and TED 406.

TED 410 Principles and Objectives of Career/Technical Education (formerly TTE 301 Principles of Career/Technical Education – Three Semester Hours. This course traces the history and development of career/technical education; and principles and objectives for providing future directions in career/technical education. **Pre-requisites:** Senior standing.

TED 421 Tests and Assessments in Career/Technical Education – Three Semester Hours
The course covers principles and practices in designing and developing test and assessment instruments to be used in evaluating student performance in career/technical education programs. Candidate teachers will develop instruments to be used in testing and assessing the student's performance on knowledge and skills tests; and contents and demonstrations in career/technical student organizations. **Pre-requisites:** Senior standing.

TED 451/TED 452 Practicum I/II – Three Semester Hours each. Supervised practical experience provides to the candidate teacher in a career/technical education program at the secondary or post-secondary level. **Pre-requisites:** Senior standing and security clearance required to enroll in this course.

TED 495 Internship in Technical Education – Twelve Semester Hours. A 12-week, full-time internship experience in a high school setting under the direct supervision of the master teacher. Candidate teachers meet weekly during the evening hours on campus in a seminar arrangement to discuss problems and successes encountered during the internship experience. Candidate are required to prepare a portfolio outlining in details their daily activities and experiences during the internship. **Pre-requisites:** Candidate teachers must be cleared by the Office of Field Experience to enroll in Internship.

DEPARTMENT OF COMPUTER SCIENCE
Room 302 Engineering and Technology Building
(256) 372-5570

INTRODUCTION

The program in 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. Virtually every Computer Science course requires some practice in programming skills, so that students will, upon graduation, be prepared for either graduate school or entry into the computer applications job market.

MISSION / OBJECTIVES

The Computer Science curriculum at Alabama A & M University provides students with an in-depth background in both the hardware and software aspects of Computer Science. The program area of computer science also offers individual courses and minors to students in other disciplines.

GENERAL PROGRAM REQUIREMENTS FOR A MAJOR

BACHELOR OF SCIENCE DEGREE IN COMPUTER SCIENCE REQUIREMENTS

Majors in Computer Science must earn a grade of 'C' or better in all Computer Science courses. Students must complete 126 semester hours of course work outlined below. The Computer Science required courses consist of 17 courses (51 hours) and an additional 5 courses (15 hours) of Computer Science electives, of which 3 courses (9 hours) must be at the senior level (400 or greater). *Prerequisites must be carefully followed.*

Required Computer Science Courses for Major:

CMP 104 Introduction to Computers & Ethics
CMP 102 Introduction to Programming I
CMP 103 Computer Mathematics
CMP 109 Introduction to Programming II
CMP 204 Visual Programming
CMP 208 Logical Foundations
CMP 215 Data Structures
CMP 220 Introduction 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 Introduction to Database Systems

Computer Science Elective Courses:

CMP 304 Introduction to Web Programming
CMP 309 Computer Graphics
CMP 311 Introduction to Simulation
CMP 315 Introduction to Game Programming
CMP 320 Introduction to Multimedia Authoring
CMP 321 Principles of Information Security
CMP 329 Object Oriented Design
CMP 330 Computers in Society
CMP 408 Wireless Computing
CMP 409 Introduction to Digital Image Processing
CMP 414 Introduction to Forensic Computing
CMP 421 Introduction to Computer Security
CMP 435 Introduction to Bioinformatics
CMP 440 Programming Languages
CMP 450 Artificial Intelligence
CMP 483 Compilers
CMP 484 Internship
CMP 485 Introduction to Data Communications and Networks
CMP 490 High Performance Computing

REQUIREMENTS FOR A MINOR IN COMPUTER SCIENCE

Minors in Computer Science must earn a grade of 'C' or better in all Computer Science courses. Students may complete a minor in Computer Science by earning 21 semester hours, (seven courses) of credit. Five courses (15 hours) must include the following requirements:

Course Number	Course Title	Semester Hours
CMP 104	Intro to Computers & Ethics	3
CMP 102	Intro to Programming I	3
CMP 103	Computer Mathematics	3
CMP 109	Intro to Programming II	3
CMP 204	Visual Programming	3

The two remaining course electives (6 semester hours) must be selected from any Computer Science junior (300 level) or senior (400 level) courses as long as the prerequisites have been met.

CURRICULUM FOR A MAJOR IN COMPUTER SCIENCE
126 Credit hours

Freshman Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ORI 101 Survival Skills	1	[4]ENG 102 Composition II	3
[1]ENG 101 Composition I	3	MTH 126 Calculus II	4
MTH 125 Calculus I	4	CMP 102 Intro. to Programming I	3
[2]HIS History Elective	3	CMP 103 Computer Mathematics	3
CMP 104 Intro. to Comp & Ethics	3	[5]Fine Arts Elective	3
[3]CHE or BIO	4	[6]Health Science/Phys. Ed	2
	18		18

[1]ENG 103 may be taken by international students; [2]HIS 101 or HIS 102, or HIS 201 or HIS 202; [3]CHE 101(3 hrs) and CHE 101L (1 hr) or BIO 103 (3 hrs) and BIO 103L (1 hr); [4]ENG 104 may be taken by international students; [5]ART 101 or MUS 101; [6]HED 101, NHM 103, or FAS 101

Sophomore Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
		ECO 200 Basic Economics	3
[7]ENG Literature Sequence I	3	[7]ENG Literature Sequence II	3
PHY 105 Physics I	4	PHY 106 Physics II	4
CMP 109 Intro. to Programming II	3	CMP 215 Data Structures	3
CMP 204 Visual Programming	3	CMP 220 Intro. to Switching Theory	3
CMP 208 Logical Found. Of Comp .	3	[8]Social Science	3
	16		19

[7]ENG 201 and ENG 202; or ENG 203 and ENG 204; [8] PSY 201, SOC 201, or GEO 213

Junior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
ENG 205 General Speech	3		
MTH 227 Calculus III	4	CMP 380 Computer Organization	3
MTH 237 Intro. to Linear Algebra	3	CMP 384 Operating Systems	3
CMP 303 Assembly Language	3	CMP 305 Numerical Analysis	3
**CMP 300 level Elective	3	**CMP 300 level Elective	3
	16		12

Senior Year

First Semester	*Sem. Hrs.*	*Second Semester*	*Sem. Hrs.*
MTH 453 Probability & Statistics	3		
CMP 401 Software Engineering	3	CMP 403 Senior Problems	3
CMP 425 Theory of Algorithms	3	CMP 410 Seminar	3
**CMP 400 level Elective	3	CMP 488 Intro. to Database Systems	3
**CMP 400 level Elective	3	**CMP 400 level Elective	3
	15		12

** Electives must be chosen from approved computer science courses on the junior or senior level. The cooperative education elective provides for junior and senior level students to earn six credit hours for approved work experience. The internship elective permits senior level students to earn three credit hours through University cooperation with employers. The student may not earn more than six hours credit from the combination of cooperative education and CMP 484.

PROGRAM OFFERINGS

A curriculum leading to a Bachelors of Science degree in Computer Science.

FINANCIAL ASSISTANCE / SCHOLARSHIPS

All students should check with Department of Financial Aid each semester to avail themselves of any available scholarships, grants, or on campus part-time jobs.

STUDENT / PROFESSIONAL ORGANIZATIONS

The Department and the School of Engineering supports the following computer related organizations: National Society of Black Engineers, Institute of Electrical and Electronics Engineers, Eta Kappa Tau Engineering and Technology Fraternity, and the Computer Science Club.

PROGRAM CURRICULA AND COURSE DESCRIPTIONS

CMP 101 Fundamentals of Computer and Information Systems - 3hrs.
This course is designed to introduce students to fundamentals of computer science and technologies. Topics will cover brief history of computer and the information age, word processing, INTERNET access, operating system, computer structure, electronic storage, database fundamentals, computer network. Impact of computers on the individual and society and application of computer in different areas are also introduced. *Prerequisite: None*

CMP 102 Introduction to Programming I - 3hrs.
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 10 Computer Mathematics - 3hrs.
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: MTH 112 or equivalent, Co-requisite: CMP 102*

CMP 104 Introduction to Computers & Ethics - 3hrs.
This course is designed to introduce students to fundamentals of computer science and technologies. Topics will cover brief history of computer and the information age, Algorithms, word processing, INTERNET access, operating system, computer structure, electronic storage, database fundamentals, computer network. Impact of computers on the individual and society and application of computer in different areas are also introduced. *Prerequisite: None*

CMP 109 Introduction to Programming II - 3hrs.
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 - 3hrs.
This course introduces fundamental concepts of visual programming languages such as Visual Basic, Visual C#, 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 102*

CMP 208 Logical Foundations of Computing - 3hrs.
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 Struc*tures - 3hrs.
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 109*

CMP 220 Introduction to Switching Theory - 3hrs.
This course contains a review of Boolean algebra and combinatorial circuits, and 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 - 3hrs.
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 304 Introduction to Web Programming - 3hrs.
This course is designed to introduce undergraduate students to the basic concepts of the World Wide Web (HTTP, HTML, browser software), languages and techniques used for web programming (for example: Perl, Java, CGI), data transfer over the web (associated tools and techniques), and the tools available in the web environment. By the end of the course the students are expected to learn programming in HTML, Perl and to be able to develop interactive web pages and applications. *Prerequisites: None*

CMP 305 Numerical Analysis - 3hrs.
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 109*

CMP 309 Computer Graphics - 3hrs.
Computer Graphics 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 - 3hrs.
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 315 Introduction to Game Programming – 3hrs.
The course is designed to introduce undergraduate students to the basic concepts of game design and development, hands-on exposure to the different techniques used for game programming, implementation on different target devices/platforms using the available tools and programming languages such as java, C# in the game environment. By the end of the course the students are expected to learn the concepts of game design, development and implementation using different programming languages/tools available. *Prerequisites: CMP 204 and CMP 215*

CMP 320 Introduction to Multimedia Authoring - 3hrs.
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 321 Principles of Information Security – 3hrs.
Introduce students to the principles of information security and assurance as applied to computer networks. This course includes the foundation for understanding the key issues associated with protecting information security assets, determining levels of protection and response to security incidents, and designing a consistent, reasonable information system with appropriate intrusion detection and reporting features. Students will be exposed to the spectrum of security activities, methods, tools, and procedures. Coverage will include inspection and protection of information assets, identification of appropriate pre/post-incident procedures, and technical/managerial responses. Prerequisite: CMP 104

CMP 329 Object Oriented Design - 3hrs.
Object Oriented Design 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 Computers 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 - 3hrs.
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 303*

CMP 384 Operating Systems - 3hrs.
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 - 3hrs.
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. *Prerequisite: CMP 215 , CMP 384 and senior standing*

CMP 403 Senior Problems - 3hrs.
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 408 Wireless Computing - 3hrs.
Advances and new applications in the expanding field of telecommunications and wireless computing and networks are investigated. Methodologies and tools for network planning, implementation, management, maintenance, and security are described. Topics include asynchronous transfer mode (ATM), synchronous optical network/synchronous digital hierarchy (SONET/SDH), Gigabit Ethernet, the Open Systems Interconnection (OSI), Reference Model, transmission media, second-generation and third generation wireless networks, network protocols, and networking performance. Trends in standardization, internet working, and the development of optical networks; WLANs (Wireless Local Area Networks), WMANs (Wireless Metropolitan Networks) and WWANs (Wireless Wide Area Networks) and residential networking solutions that feature cable, DSL (Digital Subscriber Line), Power line and satellite technologies are considered. *Prerequisites: CMP 380*

CMP 409 Introduction to Digital Image Processing - 3hrs.
Focus on the fundamental concepts of image processing and computer vision; it's principles in signal processing, the theory of feature extraction and image analysis, its relation to human vision and technology for implementation. Introduce students to MATLAB image processing toolbox. Students will understand how to acquire and process

images, the nature and operation of basic image processing algorithms and their basis. *Prerequisite: Senior Standing*

CMP 410 Seminar - 3hrs.
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 414 Introduction to Forensic Computing - 3hrs.
The course introduces the undergraduate students to the study of computer forensics, including the concepts, tools and techniques necessary for identification, retrieval, preservation, analysis and documentation of information from electronic media in matters of suspected unauthorized access to confidential information, intellectual property crimes, fraud, piracy, industrial espionage, decryption, destruction of information, etc. The course will incorporate demonstrations and laboratory exercises to reinforce practical applications of course instruction. *Prerequisite: CMP 380 and CMP 384*

CMP 421 Introduction to Computer Security - 3hrs.
This course is designed to introduce undergraduate students to the basic concepts of computer security. The students will learn the tools and techniques that can monitor the system for activities by unwanted programs such as malware, adware, viruses, worms, trojans, etc. By the end of the course the students are expected to learn to use available tools as well as develop and implement programs using different programming languages, for computer security. *Prerequisite: CMP 380 and CMP 384*

CMP 425 Theory of Algorithms - 3hrs.
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 435 Introduction to Bioinformatics - 3hrs.
This course is designed to introduce students to the fast emerging field of Bioinformatics that demands/consists of knowledge mainly from the areas of biology and computer science. The main objectives of this course are to prepare the students to analyze the vast biomolecular data and to develop necessary tools to analyze.
Prerequisite: Senior standing

CMP 440 Programming Languages - 3hrs.
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 - 3hrs.
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 483 Compilers - 3hrs.
This course is a study of formal grammars, syntactic and semantic analysis, code generation, and other topics necessary to understand how compilers translate high-level languages into machine form. Programming projects are assigned. *Prerequisites: CMP 215 and CMP 380*

CMP 484 Internship - 3hrs.
The computer science internship program gives senior level undergraduates an opportunity to gain valuable, practical experience in the professional work environment. An internship consists of approved part-time employment over one semester with cooperation between the student's advisor and the employer. *Prerequisites: senior standing*

CMP 485 Introductions to Data Communications and Networks - 3hrs.
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 - 3hrs.
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 - 3hrs.
This course serves as an introduction to the areas of parallel and structured computers. The course covers distributed computers in networks, multiprocessors, and pipelines. Architectural considerations, algorithm design, and performance measures are also covered. *Prerequisites: CMP 380 and CMP 425.*

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Note: A comprehensive roster of Cooperative Extension participants affiliated with Auburn University can be located in the Auburn University Bulletin.

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