# Alabama Agricultural and Mechanical University 

## Undergraduate Bulletin

## 2000-2002

4900 Meridian Street<br>Huntsville, Alabama<br>35810

(256) 851-5000


#### Abstract

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.


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.

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# OFFICIAL UNIVERSITY ACADEMIC CALENDAR <br> Fall Semester 2001 

August 17, 2001
August 20, 2001

August 25, 2001
August 27, 2001

September 3, 2001
September 4, 2001

September 7, 2001
September 12, 2001

September 28, 2001

October 3, 2001
October 15-20, 2001
October 23, 2001
November 7-9, 2001

November 14-16

November 21, 2001
November 24, 2001
November 27, 2001
December 10-14, 2001

December 14, 2001
December 17, 2001

Faculty/Staff Conference
Registration (8:30-5:00)
Classes Begin (Saturday)
All classes in session

Labor Day Holiday

Classes Resume
Drop/Add Period Begins
Late Registration
Registration Ends
Candidates for May 2002 Graduation-begin submitting Senior Record Checks to Office of Registrar

Deadline for submitting Senior Record Checks to the Office of Registrar for May 2002 Graduation

Last day to change from credit to audit or audit to credit
Mid-Term Examinations

Mid-Term Grades due in the Office of Registrar
Academic Advisement Period

Pre-registration for Spring 2002
Thanksgiving Recess Begins

Classes Resume

Last day to withdraw from classes and AAMU with a "W"
Final Examination
Holiday Recess Begins at 5:00 p.m. (students \& faculty)
Grades due in the Office of Registrar (12:00 noon)

December 21, 2001

December 31, 2001
Official Close of Fall Semester 2001

## Spring Semester 2002

January 3, 2002

January 4, 2002
January 6, 2002

January 7 - 8, 2002

January 9 - 10, 2002

January 15, 2002

January 16, 2002

January 17, 2002

January 18, 2002
January 21, 2002
January 30, 2002

Eebruary 4-8, 2002

February 13-15, 2002

February 25, 2002
March 11-16, 2002
March 18, 2002

March 18 - 22, 2002

Staff Return

Faculty Return; School Workshops

New Freshman Arrive

Operation Jump Start Registration
All classifications register in respective Schools. See Financial Aid Officer only if there are major problems.

All Class Instruction Begins including Evening and Graduate Late Registration; Drop-Add Begins

Graduate Students; Oral Thesis Examination begins; Begin submitting applications for Comprehensive Examination; Begin submitting applications for May 2002 Graduation

Last Day to Register or Add Courses
$1^{\text {st }}$ Day Record Check for July 2002 Graduation; Begin submitting Senior Record Checks

Last Day to Apply for English Competency Test
Martin Luther King, Jr. Holiday
Deadline for submitting Senior Record Checks for July 2002 Graduation; Change from Credit to Audit and Audit to Credit
Graduate Students: Deadline for submitting application for Comprehensive Examination; Deadline for submitting application for May 2002 Graduation

Financial Aid Week

Pre-Registration for Regular Session; Summer I and II (See Summer Schedule Below)

Last Day to Apply for Graduate Comprehensive Exams
Mid-Term Examinations

Mid-Term grades due in the Office of Registrar

Comprehensive Examination (Graduate Students)

March 25, 2002
March 27, 2002
March 29, 2002

April 1, 2002

April 8 - 12, 2002

April 11, 2002
April 19, 2002

April 22, 2002
April 22 - 24, 2002
April 26, 2002

May 1, 2002

May 6 - 10, 2002
May 11, 2002
May 13, 2002

May 27, 2002
May 31, 2002

Spring Recess Begins 8:00 a.m. (Students \& Faculty)
Spring Recess Begins 8:00 a.m. (Staff)

## Holiday Observed

Classes Resume - $1^{\text {st }}$ Day of Record Check submission to Office of the Registrar for December 2002 Graduates

Academic Advisement for Fall 2002

Academic Honors Day Convocation
Deadline for submitting Senior Record Checks for Fall 2002 (December Graduates)

Last Day to Withdraw from classes with grade of "W" prior to final exams.
Pre-Registration for Fall 2002
Senior grades due in Office of the Registrar; Grades for Graduate Students due in Graduate Office

Graduate Students begin submitting applications for July 2002 Graduation and summer Comprehensive Examination

Final Exams

May 2002 Graduation - 9:00 a.m. Louis Crews Stadium
Grades Due in Office of the Registrar

## Memorial Day Holiday Observed

Graduate Students deadline to submit applications for July 2002 Graduation and summer Comprehensive Examination

Official Close of Spring Semester 2002

## Mini Summer I 2002

May 31, 2002
June 3, 2002

June 5, 2002

Registration for Summer I and/or II
Classes Begin for Summer I Session; Late registration fee becomes effective; Drop/Add period begins

Last Day to register or add courses; Change from Credit to Audit and Audit to Credit

June 7, 2002
June 20, 2002
June 27, 2002

June 28, 2002
July 1, 2002

July 4, 2002
July 5, 2002

July 8, 2002

July 17, 2002
July 23, 2002
July 24, 2002
July 26, 2002

May 30 - 31, 2002
June 3, 2002

June 5, 2002
June 7, 2002
June 28, 2002
July 2, 2002
July 4, 2002
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Deadline to Apply for July Graduation
Last Day to Withdraw with grade of "W"
Final Exams for Summer I Session

## Mini Summer II 2002

## Registration for Summer II Session

Classes Begin for Summer II Session; Late Registration; Drop/Add period begins

## July $4^{\text {th }}$ Holiday

Last Day to Add/Drop courses (Session II)
Classes Resume
Last Day to Withdraw with grade of "W"
Senior Grades Due in Office of the Registrar by Noon
Final Exams for Summer II Session
Commencement - 9:00 a.m. T.M. Elmore Health Sciences Building

## Regular Summer Semester 2002

Registration

All Class Instruction Begins - Late registration fee becomes effective; Drop/Add period begins

Last Day to Register or Add courses
Deadline to Apply for Graduation July 2002
Deadline to Apply for Comprehensive Exam
July $4^{\text {th }}$ Recess begins after last class
July $4^{\text {th }}$ Holiday

July 8, 2002
July 17, 2002
July 23, 2002

July 23 - 24, 2002
July 26, 2002

July 29, 2002
July 31, 2002

Classes Resume
Last Day to Withdraw with grade of "W"
Senior Grades due in Office of the Registrar
Final Examinations
Commencement - 9:00 a.m. T. M. Elmore Health Sciences Building
Grades due in Office of the Registrar by 5:00 p.m.
Official Close of Summer Term

## Fall Semester 2002

August 16, 2002
August 18, 2002
August 19, 2002
August 24, 2002
August 26, 2002

September 2, 2002
September 3, 2002

September 6, 2002
September 11, 2002

September 27, 2002

October 14 - 19, 2002
October 22, 2002
November 20, 2002
November 23, 2002
November 26, 2002
December 9 - 14, 2002
December 13, 2002
December 16, 2002

December 20, 2002

December 31, 2002

Faculty/Staff Conference
Freshman Arrive; Operation Jump Start Begins
Registration for all Students
Classes Begin
All Classes in Session

## Labor Day Holiday

Classes Resume (Including Evening and Graduate); Drop/Add period begins; Late Registration Begins

Registration Ends
Candidates for May 2003 Graduation - Begin submitting Senior Record Checks to Office of the Registrar

Deadline for submitting Senior Record Checks to the Office of the Registrar for May 2003 Graduation

Mid-Term Examinations

Mid-Term Grades due in the Office of the Registrar
Thanksgiving Recess Begins
Classes Resume
Last Day to Withdraw from AAMU with a "W"
Final Exams
Holiday Recess begins at 5:00 p.m. (Students and Faculty)
Grades due in the Office of the Registrar (12:00 Noon)
Holiday Recess begins at 5:00 p.m. (Staff)
Official Close of Fall Semester 2002

## GENERAL INFORMATION


#### Abstract

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, which helped to garner financial support from the Slater and Peabody Funds and private contributors. Under the second Morrill Act of 1890, AAMU became a land grant institution and moved to its present location in 1891.

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


## Mission

Alabama A\&M University reflects the uniqueness of the traditional land-grant institutions combining, education, research, and service in professional, vocational and liberal arts fields. AAMU provides baccalaureate, master's and doctoral level degrees that are compatible with the times to qualified, capable individuals who are interested in further developing their technical, professional, and scholastic skills and competencies. It operates in the three-fold function of teaching, research, and extension public service. A center of substance and excellence, AAMU provides a setting for the emergence of scholars, leaders, thinkers and other contributors to society. Specifically, AAMU is committed to (1) excellence in education and creation of a scholarly environment in which inquiring and discriminating minds may be nourished; (2) the education of students for effective participation in local, state, regional, national, and international societies; (3) the search for new knowledge through research and its applications; (4) the provision of a comprehensive outreach program designed to meet the changing needs of the larger community; and (5) programs necessary to adequately address the major needs or problems of capable students who have experienced limited access to education. In cooperation with businesses, industrial and governmental agencies, and other institutions, AAMU provides a laboratory where theory is put into practice in a productive environment.

## Organization

AAMU has five schools: School of Agricultural and Environmental Sciences, School of Arts and Sciences, School of Business, School of Education, and School of Engineering and Technology. There is also a University College, which coordinates freshmen studies general education requirements. The dean of Graduate Studies coordinates programs for students seeking post baccalaureate degrees.

## Facilities

The approximately 2000-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.

## Accreditations and Affiliations

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

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

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

## Adherence to ADA Guidelines

Alabama A\&M University provides equal access to all educational programs. It 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 backside 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. For unconditional admission high school graduates must have earned a score of 18 ACT/equivalent SAT; maintained a grade point average of " C " in the following subjects: English, mathematics, science, history, and political science. Upon notification of admission to AAMU, the applicant will receive a letter and card of acceptance. No student should report to AAMU for registration without having received the card of acceptance. Alabama students must have passed all three parts of the high school graduation examination.
- High School Equivalency (GED). For unconditional admission the applicant must have earned an average score of 48. Transcripts of last attendance in high school may be required. Students must have a score of at least 18 on the ACT/Equivalent SAT. Students 26 years or older are exempt from college entrance examinations.
- High School Accelerated Program. Students must have completed their sophomore or junior year of high school in order to be admitted to the high school accelerated program.
- Transfer Students. Students transferring from other postsecondary institutions must have maintained a cumulative GPA of 2.0 ("C") at the last institution attended. Students who have 12 semester hours or equivalent quarter hours of acceptable academic credit at the college or university level may be admitted to AAMU as transfer students. Students with fewer than 12 semester hours will be admitted as high school graduates; however appropriate hours will count toward the AAMU degree.
- Transfer Students from Alabama Two-Year Colleges. A student transferring from an Alabama two- year college may choose to fulfill the degree requirements of the AAMU Bulletin which was in effect at the time of the student's initial enrollment at the Alabama two-year institution, provided that the time lapse between matriculation at the two year institution and AAMU is not more than one year. Students intending to transfer to AAMU are encouraged to consult with their advisors and obtain a STARS guide from the AGSC/STARS Website, www.stars.troyst.edu
- 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.
- Visiting Student Programs. A cooperative arrangement exists with the University of Alabama in Huntsville, Athens State University, John C. Calhoun State Community College, Oakwood College and Alabama A\&M University, whereby a student at any of the participating institutions may request permission to attend a class at one of the other schools. Conditions governing the granting of permission include the following:

1. The student must be enrolled full-time.
2. His/her total load must not exceed the 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 schools 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. Freshman and entering international students must provide an affidavit of financial support. Students must have maintained a grade point average of "C" in core courses, must have earned five passes on a national or a local examination; and must have attained a minimum score of 500 on the TOEFL (Test of English as a Foreign Language). A letter of recommendation from an applicant's principal or college advisor is also required.
- Special Students. Persons who wish to pursue certain courses without reference to a degree may apply for admission as special students. The Director of Admissions will review applications for such persons. A student may take a maximum of 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 $\$ 10.00$ non-refundable application fee. Only a cashier's check, traveler's check, or money order made payable to Alabama A\&M University will be accepted.
- Request that an official copy of the high school transcript or General Education Development (GED) test results be forwarded to the Office of Admissions.
- Request official test results for American College Test (ACT) or Scholastic AptitudeTest (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) 851-5245 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 |
| Spring |  |
| July 15 |  |
| Summer | December 1 |
|  | May 15 |

## Special Programs

## Accelerated Program for High School Students

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

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


## Conditional Admission

Transfer and special students who are admitted to AAMU 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/her ineligibility to register for the next semester.

## TRANSFER OF CREDITS

## Entering Students

## From U.S. Colleges and Universities

Students who transfer from another four-year or two-year institution must submit in advance for acceptance, transcripts of all previous work completed on the college level. Such transcripts must be sent directly from the institution at which the work was completed. Academic work 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/she is able to pursue successfully the curriculum in which he/she is enrolled.

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

## Credit by Examination

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

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

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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 workrelated learning, documented by employer/examination and/or approved by the major area, in accordance with established departmental criteria for non-traditional credit, may be awarded nine to eighteen academic credit hours, respectively.

## Other Non-Collegiate Sponsored Instruction

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

## Continuing Students

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

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

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

## Visiting Student Program

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.

## International Institutions

Post-secondary credits earned from international institutions, which are patterned after the British or other Non-American system of grading, must be evaluated by the World Education Services, Inc., to be accepted by AAMU for admission or transfer. It is the responsibility of the student to execute, request, and pay the cost of such evaluations.

## Correspondence Courses

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

1. No more than one correspondence course will be permitted during any semester or term. A student will be considered enrolled in a correspondence course from the time he/she receives permission to enroll until the Office of the Registrar receives a grade or evidence of discontinuation.
2. Correspondence course hours will be included in the computation of the student's load for the duration of the enrollment in such course, and hence 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


#### Abstract

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


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

Each student registering for courses in any term must submit to the Office of the Registrar, with the approval of the student's academic advisor, a list of courses and sections, identified by call numbers, for which registration is sought. AAMU will attempt to meet the curricular needs indicated by the student and confirmed by the advisor, as long as the course selection conforms 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 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/Vice President for Academic Affairs for appropriate retroactive registration, but only upon the recommendation of the advisor, the instructor from whom credit is sought, and the dean of the school in which the student is enrolled. It is to be noted that such permission is highly unusual, since it is illegal for an instructor to allow a student to remain in his/her class after the initial roster has been issued, if the student is not properly enrolled.

## Auditing Courses

Students who do not wish to register in courses for credit may be permitted to register as auditors under the conditions that they pay the regular audit fees of $\$ 100.00$ per hour (no additional fee for students registered for a full-time credit load), obtain the consent of the instructor, and audit only courses for which there are adequate classroom facilities. Full-time students must obtain the consent of their advisors. Skill and laboratory courses are
not open for auditors.
Permission to and registration for auditing courses shall be filed in the Office of the Registrar. Regular registration procedures are to be followed after permission has been granted. The privileges of an auditor in a course are limited to attending and listening. The auditor assumes no obligation to do any work in the course. Auditors do
not submit any work and are not required to take any tests or examinations nor receive grades on any part of the course.

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

## Class Schedule Changes

## Dropping/Adding Courses

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

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

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

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: $\quad$ 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: $\quad$ Continue attending class.

## Procedures for Dropping and Adding Courses

Step 1: $\quad$ 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: $\quad$ Secure the signature of the student's advisor.
Step 5: $\quad$ Take form to the Office of the Registrar for processing.
Step 6: $\quad$ Take the form to the cashier for payment of fee.

## WITHDRAWAL FROM THE UNIVERSITY

When a student finds it necessary to discontinue his/her enrollment at any time other than at the end of a semester or summer term, he/she must complete a withdrawal form obtained from the Office of Counseling and Development. 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/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: $\quad$ Secure and complete Withdrawal Clearance form. Forms are available in the Office of Special Student Services.

Step 2: Complete exit interview with Office of Special Student Services.
Step 3: File completed Withdrawal Clearance form with the Office of the Registrar.

## 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, three summer terms. Each semester must include a minimum of 15 weeks of instruction.

## Summer Sessions

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

## Classification of Students

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

| Classification | Cumulative Hours Earned |
| :--- | :---: |
| Freshman | $0-30$ |
| Sophomores | $31-63$ |
| Juniors | $64-94$ |
| Seniors | 95 or more |

Course Loads

## Full-Time v. Part-Time

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

## Maximum Course Loads

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

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

## Class Attendance Policy

## Unexcused Absences

A student is permitted one unexcused absence for each credit hour generated by a class. For example, two absences are allowed in a two-hour class. No explanation is required for unexcused absences.

## Excused Absences

Excused absences can be obtained, upon presenting documentation to the Office of Counseling and Development, for the following reasons:

- Personal Illness or Illness of a Family Member
- Death in the Family
- Subpoena for Court Appearance
- Emergencies or Circumstances over which the Student Has No Immediate Control.
- Appearance at official university functions/meetings


## Faculty Responsibilities

- Faculty will maintain accurate attendance records.
- Each student who exceeds the number of unexcused absences will be counseled by the faculty member regarding any applicable penalties as stated in the course syllabus.
- Faculty members are required to accept official excused absences within reason and make appropriate arrangements for students to compensate for assignments, examinations, etc. that are missed due to such absences.


## Student Responsibilities

- Class attendance is expected as well as a privilege, so students are required to be punctual and prepared.
- Learning experiences proceed at such a rapid pace that attendance is necessary, if students are to acquire the knowledge and develop the competence, skills, and strategies that are needed to be successful in their endeavors.
- Students are required to carry out all assigned work and to take examinations and quizzes during the class period designated.
- Failure to take examinations and quizzes, and/or to carry out assignments at the designated times may result in an appropriate reduction in the student's final grade for the course. Exceptions may be made in the case of excused absences.
- Arrangements for make-up work, due to excused absences, must be initiated by the student.


## 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; 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: $A=4$; $B$ $=3 ; \mathrm{C}=2 ; \mathrm{D}=1 ; \mathrm{F}=0$.

Grades of I, P, 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 Gours Grade Grade Point Points

| A |  | 4 | x | 3 | $=$ | 12 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| B |  | 3 | x | 4 | = | 12 |  |
| C |  | 2 | x | 3 | = | 6 |  |
| D |  | 1 | X | 2 | = | 2 |  |
| F |  | 0 | x | 3 | = | 0 |  |
| W |  | 0 | x | 0 | = | $\underline{0}$ |  |
|  | TOTAL |  |  | 15 | = | 32 | 2.13 |

Grade points $\div$ hours attempted $=32 / 15=2.13$

## Missing Grades

A missing grade must be received in the Office of the Registrar within 45 days immediately following the grading period 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 to be addressed to the Vice President for Academic Affairs.
3. Requests for "I" grade changes may be made by faculty members directly to the Office of the Registrar on forms provided for that purpose.
4. Requests for grade corrections must be submitted to the Office of the Registrar by the end of the semester after the incorrect grade was submitted.

## Incomplete Grades

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

Students may obtain credit for courses in which their grades are "incomplete" only by completing the work of the course in a satisfactory manner. Within one year of the date the " $I$ " is awarded or the end of the next term that course is offered. If this is not done, the grade in the course automatically bemuses 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 vice president for academic affairs. Incomplete grades for graduating seniors must be removed by October 1 for December graduates, April 1 for May, June 15 for summer graduates.

## 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/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/she receives a grade of " $F$ " by his/her advisor, major department chairperson or school dean.

## Academic Bankruptcy

A student may petition the Academic Appeals Committee for academic bankruptcy after completing two or more semesters at AAMU. All work completed, however, remains on the student's transcript and records and will be designated as work not to be included in the computation of the student's 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 semesters; however, a student may not request a grade-by-grade or course-by-course 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 AAMU. For purposes of applying this policy, the student's academic career shall include all undergraduate work attempted.

## Academic Transcripts

In compliance with the Family Educational Rights and Privacy Act, AAMU does not release transcripts of a student's work at AAMU, except upon the student's written request. A student or former student who desires a transcript of his/her record from AAMU must make this request in writing to the Office of the Registrar. Students or former students requesting transcripts should state all possible names under which their records may be located.

GENERAL INFORMATION
Telephone requests cannot be honored. A student may secure an unofficial transcript for his/her use, but official transcripts must be sent directly to other institutions, organizations, companies, and other interested parties. Official transcripts cannot normally be hand-carried without prior permission of the receiving institution. If this permission
is granted, however, the transcript must be sealed in an envelope and marked "Issued to Student."

Each student is entitled to one transcript without charge. A fee of $\$ 3.00$ is charged for each additional transcript, whether it is an official or unofficial copy. Transcripts are not issued to or for students who have outstanding 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 guardian's named on his/her registration forms. Grades are mailed to the persons so listed.

No-option "directory information" may be released by AAMU without the student's written permission. No-option "directory information" includes the student's name and enrollment status. The student must at the time of registration indicate if he/she 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/her cumulative grade point average and credit hours fall within the classification system below.

| Classification | Cumulative Grade <br> Point Average |
| :--- | :---: |
| Freshman | 1.85 |
| Sophomore | 1.90 |
| Junior | 1.95 |
| Senior | 2.00 |

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

## Academic Probation

A student will be placed on academic probation when his/her cumulative grade point average fails to meet the standard for satisfactory academic progress described above. Students who are placed on academic probation will have to raise their cumulative GPA to that required for satisfactory academic progress to end probation. To avoid academic suspension, a student on probation must earn a GPA each semester equal to or above the level required for satisfactory academic progress. During the period of academic probation, students will be allowed to enroll in a maximum of 12 semester hours. Students on probation who register for more than 12 credit hours will not retain credit for hours above 12. No student on academic probation may hold office in any campus organization, participate in any organized non-class off-campus trip, or officially represent AAMU. This regulation does not apply to participation in activities conducted completely on campus. Participation in such activities, however, may be required to be very limited in scope. A student on academic probation may be ineligible to receive financial aid, and could be required to repay aid that was previously awarded. Questions related to financial aid should be directed to the Office of Financial Aid.

## Academic Suspension

A student who has been placed on academic probation and fails to acquire the minimum GPA for satisfactory academic progress each semester 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.

## 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/ 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.

## Reinstatement

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

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

## Academic 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.

\section*{Award Cumulative GPA Minimum Credit Hours at AMU <br> | 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/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.

## 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.

Written Composition. A grade of $\underline{\mathrm{C}}$ or better is required in each of the following courses.

$$
\begin{array}{ll}
\text { ENG } 101 / 101 \mathrm{H} / 103 & \text { Composition I } \\
\text { ENG } 102 / 102 \mathrm{H} / 104 & \text { Composition II }
\end{array}
$$

Humanities and Fine Arts. Requirements include at least 12 semester hours in humanities with a minimum of $\mathbf{3}$ semester hours in the fine arts (performance courses excluded), $\mathbf{3}$ 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 |  | Literature |  |
| :--- | :--- | :--- | :--- |
|  |  |  |  |
| ART 101 | Art Appreciation | ENG 201 | Survey of English Literature I |
| MUS 101 | Music Appreciation | ENG 202 | Survey of English Literature II |
| ART 220 | History of Art I | ENG 203 | World Literature I |
| ART 221 | History of Art II | ENG 204 | World Literature II |

## Other Humanities

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

Natural/Physical Sciences and Mathematics. Requirements include at least $\mathbf{1 1}$ semester hours with at least $\mathbf{3}$ semester hours in mathematics at the pre-calculus algebra level or higher and at least $\mathbf{8}$ 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 125 | Calculus I |
| :--- | :--- | :--- | :--- |
| MTH 112 | Pre-Calculus Algebra | MTH 126 | Calculus II |
| MTH 113 | Pre-Calculus Trigonometry | MTH 145 | Honors Calculus I |
| MTH 120 | Calculus and Its Applications | MTH 146 | Honors Calculus II |
|  |  | MTH 227 | Calculus III |

## Natural/Physical Sciences

BIO 101/101L General Biology I, Lab I BIO 102/102L General Biology II, Lab II
CHE 101/101L General Chemistry I, Lab I
CHE 102/102L General 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 |

History, Social, and Behavioral Sciences. Requirements include $\mathbf{1 2}$ semester hours with at least $\mathbf{3}$ hours in history, 3 hours in economics, and at least $\mathbf{6}$ 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 Science

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

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

## Other Requirements.

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

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

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

FAS 101 Food and Survival of Man
*HED 101 Personal and Community Health
NHM 103 Nutrition Today
Physical Education Option. Select any two of the following one-semester credit hour courses.

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

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

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

| CMP 101 | Fundamentals of Computer and Information Systems |
| :--- | :--- |
| CMP 102 | Introduction to Programming |
| CMP 201 | Personal Computers |
| MGT 213 | Computer Applications in Business |

## 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-togroup 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.

## 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 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. As a rule, major-specific courses cannot be substituted for general education courses (i.e., Principles of Teaching for Art Appreciation).
7. 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.).
8. Course substitutions for graduating seniors should be approved by September 1 for December graduates and by February 11 for May and July graduates.

## 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 $A A M U$ 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 $A A M U$ Bulletin in use at the time of re-entry. Students may move forward to a more recent $A A M U$ 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 Registration by the following dates:

| Graduation Date | Filing Date |
| :---: | :--- |
| May | Third Week of September |
| July | Third Week of January |
| December | Third Week of April |

## Multiple Majors and Second Degrees

AAMU does not normally award a student a second baccalaureate from the school in which the first degree was earned, even if the student completes more than one program leading to a degree. A student who has received one baccalaureate degree may receive a second one from another school (or from the same school) upon (a) meeting all requirements for both degrees, and (b) presenting for the second-degree at least 30 credit hours in addition to those presented for the first degree. The second bachelor's degree will be awarded in a subsequent semester from the first.

## Summary of General Graduation Requirements

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

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


## UNIVERSITY COLLEGE

Dr. Thomas J. McAlpine, Interim Dean
(256) 851-5753

## Mission

The mission of University College is to build the foundation for optimal learning, essential to first-time freshmen, new and potential students. The College serves as the portal of entry for all freshmen and new students; provides academic and support services to help students succeed in their educational pursuits; and certifies lowerdivision students' completion of requirements for entrance into their major departments. The general objectives

GENERAL INFORMATION are (a) to assist pre-college and currently enrolled students in acquiring the skills and competencies necessary for success in college; (b) to assist freshmen, and other students who have not officially declared majors, in a systematic progression through the freshman core curriculum by providing a comprehensive and effective advising system; (c) to ensure students complete the university-designated program of study and established exit criteria prior to release from University College; (d) to provide instructional programs to meet the varied intellectual needs of students; and (e) to provide a caring, nurturing and communing environment, where relevant skills and competencies, collegiate adjustments, career goals, and education plans - commensurate with abilities and interest are actualized.

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

## New Student Orientation Program

## Operation Jump-Start

Freshmen and new students, who transfer fewer than 31 semester credit hours, must take ORI 101, Survival Skills for University Life, and participate in Operation Jump-Start (OJS) no later than the end of their freshman year. ORI 101, required for graduation, is offered only during the fall and spring semesters, and is only taught in conjunction with Operation Jump-Start. Only those students who have paid the OJS fee will be able to enroll in ORI
101. For more information about OJS, contact the Director of the Academic Advising Center at (256) 851-5746.

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

## Operation Transition

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

## Freshman Core Curriculum

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

## University College Exit Requirements

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

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

## Freshman Core Test Battery (FCTB)

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

## Developmental Education Program

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

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

ENG 100 Developmental English - 3 hours. This course presents functional aid in preparing freshmen to enter Communication Skills I. It stresses fundamentals of the English language with practical use in writing. Students who pass Developmental English may proceed to Communication Skills

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I. Those who do not complete the course must re-enroll in it during the next semester in which they are enrolled at AAMU.

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

For additional information about the Developmental Education Program, contact the director at (256) 851-5780.

## Academic Advising Center

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

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

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

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

Testing Services Center<br>200 Buchanan Hall<br>(256) 851-5645

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

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

## TRIO/Special Programs

 Upward Bound and Student Support Services136 Buchanan Hall
(256) 851-5660

## 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.

## Adopt-a-Family

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

## Academic Assistance Program

100 Bibb Graves Hall
The Academic Assistance Program (AAP) is a support service, which provides individualized instruction and study guidance to undergraduate students experiencing academic difficulty in college courses. The program promotes an environment, which is conducive to enabling students to improve basic competencies in reading,

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writing, and mathematics on a flexible, self-paced basis. Additionally, the AAP provides traditional and nontraditional tutorial services to support classroom instruction in the general studies curriculum. The University College Computer Instruction Assistance Laboratory supports developmental and general education classes.

## HONORS PROGRAM

The Honors Program offers challenges and opportunities for academically talented students who are seeking to develop their full potential as scholars and as citizens. The Program provides creativity 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 of the classroom.
4. To enable qualified students to progress at an accelerated rate.
5. To maximize the opportunity for students to grow intellectually through classroom activities, colloquia, research, and writing seminars; and to broaden and enhance their social and cultural experiences.
6. To encourage Honors Program students to participate in various activities at AAMU and to serve as classroom volunteers, peer counselors, teaching assistants, research assistants, laboratory assistants, and program assistants for major University functions.
7. To enhance the educational climate of AAMU, thereby stimulating all students to perform to their intellectual capacity.
8. To participate in cooperative linkages and collaborative agreements with graduate and professional schools at major universities across the nation and with industries seeking individuals who are highly trained.

## Honor's Program Admission

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

1. ACT score of 23 and above or SAT score of 1030 and above.
2. High school grade point average of 3.3 in academic courses for entering freshmen.
3. Second semester college freshmen with ACT scores of 21-22 (SAT 1025) may be considered for admission, if they have at least a 3.5 grade point average in a minimum of 12 semester credit hours of
regular academic courses completed at AAMU and a cumulative high school grade point average of 3.3.

Supporting data include the following:

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

## Program Requirements

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

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

| Freshman | 3.3 |
| :--- | :--- |
| Sophomore | 3.4 |
| Junior | 3.5 |
| Senior | 3.5 |

- Attend $90 \%$ of all regularly scheduled Honors Program meetings and $50 \%$ of all sponsored events.
- Must complete at least 20 hours of volunteer service to the community and, 20 hours of volunteer service to AAMU each semester (freshmen and sophomores); 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 12 semester hours per semester.
- Enroll in at least nine semester hours of honors coursework each semester as a freshman and sophomore, if available.
- Enroll in IDS 301 Honors Seminar 301 as a junior and must enroll in IDS 401 Senior Honor Project as a senior.
- Apply to a graduate or professional school prior to graduation from AAMU.
- Attend at least four non-athletic, University-sponsored forums, convocations, and other events each semester.

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Honors Seminar - 1 hour. These course places selected current events, issues and problems in perspective through an analysis of their origins and their development over time. Students will explore these events, issues, and problems in-depth with special emphasis given to those of particular interest to the class. Required of all junior-level Honors Program participants.

IDS 401 Senior Honors Project - 3 hours. This is a comprehensive culminating activity in which students demonstrate essential knowledge, skills, and appreciation of their field(s) of study. The nature of the project will depend on the discipline, (i.e., paintings, pottery, musical composition/recitals, original literary works, films/videotapes, and traditional investigative/ research projects). Research projects will be supervised by honors faculty and departmental faculty.

## Honors Courses

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

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

## Withdrawal

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

## Reinstatement

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

## RESIDENCY STATUS FOR IN-STATE TUITION

## Definition of Residency

For the purpose of assessing tuition and fees, AAMU classifies students as Alabama "residents" or "nonresidents." 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 student's residency status must be provided by the students. Residents of Alabama, as well as categories of non-residents hereinafter identified, may be enrolled upon payment of resident tuition and fees as follows:

1. (a) A student may register as an Alabama resident for tuition purposes only upon showing that he/she has been a resident of Alabama for a period of at least 12 months prior to initial registration.
(b) No emancipated minor or person 19 years of age or older shall be deemed to have gained or acquired Alabama residency status for tuition purposes while attending any educational institution in this state, in the absence of a clear demonstration that he/she in fact established residency in this state.
2. If a person is under 19 years of age and living with a parent or guardian, he/she may register as an Alabama resident for tuition purposes only upon showing that his/her parent(s) or guardian has been a bona fide resident of Alabama for a period of at least 12 months prior to initial registration.
3. A full-time faculty member of AAMU, his/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 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 12 months and has filed his/her Federal Personal Income Tax form jointly with a qualifying spouse for the tax year prior to the year in which the student is either admitted or registered for classes, is entitled to Alabama residency classification for tuition purposes.
7. International students shall be classified as non-resident students; provided; however, that an international 34

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student who is living in this country under a visa permitting the establishment of a permanent residence shall have the same privilege of qualifying for Alabama residency status for tuition purposes as a citizen of the United States.
8. Any Alabama resident student who remains in the state after his/her parent(s) or guardian (previously legal residents of Alabama or stationed in Alabama on military orders) move(s) from the state shall be entitled to remain classified as an Alabama resident student for tuition purposes as long as attendance is uninterrupted. Such students need not attend the summer session in order to render attendance uninterrupted.
9. In the event that a bona fide resident of Alabama is appointed as guardian of a non-resident minor, such minor will not be permitted to register as an Alabama resident for tuition purposes until the expiration of one year from the date of court appointment, and then only upon proper evidence that such appointment was not made to avoid payment of non-resident fees.
10. Students determined to be eligible for resident tuition purposes by an Alabama state-supported college or university retain their resident eligibility for one academic year upon transfer to AAMU.
11. Any student granted status as an Alabama resident student for tuition purposes whose status is based on a sworn statement, which is false, is subject to disciplinary sanctions as may be imposed by AAMU.

## Changes in Residence Status

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

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

| Fall Semester | July 15 |
| :--- | :--- |
| Spring Semester | November 15 |
| Summer Sessions | April 15 |

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

## Appeals of Residency Status

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

## FINANCIAL INFORMATION

## Tuition/Fees/Deposits

## Tuition.

Tuition is set for each year by AAMU Board of Trustees. For up-to-date information on tuition, contact the Office of Admissions or Office of Financial Aid.

## Fees and Deposits

Add/Drop (per form) ..... \$ 25.00
*Application (Undergraduate State/Non-State Resident) ..... 10.00
*Application (Undergraduate International Students) ..... 25.00
Audit (per hour) ..... 100.00
*Campus Parking Permit (Students per year) ..... 10.00
*Campus Parking Permit (Students, Summer) ..... 5.00
Cooperative Education (Undergraduate State Resident) ..... 300.00
Cooperative Education (Undergraduate Non-State Resident) ..... 600.00
English Competency Examination ..... 15.00
*Extended Payment Plan (Per Transaction). ..... 25.00
Graduation (Undergraduate) ..... 30.00
*ID Card Replacement (Non-Boarding Students) ..... 25.00
Key Deposit (Boarding Students) ..... 6.00
Late Registration ..... 50.00
*Matriculation (Undergraduate) ..... 100.00
*Meal/ID Card Replacement (Boarding Students) ..... 50.00
*Re-Admission (Undergraduate State/Non-State Resident ..... 10.00
*Re-Admission (Undergraduate International Students) ..... 15.00
**Room Reservation ..... 100.00
Technology ..... 50.00
*Transcript (each) ..... 3.00
*Non-Refundable

## International Students

All international students must leave a deposit with the Cashier's/Financial Services Office of an amount equal to at least one semester's tuition and fees (based on full-time enrollment) each semester, except the last semester of enrollment.

All first-time international students will be required to purchase and maintain mandatory health insurance
at $\$ 600.00$ per year.

## Housing and Meals

## Residence Hall Rates, Per Semester

$$
\begin{aligned}
& \text { West Campus Living/Learning Complex . . . . . . . . . . . . . . . . . . . . . . . . . . . . } 11,300.00 \\
& \text { Foster Living/Learning Complex . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1,300.00 } \\
& \text { All Other Dormitories . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . } 700.00 \\
& \text { Board (Three meals per day, seven days per week) . . . . . . . . . . . . . . . . . . . . . . . . . } 925.00 \\
& \quad \text { (Three meals per day six days a week) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . } 875.00
\end{aligned}
$$

Residential Life and Housing offers a variety of on-campus accommodations. The cost per semester ranges from $\$ 700$ to $\$ 1300$ for double occupancy. Single occupancy rooms are available at double the rate. All rooms are equipped with telephone and cable. A separate charge is assessed for these services. For detailed information contact Housing (256) 851-5797.

## Meal Services

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

$$
\begin{array}{ll}
\text { Option 1: } 18 \text { meals per week per semester } & \$ 875.00 \\
\text { Option 2: } 21 \text { meals per week per semester } & \$ 950.00
\end{array}
$$

All students living in the residence halls are required to purchase a meal plan. The meal plan is accessed through the purchase of a meal I/D card. The meal I/D card is not exchangeable or transferable and must be used during the period for which it is issued. This card is used throughout a student's enrollment at AAMU. It must, however, be validated each semester. A $\$ 50.00$ replacement fee will be charged for a lost or damaged meal I/D card. This charge must be paid directly to the Cashier's Office and will not be added to students' accounts.

Students who reside off-campus may purchase a meal I/D card at the same rate as those who reside on campus and must adhere to the same requirements. For Detailed Information contact Debit Card Office (256) 851-5185.

## Books and Supplies

Textbooks may be purchased from AAMU bookstore located in the Ralph H. Lee Student Center. Book costs vary but tend to average about $\$ 700.00$ per semester. All payments to the bookstore should be made by cash, cashier's checks, MasterCard, VISA, American Express, or Discover, credit cards, Bulldog Express card, or traveler's checks.

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

Cashier
Alabama A\&M University
Post Office Box 324

Bills may be paid in the Cashier's Department located in room 105-A Patton Hall Building between 8:00 a.m. and 5:00 p.m., Monday through Friday.

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

When paying by MasterCard or VISA credit cards, the student must have approved permission by the parent before presenting a card bearing the parent's name. AAMU reserves the right to contact any cardholder.

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

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

## Restrictions Due to Indebtedness to University

## Registration

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.

## Transcripts

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

## Refund Policies

## Tuition and Fees

The tuition and fees are refundable in accordance with the following schedule when a student withdraws from AAMU after completing the registration process:

Fall and Spring Semesters
From the first day of class through the seventh calendar day ..... 90\%
From the eighth day of class through the fourteenth calendar day ..... 80\%
From the fifteenth day of class to the twenty-first calendar day ..... 70\%
From the twenty-second 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 canceled by AAMU.

Fees paid by MasterCard/VISA will be credited to the customer's card upon withdrawal from a class or withdrawal from AAMU. (No Exceptions)

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

## Disciplinary Suspension

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

## Room Rent and Board

Withdrawing from the Residence Hall, Only. Students withdrawing from the residence hall prior to officially registering will not be charged room and board. Students withdrawing from the residence hall after registration will receive only a board adjustment. The entire room deposit fee is non-refundable.

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

Before the fourth full week of classes of the unexpended portion of the rent for residence
hall space . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 75\%
After the fourth full week of classes to the end of the semester, of the unexpended portion of the rent for residence hall space $50 \%$

The unused portion of the meal ticket will be refunded upon officially withdrawing from AAMU or for other authorized reasons.

## Refunds are not given to students residing in residence halls without their withdrawal from AAMU.

## Fees paid by MasterCard/VISA Card will be credited to the customer's card upon withdrawal from a class or withdrawal from AAMU. (NO EXCEPTIONS)

The application for campus housing and the subsequent room assignment is a contract between AAMU and the student for a given period. Therefore, refunds will be made for room rent only in the case of extreme emergencies. If a refund is granted for room rent, the amount will be determined at the time of withdrawal. All
refunds will be made via check.
If you are responsible for returning grant funds, you do not have to return the full amount. The law provides that you are not required to return 50 percent of the grant assistance that you receive that it is your responsibility to repay. Arrangement for grant overpayment must be made with AAMU or the Department of Education.

## FINANCIAL AID POLICIES AND PROCEDURES

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

## Types of Aid

## Federal Aid

- Federal Perkins Loan Program. The Federal Perkins Loan is a low interest (5 percent) loan designed for both undergraduate and graduate students with exceptional financial need. The total amount a student can borrow as an undergraduate is $\$ 15,000$. Including any Federal Perkins Loans borrowed as an undergraduate; students may borrow up to $\$ 30,000$ as a graduate or professional student. Students must repay this loan to Alabama A\&M University.
- Federal Work-Study Program. The Federal Work-Study Program provides jobs for undergraduate and graduate students with financial need, allowing them to earn money to help pay educational expenses. The program encourages community service work and work related to students' course of study. Students total Federal Work-Study award depends on when they apply, their level of need, and the funding level of their institution.
- Federal Supplemental Educational Opportunity Grant (FSEOG). The Federal Supplemental Educational Opportunity Grant is for undergraduates with exceptional financial need (lowest Expected Family Contributions) 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 that are pursuing a second bachelor's degree are not eligible for the grant.
- Federal Pell Grant. A Federal Pell Grant, unlike a loan, does not have to be repaid. Pell Grants are awarded only to undergraduate students who have not earned a bachelor's or professional degree. To determine eligibility, the U.S. Department of Education uses a standard formula, established by Congress, to evaluate the information students report when they apply. The maximum award for the 2000-01 award year was $\$ 3,700$. Awards for each year depend on program funding.
- Family Federal Education Loans. FFEL Stafford Loans are either subsidized or unsubsidized. A subsidized loan is awarded on the basis of financial need. Borrowers will not be charged interest before beginning repayment or during authorized periods of deferment. Loan money must first be used to pay tuition and fees, room and board, and other school charges. Maximum loans are $\$ 23,000$ for all undergraduate work or $\$ 65,500$ for both undergraduate and graduate work. Borrowers must repay this money beginning six months after the borrower ceases attendance at AAMU and extending over a period of up to ten years.

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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.

## $\underline{\text { State Aid }}$

- Alabama Student Assistance Program (State Student Incentive Grant 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 SSIG program.
- Alabama National Guard Education Assistance Program. A state program designed to provide financial assistance to Alabama National Guard members who are also residents of the state of Alabama, this purpose is for undergraduate and graduate education 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.
- Institutional Student Employment Program (ISEP). 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.
- Have a financial aid officer at each of the postsecondary schools previously attended send a certified copy of a financial aid transcript by Alabama A\&M University's Office of Student Financial Aid. Aid cannot be granted until the financial aid transcript has been received.
- Complete and submit the Free Application for Federal Student Aid (FAFSA) to the U.S. Department of 42

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Education, preferably before March 1. Submit as early as possible in order to be eligible for limited forms of aid such as FSEOG and Perkins.

- If needed, submit supporting documents required to verify the accuracy of the data to AAMU's Office of Financial Aid.


## Maintaining Eligibility

Alabama A\&M University is required by federal law (34 CFR 668.16) to define and enforce standards of Satisfactory Academic Progress. (See page 17) 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 SSIG Program)
Federal Parent PLUS Loans
Federal Stafford Student Loans (Subsidized and Unsubsidized)
Federal Work-Study
Federal Perkins Loans

## J.F. DRAKE MEMORIAL LEARNING RESOURCES CENTER (LIBRARY)

The Joseph F. Drake Memorial Learning Resources Center/Library, named in recognition of Alabama A\&M University's fourth president, 1927 to 1962, was dedicated in 1968. The Joseph F. Drake Memorial Learning Resources Center (LRC) became the Learning Resources Center in September of 1973 with the merger of the traditional library and the media center. The LRC makes available media materials such as videotapes, films, filmstrips, audio recordings, slides, and transparencies as well as manuscripts, books journals, government
publications, the Internet, e-mail access, and newspapers within a central location. A computer lab, online information retrieval, EDU 104 Bibliographic Instruction course, library orientation and tours, as well as Online Public Access Catalog (OPAC) are among the state-of-the-art services and resources offered by the LRC.

The LRC supports the curricular and research needs of AAMU community through the development of pertinent collections and the provision of services designed to facilitate access to information. The principal research collections number more than 400,000 volumes and more than 1,800 journal titles as well as videocassettes, audio cassettes, and compact discs which are housed in a centrally located facility. The interior arrangement allows easy access to all resources and services and will seat approximately 1,000 patrons.

## Resources and Services

Reference \& Information Services is responsible for providing a variety of services to assist AAMU community with its information needs, using print and electronic resources. Located on the second floor of the LRC, this unit houses the main reference collection, including encyclopedias, dictionaries, atlases, indexes and bibliographies. The physical collection contains materials that range from general background information to items presenting a more scholarly treatment of topics. Materials in this collection are non-circulating; however, a copying machine is available for duplicating materials.

AAMU provides essential services such as library instruction classes; individualized consultation to help develop and focus research strategies; and subscriptions to 76 Internet databases. The databases are accessible campus wide to faculty and students from campus workstations and provide full-text, abstracts, and indexes in a variety of disciplines. There is a nominal charge for copying from the Internet databases in Reference. Government documents are a part of the Reference Collection. The documents are located on the second floor in the Reference Area. The collection contains selected federal and state documents, agricultural experiment stations, and United Nations publications

The Serials Unit, located on the third floor of the LRC, houses current serial titles, newspapers, and microforms. The LRC currently has subscriptions to more than 1,800 titles. A flip-file in Serials displays the titles and their locations. Current issues of journals and newspapers are arranged alphabetically in the Serials Reading Room. Periodicals are non-circulating and must remain in the confines of the Reading Room. However, for convenience, a copy machine and microform reader-printers are available for duplicating materials.

The Interlibrary Loan Office, located on the second floor of the LRC, locates and acquires material from other libraries that either is not owned by or is missing from the LRC's collection, including books, journal article, and documents. Materials ordered through Interlibrary Loan are requested first from members of the Network of Alabama Academic Libraries (NAAL) Consortium. Consortium members are able to provide materials to the LRC at no cost. While the majority of the Interlibrary Loan requests are obtained at no cost, some requests for items in more specialized and technical fields may require the payment of a fee to obtain the material. The Interlibrary Loan Office will notify the patron that the requested material has arrived.

The LRC collection is arranged numerically according to the Dewey Decimal Classification System. It can be accessed utilizing the online Horizon Public Access Catalog. The Horizon Public Access Catalogs are located in the Reference Unit on the second floor of the LRC.

The AAMU Archives serves as the primary repository for historical records of AAMU, its academic research, teaching, and extension programs as well as faculty, administrators, staff, students, and alumni. It consists of materials collected to document and to promote knowledge and understanding of the origins, aims, programs, and goals of AAMU, as well as holdings documenting the history of the Tennessee Valley area and, to some extent, the state of Alabama. Highlights of the collection include college catalogs, yearbooks, early student publications,
departmental newsletters, theses, books, photographs of student, faculty, and campus activities, and other memorabilia. The materials in Archives are non-circulating. Archives are located on the first floor of the LRC.

The Special Collections encompasses the Black Collection, Children's Collection, International Collection, Textbook Collection and the Curriculum/State Textbook Collection. All collections are non-circulating except the Black Collection. The collections are located on the third floor of the LRC.

Information Technology Services, located on the first floor of the LRC, provides access to a diverse collection of media resources and equipment, and a computer laboratory. The computer laboratory provides access to 30 computer terminals with Internet access, word-processing, and e-mail access. Information Technology Services also provides multimedia resources (films, filmstrips, records, audio and videotapes, etc.), along with the necessary machines to use them.

The Technical Services Unit (Cataloging, Acquisitions, Collections Development) is responsible for systematically selecting, acquiring, cataloging, classifying, developing, and strengthening both qualitatively and quantitatively collections of resources in support of academic disciplines, research, and recreational needs of patrons at AAMU.

Bibliographic Instruction (EDU 104) is a one-hour elective course offered by the Learning Resources Center, through the School of Education. This course is designed to give a general overview of library facilities and services, an introduction to basic skills using the library, a discussion of the best search strategies, and a discussion on the use and organization of specialized or subject related library sources as well as the basic reference sources available for specific disciplines. Students learn how to identify, locate, and utilize the appropriate information resources and become more independent in their library usage.

Library orientation and tours are available to groups, as well as individuals, and can be either general or specific. During the sessions, which are tailored to the patrons' needs, qualified LRC personnel explain available services and resources of the Learning Resources Center, including the Horizon Public Access Catalog, books, journals, indexes, microforms, and Internet database services. The instruction is designed to teach patrons to access and use the LRC resources and services effectively.

Regulations relative to borrowing privileges, fines, services, and resources are explained in the Learning Resources Center Handbook of Programs and Services.

## COMPUTER LABORATORIES/DISTANCE EDUCATION

AAMU has six computer laboratories across campus, which offer the latest in computer technology and access to the Internet. The computer labs are open to all registered students of AAMU and are free of charge. The lab computers feature Windows 95 and have word processing, spreadsheet and data base software available. Each lab is staffed by Education and Information Technology Services (EITS).

The computer laboratories are located at the following sites:

| West Campus | (256) 851-5470 |
| :--- | :--- |
| Foster Complex | (256) 851-5820 |
| Councill Hall | $(256) 851-5808$ |
| School of Business | $(256) 851-5993$ |
| Carter Hall | $(256) 851-5993$ |
| The University Center | $(256) 851-5860$ |
| J.F. Drake Learning Resources Center | $(256) 858-4725$ |

INTERNATIONAL PROGRAMS
104 Carver Complex, Bonner Wing
(256) 851-5418

AAMU has had a long history of international involvement, especially in the training of international students, many of whom come from the less developed countries of the world. In incorporating an international dimension to its traditional programs of teaching, research, and public service and in keeping with its mission and goals, part of which is to provide and/or extend education services to the wider community, AAMU is guided by a recognition of the interdependence among people and countries throughout the world. It also recognizes its historical background and experience in working with and assisting people of limited resources as being uniquely
suited for responding to the development needs of Third World countries.
AAMU formalized its involvement in international education and development activities by establishing an Office of International Programs (OIP) in 1978. In doing so, it committed itself to mobilize its resources towards the internationalization of AAMU's programs and activities. It further committed itself to the strengthening of its capacity and capabilities to respond to the needs of the state of Alabama, the U.S. government, and other international development agencies for technical and training expertise as may be needed by lesserdeveloped countries. AAMU believes that by its involvement in international programs and activities, it will acquire new knowledge, broaden the outlook of its community and above all, establish a better understanding and friendship between the U.S. and the people of other countries.

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

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

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

In pursuance of these programs and activities, AAMU has established formal linkages with many universities and research centers in many countries in Africa, including the University of Ouagadougou, Burkina Faso; Ministry of Higher Education, Computer Services and Scientific Research, and the Institute of Agronomic Research, Cameroon; University of Cocody, Cote d'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, Main Botanical Gardens, Russian Academy of Sciences, Russia and the Simferopol State University, and the Cherkassy Institute of Business Management, Ukraine. These linkages provide

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

Alabama A\&M University is a member of the National Student Exchange (NSE). Under this system, an AAMU student can attend another NSE-member institution while registered at an AAMU, to take courses for one semester or a year for the same amount of tuition and fees paid at AAMU. Courses taken at a host campus are fully transferable, with grades applicable towards the student's graduation requirements 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.

## STUDENT HEALTH SERVICES

Buchanan Hall

(256) 851-5600

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

SHS is staffed by a full time physician, head nurse, medical secretary, nurse and nurse practitioner. The Center's hours of operation are 8:00 a.m. to 1:30 p.m., 2:30 to 5:00 p.m. Closed for lunch 1:30-2:30 Monday Friday. Any student needing medical attention should report to SHS during its hours of operation. In the event of an emergency, the student should go directly to a local emergency room. Family members of students, faculty, and staff are not eligible for treatment in SHS.

## DEPARTMENT OF PUBLIC SAFETY

Public Safety Building

(256) 851-5555

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

# WJAB FM RADIO STATION <br> Room 202 Morrison Building (256) 851-5795 

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 twentyfour hour, seven days a week format. Major support for the operation of the station comes from the licensee, AAMU. Additional funds are provided by our listeners, the business community as well as the Cooperative for Public Broadcasting.

## CAREER DEVELOPMENT SERVICES

102 Patton Hall
(256) 851-5690

Career Development Service's mission is assisting students and alumni in crystallizing career objectives, preparing for employment opportunities and providing career planning services which will enable students to move confidentially 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.

It is the goal of Career Development Services to provide all students and alumni with career development and career opportunities. Therefore, freshmen through alumni are encouraged to use the services available.
Services may range from individual assessment to on-campus job interviews. Students are strongly encouraged to initiate a career placement file upon graduation.

Services offered to students include career counseling, teacher credential services, career information library, alumni assistance, computerized registration and resume assistance, and cooperative education.

## Cooperative Education Program

Cooperative education is a unique plan of education 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 increases 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 employers and AAMU. AAMU 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.

Career Development Services annually sponsors Career Fairs, Job Expos and Graduate School Fairs so that students will have the opportunity to talk with visiting employers/college representatives on campus. The office also sponsors The Youth Motivation Task Force Program, which brings successful alumni to the campus to motivate students and serve as role models/mentors. Visit the CDS Website: www.aamu.edu/cds

## OFFICE OF VETERAN AFFAIRS

Buchanan Hall (256) 851-5805

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

Lee Student Center
(256) 851-5619

The Student Government Association (SGA), to which all undergraduate students belong, it 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 promoeducational and social programs for students.

# SCHOOL OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES 

Dr. James W. Shuford, Dean<br>300 Dawson Building<br>(256) 851-5783

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

This mission is accomplished by applying scientific knowledge and basic skills of specific instructional programs. Students prepare for rewarding careers through the following modes:

1. Pursuit of courses in the general education curriculum of the University that provide desirable broad educational experiences for all students.
2. Development of a fundamental understanding of the basic principles of the physical, biological, and social sciences, as well as the humanities as applied to agriculture, environmental science, family and consumer sciences, community planning, and related areas.
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 departments, each headed by a department chairperson. The departments are Agribusiness; Community Planning and Urban Studies; Family and Consumer Sciences; Food and Animal Sciences; and Plant and Soil Science.

Students may pursue the Bachelor or Master of Science degrees in the following areas: Agriscience Education, Agricultural Economics, Agricultural Science, General Dietetics, Animal Science, Food Science and Technology, Food Science and Nutrition, Environmental Science, Plant Science, Forestry, Urban Planning, Urban Studies, Urban and Regional Planning, Family and Consumer Science Education, Fashion Merchandising, Fashion Design, Human Development and Family Studies, and Hospitality Management. Doctoral programs are offered in Food Science, and Plant and Soil Science.

## 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, community 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 at least a 2.00 GPA. Candidates must also complete special requirements established by the various academic programs in the school and approved by the Committee on Academic Standards.

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 <br> 256-851-5410

The Department of Agribusiness offers degree programs in Agricultural Sciences and Agricultural Economics. The Agricultural Sciences program has a major in Agriscience Education and Agriscience. The Agricultural Economics degree has a major in Agricultural Economics and Agribusiness Management.

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 the public sector as well as in the private sector with firms engaged in agricultural marketing, research, commodity marketing, and financial services as well as agricultural cooperatives. Students majoring in this area have the option of completing an internship with an approved establishment. Many of the graduates continue their education by pursuing advanced degrees in the field.

The Agribusiness Management major is designed for students who wish to pursue agricultural business and related careers with business and government. It 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 agriculture sector. Students electing this major are required to complete an internship assignment at an off campus agribusiness firm or government agency under the supervision of a faculty advisor.

## Student Organizations

## Agribusiness Club

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

## AGRICULTURAL SCIENCES

## AGRISCIENCE EDUCATION <br> 128 Credit Hours

## 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 | MTH | 112 | Pre-Calculus Algebra OR | 3 |
| MTH | 110 | Finite Math OR | 3 | MTH | 113 | Pre-Calculus Trig | $(3)$ |
| MTH | 112 | Pre-Calculus Algebra | 3 | CHE | 101 | General Chemistry I | 3 |
| BIO | 101 | General Biology I | 3 | CHE | 101 L | General Chemistry Lab OR | 1 |
| BIO | 101 | General Biology Lab I | 1 | PHY | 101 | Physical Science I | $(3)$ |
| ART | 101 | Art Appreciation OR | 3 | PHY | 101 L | Physical Science I Lab OR | $(1)$ |
| MUS | 101 | Music Appreciation | 3 | PHY | 103 | General Physics I | $(4)$ |
| PED | 101 | Physical Education Activities | $\underline{2}$ | HED | 101 | Personal \& Comm. Health | 2 |
|  |  |  | 16 | HIS | 101 | World History | $\underline{3}$ |
|  |  |  |  |  |  | 15 |  |


| First Semester |  |  |  | Sem Hrs. | Second Semester |  | Sem Hrs. |
| :--- | :--- | :--- | :---: | :--- | :--- | :--- | :---: |
| ENG | 203 | Humanities I OR | 3 | ENG | 203 | Humanities II OR | 3 |
| ENG | 201 | Survey of English Literature OR | $(3)$ | ENG | 202 | Survey of English Literature OR (3) |  |
| ENG | 301 | Survey of American Lit. | $(3)$ | ENG | 302 | Survey of American Literature | $(3)$ |
| ENG | 205 | General speech | 3 | PSY | 201 | General Psychology | 3 |
| HIS | 203 | Found. of Amer. Hist. \& Govt. | 3 | ECO | 223 | Principle of Economics | 3 |
| AGB | 211 | Basic Metals | 3 | AGB | 212 | Woodworking and Machines | 3 |
| FAS | 112 | Intro. to Animal Science | 3 | AGB | 199 | Computers in Agriculture | 3 |
| EDU | 102 | Intro. to Teacher Education | $\underline{3}$ | SPS | 170 | Intro. To Environ. Science | $\underline{3}$ |
|  |  |  | 18 |  |  |  | 18 |

## Junior Year

| First Semester |  |  |
| :--- | :---: | :--- |
| EDU | 307 |  |
| EDU | 311 | Humanan Growth and Dev. |
| AGB | 314 | Small Structure Construc. |
| SPS | 251 | Intro to Soil Science |
| SPS | 281 | Intro. to Forestry |


| Sem Hrs. | Second Semester |  |  | Sem Hrs. |
| :---: | :--- | :--- | :--- | :--- |
| 3 | SPE | 201 | Intro to Study of Except. Child | 3 |
| 3 | SPS | 323 | Plant Mtr \& Landscape | 3 |
| 3 | AGB | 301 | Electrical Systems \& Machine | 3 |
| 4 | AGB | 311 | Small Power Units \& Equipment | 3 |
| $\underline{3}$ | AGB | 418 | Agricultural Leadership | 3 |
| 16 | EDU | 403 | Educational Psychology | $\underline{3}$ |
|  |  |  |  | 18 |

## Senior Year

First Semester

| EDU | 411 | Instructional Technology |
| :--- | :--- | :--- |
| EDU | 402 | Tests \& Measurements |
| EDU | 409 | Reading in the Content Area |
| AGB | 401 | Methods of Tchg Agri. |
| AGB | 421 | Agribusiness Management |

Sem Hrs.
3
Second Semester
EDU
EDis.
EDU $401 \quad$ Hist. \& Phil. of Ed.

## Sem Hrs.

$\underline{9}$12AGB 421 Agribusiness Management $\underline{3}$

## AGRICULTURAL SCIENCES

## AGRISCIENCE

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 I | 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 | 203 | Intro. to Sociology | $(3)$ |
| NHM | 103 | Nutrition Today | $(2)$ | SPS | 101 | Intro. to Plant Science | 3 |
| AGB | 199 | Computers in Agriculture | 3 | SPS | 101 L | Intro. to Plant Science Lab | $\underline{1}$ |
| MUS | 101 | Music Appreciation OR | 3 |  |  |  | 14 |
| ART | 101 | Art Appreciation | $\underline{(3)}$ |  |  |  |  |


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

Junior Year

| First Semester |  | Sem Hrs. | Second Semester |  | Sem Hrs. |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| SPS | 323 | Plant Mat. For Landscape Des. | 3 | SPS | 310 | Field Crop Production | 3 |
| SPS | 351 | Soil and Water Conservation | 3 | AGB | 314 | Small Structure Construction | 3 |
| FAS | 325 | Fund. of Poultry Science | 3 | AGB | 322 | Farm Management | 3 |
| AGB | 300 | Agribusiness Statistics | 3 | AGB | 301 | Electrical Systems | 3 |
| AGB | 323 | Agricultural Marketing | 3 | FAS | 354 | Beef Cattle Production | 3 |
|  |  | Electives (Advisor Approved) | $\underline{3}$ | ENG | 304 | Advanced Composition | $\underline{3}$ |
|  |  |  | 18 |  |  |  | 18 |

## Senior Year

| First Semester |  |  |  |
| :--- | :--- | :--- | :---: |
| AGB | 422 | Agricultural Financing |  |
| ANS | 356 | Swine Production |  |
| AGB | 499 | Research in Agribusiness |  |
| AGB | 425 | Agricultural Policy |  |
|  | Electives (Advisor Approved) |  |  |


| Sem Hrs. | Second Semester |  | Sem Hrs |  |
| :---: | :--- | :--- | :--- | :---: |
| 3 | AGB | 405 | Extension Methods | 3 |
| 3 | AGB | 421 | Agribusiness Management | 3 |
| 3 | AGB | 418 | Agricultural Leadership | 3 |
| 3 |  |  | Electives (advisor approved) | $\underline{5}$ |
| $\underline{3}$ |  |  |  | 14 |
| 15 |  |  |  |  |

## Agriscience Electives:

## Course Number Course Title

## Semester Hours

| AGB | 330 | Internship in Agribusiness | 3 |
| :--- | :--- | :--- | :---: |
| AGB | 401 | Methods of Teaching | 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 | $1-3$ |
| FAS | 352 | Feeds and Feeding | 3 |
| FAS | 405 | Special Problems | 3 |
| SPS | 325 | Turf Management | 3 |
| SPS | 370 | Natural Resource Management | 3 |
| SPS | 401 | Commercial Nursery \& Greenhouse Mgt | 3 |
| SPS | 410 | Forage Management | 3 |
| SPS | 416 | Principles of Sustainable Agriculture | 3 |
| SPS | 420 | Vegetable Crop Production | 3 |
| SPS | 490 | Special Problems | 3 |



## AGRICULTURAL ECONOMICS

128 Credit Hours

## Freshman Year

| First Semester |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :---: | :--- | :--- | :--- | :---: |
| ORI Hrs. | Second Semester |  | Sem Hrs. |  |  |  |  |
| ORI | 101 | Survival Skills | 1 | AGB | 102 | Intro. to Careers in Agriculture | 1 |
| ENG | 101 | Communication Skills I OR | 3 | ENG | 102 | Communication Skills II | 3 |
| ENG | 103 | Communication Skills 1 | $(3)$ | ENG | 104 | Communications Skills II OR | $(3)$ |
| HIS | 101 | World History I | 3 | MTH | 112 | Pre-Calculus Algebra | 3 |
| HED | 101 | Personal \& Comm. Health OR | 2 | PSY | 201 | General Psychology OR | 3 |
| FAS | 101 | Food \& the Survival of Man OR | $(2)$ | SOC | 203 | Intro. to Sociology | $(3)$ |
| NHM | 103 | Nutrition Today | $(2)$ | SPS | 101 | Intro. to Plant Science | 3 |
| AGB | 199 | Computers in Agriculture | 3 | SPS | 101L | Intro. to Plant Science Lab | $\underline{1}$ |
| MUS | 101 | Music Appreciation OR | 3 |  |  |  | 14 |
| ART | 101 | Art Appreciation | $\underline{(3)}$ |  |  |  |  |

*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 | 3 |
| ENG | 205 | General Speech | $\underline{3}$ | SPS | 251 L | Intro. to Soil Science | $\underline{1}$ |
|  |  |  | 18 |  |  |  | 16 |

## Junior Year

First Semester

| AGB | 323 | Agricultural Marketing | 3 | AGB | 322 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| BUS | 207 | Legal Environment and Ethics | 3 | AGB | 421 |
| ECO | 335 | Intermediate Microeconomics | 3 | ENG | 304 |
| ECO | 413 | Money and Banking | 3 | ECO | 335 |
| MGT | 408 |  | Management Information Systems 3 | ECO | 414 |
|  |  |  | Electives (Advisor Approved) | $\underline{3}$ | AGB |
|  |  | 18 | AGB | 453 |  |

## 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) | $\underline{3}$ | AGB | 418 | Agricultural Leadership | 3 |  |
|  |  | 15 |  |  | Electives (advisor approved) | $\underline{2}$ |  |

## Agricultural Economics Electives:

Course Number Course Title

| AGB | 330 | Internship in Agribusiness | 3 |
| :--- | :--- | :--- | :---: |
| AGB | 401 | Method of Teaching | 3 |
| AGB | 333 | Commodity Marketing | 3 |
| AGB | 420 | Agricultural Cooperatives | 3 |
| AGB | 430 | Agricultural Prices | 3 |
| AGB | 490 | Special Problems | 1 to 6 |
| ECO | 416 | Consumer Economics | 3 |
| FAS | 405 | Special Problems | 3 |
| MGT | 433 | Human Resources management | 3 |
| SPS | 490 | Special Problems | 3 |



## AGRICULTURAL ECONOMICS

## AGRIBUSINESS MANAGEMENT

128 Credit Hours

## Freshman Year

| First Semester |  | Sem Hrs. |  | Second Semester |  | r Sem Hrs. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ORI | 101 | Survival Skills | 1 | AGB | 102 | Intro. to Careers in Agriculture | 1 |
| ENG | 101 | Communication Skills I OR | 3 | ENG | 102 | Communication Skills II | 3 |
| ENG | 103 | Communication Skills 1 | (3) | ENG | 104 | Communications Skills II OR | (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 | R (2) | SOC | 203 | Intro. to Sociology | (3) |
| NHM | 103 | Nutrition Today | (2) | SPS | 101 | Intro. to Plant Science | 3 |
| AGB | 199 | Computers in Agriculture | 3 | SPS | 101L | Intro. to Plant Science Lab | 1 |
| MUS | 101 | Music Appreciation OR | 3 |  |  |  | 14 |
| 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 | 3 |
| ENG | 205 | General Speech | $\underline{3}$ | SPS | $251 L$ | Intro. to Soil Science Lab | $\underline{1}$ |
|  |  |  | 18 |  |  |  | 16 |

## 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 |
| MGT | 315 | Principles of Management | 3 | MGT | 352 | Entrepreneurship | 3 |
| ENG | 304 | Advanced Composition | 3 | MGT | 408 | Management Info. System | 3 |
|  |  | Electives (advisor approved) | $\underline{6}$ | AGB | 424 | International Agric. Develop. OR | 3 |
|  |  |  | 18 | AGB | 453 | International Agric. Marketing | $(3)$ |
|  |  |  |  |  |  | Electives (advisor approved) | $\underline{3}$ |
|  |  |  |  |  |  | 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 Agric. Marketing OR3 |  |
| AGB | 425 | Agricultural Policy | 3 | AGB | 424 | International Agric. Develop. | $(3)$ |
|  |  | Electives (advisor approved) | $\underline{6}$ | MGT | 433 | Human Res. Management | 3 |
|  |  |  | 15 | AGB | 418 | Agricultural Leadership | 3 |
|  |  |  |  |  |  | 59 |  |

Electives (advisor approved)

Agribusiness Management Electives:

## Course Number Course Title

AGB 330 Internship in Agribusiness 3
AGB 401 Methods of Teaching 3
AGB 333 Commodity Marketing 3
AGB 420 Agricultural Cooperatives 3
AGB 430 Agricultural Prices 3
AGB 443 Economics of Food Distribution 3
AGB 445 Natural Resource Economic 3
AGB 490 Special Problems 1 to 6

FAS 405 Special Problems 3
ECO 416 Consumer Economics 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 200 Operation and Maintenance of Farm Machinery - 3 hrs. Selection, use and maintenance of farm tractors and machinery. Includes laboratory practices on tractors, gas engines, plows, movers, planters, harvesters, and sprayers. Prerequisite: None (Offered: Spring)

AGB 211 Basic Metals - 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 Woodworking and Machines - 3 hrs. A study of the safe operations and maintenance of woodworking machines. Methods of design, construction and finishing of wood products and an overview of the wood industry. Prerequisite: None (Offered: Spring)

AGB 221 Introduction to Agricultural Economics - 3 hrs . An introduction to the field of agricultural economics through the application of principles of economics to problems in agriculture and related industries, analysis of supply and demand, resource allocation and utilization; the role of natural resources, population and capital in economics development, policy issues including resource, price and income policies and international trade. Prerequisite: None (Offered: Fall)

AGB 299 Quantitative Applications in Agribusiness - 3 hrs. This course is an introduction to quantitative agricultural methods, tools and problems solving techniques. The course is designed to expand theoretical math concepts and make applications in the agribusiness and agricultural sector. Emphasis will be on data manipulation especially as it applies to graphical analysis of physical and financial functions. 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: None (Offered: Fall)

AGB 300 Agribusiness Statistics - 3 hrs. An introduction to sources and methods of collection and analysis of prices and other agricultural statistics. Focus on the basic tools of statistical analysis, such as ratios, frequency distribution, averages and dispersion measures, as well as on time series, correlation, and simple and multiple regression analyses. Prerequisites MTH 112. (Offered: Fall)

AGB 301 Electric Systems and Machines - 3 hrs. Units of study include: basic circuits elements, electric wiring systems, motor operation and maintenance, electrical and electronic controls. Prerequisite: None (Offered: Spring)

AGB 302 Organization and Administration of Vocational Education in Agriculture - 3 hrs . This course will deal with the current philosophy of organizing and administering programs in vocational education in agriculture at the secondary level. Emphasis will be placed on methods of developing and
implementing local agricultural education programs according to approved principles and practices. Prerequisite: None (Offered: Spring)

AGB 311 Small Power Unit and Equipment - 3 hrs. This course deals with unit selection, principles of operations, and maintenance of small air-cooled engines. Emphasis will be placed on operation, adjustment, and maintenance of farm tractors. Prerequisite: None (Offered: Spring)

AGB 314 Small Structure Construction 3 hrs. This course includes: planning and construction methods for small buildings made of lumber, poles, metals, concrete, blocks and plastics; bill of materials; carpentry of layouts, foundations, framing, floors, covering and finishes. Prerequisite: None (Offered: Fall)

AGB 322 Farm Management - 3 hrs. Organization and operation of the farm business are analyzed to obtain an income consistent with family resources applied to the individual farm. Emphasis on budgeting crop and livestock 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. Provides upper level students with supervised, on-the-job experiences with extension service, agribusiness firms, governmental agencies and farm cooperatives. These experiences will be accompanied by regularly scheduled organized discussion periods designed to provide positive evaluation and analysis of the intern experience. Prerequisite: None (Offered: Fall, Spring, and Summer)

AGB 333 Commodity Marketing - 3 hrs. Focuses on using futures markets in managing agricultural price risk. Topics include: hedging, forward contracting and options as risk management tools. Prerequisite: None (Offered: Fall Odd)

AGB 343 Economics of Grain Marketing - 3 hrs. This course exposes students to the activities, economic concepts and principles of grain marketing. The focus is on the movement of major grains grown in the US--corn, wheat, and soybeans from farm production to final consumption. Prerequisite: None (Offered: Fall Even)

AGB 401 Methods of Teaching in Agriscience - 3 hrs. Consideration will be given to approved methods and techniques of teaching Agribusiness at the secondary level. Emphasis will be placed on foundations for methods in Agribusiness Education, method for teaching and learning, application of learning, teaching special populations and evaluation of learning. Prerequisites: EDU 307, EDU 402, EDU 403, EDU 411. Prerequisite: None (Offered: Fall)

AGB 402
Directed Teaching - 9 hrs. Students will do practice teaching 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 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 223. (Offered: Spring)

AGB 422 Agricultural Financing - 3 hrs. Study of capital and credit needs of farms and agribusiness firms. Sources and cost of capital and the allocation of capital over time and among alternatives. Risk management strategies and financial performance analysis are covered. Prerequisite: None (Offered: Fall)

AGB 423 Food Merchandising - 3 hrs. This course will expose students to various merchandising activities that affect the sale of food and nonfood products through the U.S. food marketing system. Special emphasis will be placed on those merchandising activities that occur in the retail store. Prerequisite: None (Offered: Spring Even)

AGB 424 International Agricultural Development - 3 hrs. Conceptual analysis of economic development with international focus on the lesser developed areas and countries. Emphasis is placed on financial aid, technical aid and appropriate factor proportions in the transformation of agrarian economics. Prerequisite: None (Offered: Spring Even)

AGB 425 Agricultural Policy - 3 hrs. The application of economic analysis to Federal and State government programs and policies affecting resource adjustment in agriculture to determine their effects on products' incomes and consumers' prices. Past programs are critically appraised in light of existing economics and the political climate at the time of their implementation, existing programs and alternate proposals are evaluated using such criteria as resource use and income distribution within agriculture and between agriculture and the rest of the economy; and other economic and social implications of alternative policies and programs are reviewed. Prerequisite: None (Offered: Fall)

AGB 430 Agricultural Prices - 3 hrs . An analysis of the factors affecting the prices of agricultural products and a study of the behavior of these prices, seasonal and cyclical price movement; government activities relating to agricultural prices, marketing margins and prices paid; and price predication. Prerequisite: None (Offered: Fall Odd)

AGB 433 Agricultural Sales - 3 hrs. Introduction of sales as a career choice within the agricultural science disciplines. Study of the structure of sales organization as well as activities involved in day-to-day
operations. Hands-on training in performing functions of an agribusiness salesperson are covered. Prerequisite: None (Offered: Fall Even)

AGB 443 Economics of Food Distribution - 3 hrs. This course is designed to introduce students to the fundamentals of food distribution an 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 occur in the retail store. Prerequisite: None (Offered: Spring)

AGB 445 Natural Resource Economics - 3 hrs. The course is designed to expose students to fundamentals of agricultural and natural resource economics, with emphasis on the problems and policies of both developed and less developed worlds. Special focus will be placed on pollution control issues, hazardous wastes, and the vulnerability of minority population and government responses to increasing visibility of these issues. Prerequisite: None (Offered: Fall Even)

AGB 453 International Agricultural Marketing - 3 hrs . This course is designed to expose students to the fundamentals of global agricultural marketing, the challenges involved, and the political and economic ramifications of marketing abroad. Prerequisite: None (Offered: Spring Odd)

AGB 490 Special Problems - 3 hrs. Guided independent investigation of problems in Agricultural Sciences, Agribusiness Management and Agricultural Economics. Prerequisite: None (Offered: Fall, Spring and Summer)

AGB 499 Research in Agribusiness - 3 hr. Critical review of relevant research, and group discussion of current development, and problems related to the agricultural sector. Prerequisites: Junior or senior standing and consent of academic advisor. Prerequisite: None (Offered: Spring)


## LIST OF ELECTIVES

## DEPARTMENT OF AGRIBUSINESS

## Agricultural Economics Option

| Course Number | Course Title | Semester Hours |
| :--- | :--- | :--- |
| AGB 333 | Commodity Marketing | 3 credit hours |
| AGB 330 | Internship | $3-6$ credit hours |
| AGB 430 | Agricultural Prices | 3 credit hours |
| AGB 443 | Economics of Food Distribution | 3 credit hours |
| AGB 445 | Natural Resource Economics | 3 credit hours |
| AGB 453 | International Agricultural Marketing | 3 credit hours |
| AGB 490 | Special Problems | $1-3$ credit hours |
| ECO 413 | Money \& Banking | 3 credit hours |
| ECO 416 | Consumer Economics | 3 credit hours |
| FAS 405 | Special Problems | $1-3$ credit hours |
| SPS 490 | Special Problems | $1-3$ credit hours |

## Agricultural Science Option

| $\frac{\text { Course Number }}{}$ | $\frac{\text { Course Title }}{}$ | $\frac{\text { Semester Hours }}{3 \text { credit hours }}$ |
| :--- | :--- | :--- |
| AGB 405 | Extension Methods | 3 credit hours |
| AGB 420 | Agricultural Cooperatives | 3 credit hours <br> AGB 424 |
| International Agricultural Development | 3 credit hours |  |
| AGB 433 | Agricultural Sales | 3 credit hours |
| AGB 443 | Economics of Food Distribution | 3 credit hours |
| AGB 445 | Natural Resources Economics | $1-3$ credit hours |
| AGB 490 | Special Problems | $1-3$ credit hours |
| FDS 405 | Special Problems | 3 credit hours |

## Agribusiness Management Option

| Course Number | Course Title | Semester Hours |
| :--- | :--- | :--- |
| AGB 330 | Internship | $3-6$ credit hours |
| AGB 405 | Extension Methods | 3 credit hours |
| AGB 420 | Agricultural Cooperatives | 3 credit hours |
| AGB 424 | International Agricultural Development | 3 credit hours |
| AGB 490 | Special Problems | $1-3$ credit hours |
| BUS 433 | Human Resources Management | 3 credit hours |
| MGT 352 | Entrepreneurship | 3 credit hours |
| AGB 405 | Extension Methods | 3 credit hours |
| AGB 420 | Agricultural Cooperatives | 3 credit hours |
| AGB 424 | International Agricultural Development | 3 credit hours |
| AGB 433 | Agricultural Sales | 3 credit hours |
| AGB 443 | Economics of Food Distribution | 3 credit hours |
| AGB 490 | Special Problems | $1-3$ credit hours |
| FDS 405 | Special Problems | $1-3$ credit hours |
| SPS 490 | Special Problems | 3 credit hours |

# Department of Community Planning and Urban Studies 

Room 308 Dawson<br>256-851-5425

The Urban Planning Program is designed to train students so that they are capable of combining an understanding of urban and rural development with principles and practices of urban and regional planning to achieve public development objectives. By enabling students to understand the broad problems of urban and rural societies and to formulate programs for their solution, the curriculum prepares students for careers in governmental agencies, land development, consulting businesses, community service organizations, community development corporations (CDCs), and private industry.

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

## Professional Organizations

The Urban Planning Association, which is affiliated with the Alabama Chapter of the American Planning Association (APA), is the Alabama A\&M University planning students organization. Students are encouraged to join the national organization of APA, which provides an avenue for active participation through the State Chapter and through the national planning student network.

## Guidelines for Completion of Requirements for B.S. in Urban Planning

Students must officially declare Urban Planning as a major.
Students must select an area of specialization.
Students must have a cumulative grade - point average of 2.0 in order to graduate.
Students must complete 122 semester credit hours with a grade of " C " or better in all core courses in the major

## Professional Experience

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


## Urban Planning Curriculum

122 credit hours

## Freshman Year

First Semester
ORI 101 Survival Skills
ENG 101 Communication Skills I
BIO 101 General Biology I
BIO 101L General Biology I Lab
CMP 101 Fund. of Comp. \& Info Systems or
AGB 199 Computers in Agriculture
UPL 101 Introduction to Urban Planning

${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.

## Sophomore Year

## First Semester

ENG 203 Humanities I
ECO 223 Principles of Economics
PSC 306 State \& Local Gov.
UPL 203 Hist. \& Theory of Plan.
ENG 205 General Speech

First Semester
ENG 304 Advanced Composition
UPL 310 Urban Economic Anal.
UPL 303 Plan Research Methods I
UPL 317 Plan. Workshop I

3 UPL 408 Planning Workshop II 3
3 UPL 420 Senior Project 3
$\underline{9}$ Specialization Electives 6
15 Free Electives $\underline{6}$
1 ENG 102 Communication Skills 3
MTH 110 Finite Mathematics or 3
MTH 112 Pre-Calculus Algebra 3
HIS 101 World History or 3
HIS 204 Intro. to African Studies 3
PHY 101 Physical Science I \& 3
PHY 101L Physical Science Labor or 1
PHY 103 General Physics or 4
BIO 102 General Biology II \& 3
BIO 102L General Biology II Lab or 1
BIO 205 Ecology \& 3
BIO 205L Ecology Lab 1
${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.

Sem. Hrs. Second Semester
3 ENG 102 Literature 3
3 NHM 103 Nutrition Today or 3
3 FAS 101 Food \& Survival of Man 2
3 ECO 224 Prin. of Economics II 3
3 GEO 401 Urban Geography 3
15 UPL 201 Small Town Planning 3
ART 101 Art Appreciation $\underline{3}$
18
Junior Year

Sem. Hrs. Second Semester
3 UPL 316 Plan. Research Meth. II 3
3 UPL 327 Land Use Planning 3
3 UPL 330 Population Analysis 3
$\underline{3}$ Specialization Elective $\underline{6}$
12

## Senior Year

Sem. Hrs. Second Semester

## Electives

| Course Number |  | Course Title |
| :--- | :--- | :---: |
| 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 411 | Economic Development 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 453 | Community Development Process | 3 |
| UPL 445 | Environmental Assessment | 3 |

## Minor in Urban Planning

(18 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 |

## Planning Specialization

All planning majors are required to select a specialization (18 credit hours) in an area of interest, which is included in the 122 required for B.S. degree in Urban Planning. This may be achieved by minoring 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 specialization.

## Course Descriptions

UPL 101 Introduction to Urban Planning - 3 hrs. A course describing the planning profession which includes exposure to history, roles, values, urban design, quantitative methods and various functions performed by planning professionals. (Offered Fall)

UPL 103 The Community and You - 3 hrs. This course is an examination of the role of citizens in the life and viability of communities. It explores the concepts of community, leadership, and public service obligations. Emphasis is placed on an understanding of the dynamics that converge to create healthy and civil societies. (Offered Fall and Spring)

UPL 201 Small Town Planning - 3 hrs. An examination of the features which distinguish the rural environment from the urban and, a review of rural development principles. (Offered Spring)

History and Theory of Planning - 3 hrs . A survey of events, dates, and personalities influential in the development of current theory, methods, and practices peculiar to urban planning. (Offered Fall)

UPL 303 Planning Research Methods I. - 3 hrs. Methods and procedures in statistical evaluation, including their application to planning and urban analysis. (Offered Fall)

UPL 310 Urban Economics Analysis - 3 hrs. An analysis of economic functions that promote growth and development or urban centers, including the process of urbanization, industrial and urban locations, central functions, functional classification of cities, urban land use, political organization, fiscal policies, urban housing, environment and transportation, employment, and levels of income. (Offered Fall)

UPL 316 Planning Research Methods II-3 hrs. Techniques and methods involved in conducting research are covered. Consideration is given to the relationship of research to the planning profession. (Offered Spring)

UPL 317 Planning Workshop $I$ - 3 hrs. An introduction to basic techniques of communicating planning concepts, ideas, and data through graphical representation. The course is designed to train students in survey and analysis of existing urban land uses, and preparations of site and land use plans, and other planning documents. (Offered Fall)

UPL 327 Land Use Planning 3 hrs . The preparation of the land use plan element of a city's comprehensive plan, including the allocation of land for various uses based upon a community's goals and objectives. Prerequisite: UPL 317. (Offered Spring)

UPL 330 Population Analysis - 3 hrs . A study of the impact of population movements on social, economic, and political affairs, as well as instruction on the process and use of population forecasting, rates, and ratios. (Offered Spring)

UPL 404 Social Planning Principles - 3 hrs. An introduction to the basic concepts of social planning. The social impact of physical development plans on urban societies are described and analyzed. (Offered Fall)

UPL 405 Practicum I- 3 hrs. Student placement in a public or private planning agency or department to perform a predetermined work assignment under direct agency supervision of ten hours per week. Restricted to juniors and seniors with a cumulative GPA of 2.5 or above. (Offered Fall)

UPL 406 Practicum II - 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 $\mathbf{2 . 5}$ 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 435 Transportation Planning - 3 hrs. An introduction 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. This course presents an in-depth orientation to contemporary transportation planning computer model analysis techniques. Practical applications are provided to gain experience in data generation, data management, program execution, and interpretation of computer output. (Offered Spring, Even Years).

UPL 442 Planning and the Environment - 3 hrs. This course focuses on the synthesizing of public and private physical, social, economic and cultural planning practices as a means for ensuring environmental stability. (Offered Fall, Even Years)

UPL 443 Housing Issues -3 hrs. An introduction to the nature of housing needs and supply in the community. It also examines the various methods (policies and programs) used by the public sector to intervene in the housing market. In addition, the methodology and techniques utilized to assess housing conditions and needs are examined.(Offered Spring, Odd Years)

UPL 444 Historic Preservation and Neighborhood Conservation 3 hrs. A study of the legislation, standards, and practices related to the conservation of neighborhoods and historically significant buildings and districts. (Offered Summer, Odd Years)

UPL 445 Environmental Assessment - 3 hrs. A concentration on federal, state and local environmental regulations with emphasis on translating environmental assessment results into public policy, and a conceptualization of the mitigation of identifiable conflicts with specific attention to the socioeconomic impacts on urban societies. (Offered Spring, Odd Years)

UPL 454 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 <br> Room 105 CCB Hobson Wing 256-851-5419 

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.

## FAMILY AND CONSUMER SCIENCES PROGRAMS


#### Abstract

MISSION Programs in Family and Consumer Sciences operate within the total mission of the University's landgrant function of research, service and instruction. More specifically, the main thrust of the programs is individual and family well being as impacted by various environmental settings and factors. The knowledge base includes basic concepts and principles regarding individual and family structures, functions, and systems. Specialized programs incorporate the knowledge base.

\section*{ORGANIZATION AND OBJECTIVES}

Family and Consumer Sciences consists of three areas: Apparel, Merchandising, and Design; Human Development and Family Studies; and Nutrition and Hospitality Management. The Bachelor of Science degree in Family and Consumer Sciences is offered with majors in Apparel, Merchandising and Design; Family and Consumer Sciences Education; Human Development and Family Studies; and Nutrition and Hospitality Management. Options within majors include: Fashion Design, Fashion Merchandising, Interior Design (on hold), Family and Consumer Sciences Education, Human Development and Family Studies, General Dietetics and Hospitality Management.


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

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

## GENERAL PROGRAM REQUIREMENTS

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 "С."
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 400 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.
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

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

## Mozelle Davis Award

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

## The Eliza P. Patton Award

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

## Human Development Award

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

## The Wayne Hendricks Award

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

## PROFESSIONAL ORGANIZATIONS

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

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

The Nutrition and Hospitality Management Club enhances the development of students in Nutrition and Hospitality Management and provides opportunities for preprofessional 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<br>205 Carver Complex-Hobson Wing<br>256-858-4172

## PURPOSE AND ORGANIZATION

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

The program is organized to provide a general understanding of textiles, clothing, fashion and related areas, while offering diversification through options in Fashion Merchandising, Fashion Design, and Interior Design (on hold). As designed, the programs provide unique opportunities and experiences to assist students in becoming creative, efficient and contributing members of society and of the Family and Consumer Sciences profession. The curriculum offers the training necessary to meet the demands of the apparel and home furnishings industries, as well as retailing establishments associated with these industries. Students are prepared for jobs in apparel design, production, 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, merchandising, and interiors.
2. provide support instruction for minors in other disciplines who desire to pursue careers related to clothing, merchandising, or interior design.
3. provide resource services to individuals in the urban and rural community, including parents, teachers, department store personnel and textile employees.

# APPAREL, MERCHANDISING AND DESIGN MAJOR <br> <br> Fashion Design Option <br> <br> Fashion Design Option <br> 128 Credit Hours 

## Freshman Year

| First Semester Hrs. |  |  | Second Semester |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| ORI | 101 | Survival Skills | 1 | ${ }^{2}$ ENG | 102 | Sem. Hrs

${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.

## Sophomore Year

## First Semester

ENG 203 World Literature I or
ENG 201 Survey of English Lit. I
CHE 111 Applied Chemistry I
CHE 111L Applied Chemistry I Lab
ART 110 Fundamentals of Drawing
AMD 203 Consumer Asp. Of Clothing
AMD 205L Basic Clothing Construction

Sem. Hrs. Second Semester

| 3 | ENG 204 | World Literature II or | 3 |
| :---: | :---: | :--- | :--- |
| 3 | ENG 202 | Survey of English Lit. II | 3 |
| 3 | PSY 201 | General Psychology | 3 |
| 1 | ECO 200 | Basic Economics | 3 |
| 3 | ART 209 | Composition with Drawing | 3 |
| 3 | AMD 204L | Cloth. Throughout the Life Cycle | 3 |
| $\underline{3}$ | AMD 208 | Ready to Wear App. Analysis | $\underline{2}$ |
| 16 |  |  | 17 |
|  | Junior Year |  |  |

AMD 411 Directed Field Experience
6

## Senior Year

## First Semester

Semester
FCS 420 Senior Seminar AMD 405L Functional Clothing


Sem. Hrs. Second Semester

3 MDT 252 AutoCAD for Apparel 3
3 AMD 306 Fashion Merchandising II 3
3 AMD 302 Historic Costume 3
Sem. Hrs.

3

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3
$$

3 AMD 316L Consumer Textiles II 3

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3
$$

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\frac{3}{6}
$$

3 ART 406 Fashion Illustration $\underline{3}$
15

$$
15
$$

Summer

## Sem. Hrs.

## Second

Sem. Hrs.
$\begin{array}{lll}1 & \text { AMD 308 } & \text { Visual Merchandising } \\ 3 & \text { AMD 404L } & \text { Adv. Clothing \& Design }\end{array}$
$\begin{array}{lll}1 & \text { AMD 308 } & \text { Visual Merchandising } \\ 3 & \text { AMD 404L } & \text { Adv. Clothing \& Design }\end{array}$

3
3

| AMD 410L | Apparel CAD | 3 | AMD 406L | Draping |
| :--- | :--- | :--- | :--- | :--- |
| AMD 419 | Merchd. \& Design Seminar | 2 | HDF 314 | Family and Society |

# APPAREL, MERCHANDISING AND DESIGN MAJOR <br> Fashion Merchandising Option <br> 128 Credit Hours 

| First Semester |  |  | Freshman |  |  | Sem.Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Sem. Hrs. Second Semester |  |  |  |
| 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 | $\underline{3}$ | HED 101 | Personal and Comm. Health | $\underline{2}$ |
|  |  |  | 15 |  |  | 17 |

${ }^{2}$ ENG 104 may be taken by international students.

## Sophomore

First Semester
ENG 203 World Literature I or
ENG 201 Survey of English Literature I
CHE 111 Applied Chemistry I
CHE 111L Applied Chemistry Lab
ART 111 Two Dimensional Design
AMD 203 Consumer Aspects of Clothing
AMD 205L Basic Clothing Construction

Sem. Hrs. Second Semester
3
3
3
1
3
3
3
16 AMD 208 Ready-to-Wear Apparel Anal. $\frac{2}{17}$
ENG 204 World Literature II or 3
ENG 202 Survey of English Literature II 3
SOC 201 Intro. To Sociology or 3
PSY 201 General Psychology 3
ECO 231 Principles of Macro Economics I 3
HDF 314 Family and Society 3
AMD 204L Clothing Throughout the Life Cycle 3

## Junior Year

First Semester
ACC 203 Intro. to Accounting I
MKT 306 Principles of Marketing
MKT 309 Retail Management
AMD 303 Fashion Merchandising
AMD 307L Flat Pattern Design
AMD 315 Consumer Textiles I
Sem. Hrs. Second Semester
3 ECO 232 Principles of Economics II
Sem. Hrs.

3 AMD 302 Historic Costume 3
3 AMD 306 Fashion Merchandising II 3
3 AMD 308 Visual Merchandising 3
3
$\underline{3}$

AMD 411 Directed Field Experience
6
Al

First Semester
ENG 205 General Speech
MKT 323 Promotion Management
FCS 420 Senior Seminar
MKT 332 Merchandising Techniques 3
AMD 419 Merch. \& Design Seminar $\underline{2}$

## Sem.Hrs.

3333
## Summer

## Senior Year

Sem. Hrs. Second Semester

## Sem.Hrs.

3 MKT 377 Marketing Management 3
$\begin{array}{lll}3 & \text { AMD 404L Advanced Clothing \& Design } & 3 \\ 1 & \text { Electives } & \underline{6}\end{array}$
$\begin{array}{lll}3 & \text { AMD 404L Advanced Clothing \& Design } & 3 \\ 1 & \text { Electives } & \underline{6}\end{array}$
3
12

## 

# APPAREL, MERCHANDISING AND DESIGN MAJOR Interior Design Option (On Hold) 128 Credit Hours 

## Freshman Year

First Semester

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Composition I |
| BIO | 101 | General Biology |
| BIO | 101 L | General Biology Lab |
| HIS | 101 | World History |
| FCS | 101 | Intro. To the Profession |
| MTH | 112 | Pre Calculus Algebra |

## Sem. Hrs. Second Semester

$1 \quad{ }^{2}$ ENG 102 Composition II
3 HIS

- 3

3 ART 101 Art Appreciation 3
1 NHM 102L Principles of Nutrition 3
3 HED 101 Personal \& Comm. Health or 2
1 NHM 103 Nutrition Today 2
$\underline{3}$ AMD 104L Art and Design $\underline{3}$
15 17

## Sem. Hrs.

${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.

## Sophomore Year

## First Semester

ENG 203 World Literature I or
ENG 201 Survey of English Lit.
CHE 111 Applied Chemistry
CHE 111L Applied Chemistry Lab
ART 111 Two Dimensional Design
ECO 231 Principles of Economics I
AMD 205L Basic Clothing Construction

## Sem. Hrs. Second Semester

3
ENG 202 Survey of Engl. Lit. II
PSY 201 General Psychology
ECO 200 Basic Economics
ACC 203 Intro. to Accounting I
HDF 314 Family \& Society
AMD 206L Interior Design
16

Sem. Hrs.

3
3
3
3
3
3
$\underline{3}$
18

## Junior Year

## First Semester

ART 401 History of Art I
MKT 309 Retail Management
MGT 315 Principles of Management
AMD 312L Interior Furnishings
AMD 305 Housing \& Interiors

AMD 411 Directed Field Experience

## Sem. Hrs. Second Semester

3 ENG 205 General Speech
Sem. Hrs.

MDT 252 AutoCAD for Apparel 3
AMD 312L Interior Furnishings 3
AMD 314L Decorative Accents 3
AMD 316L Consumer Textiles II
$1 \frac{3}{5}$

## Summer

6

## Senior Year

Sem. Hrs. Second Semester
1

| FCS | 420 | Senior Seminar |
| :--- | :--- | :--- |
| CET | 405 | Architectural Drawing |

AMD 407 Adv. Interior Design
3
AMD 413L Lighting and Wiring
3
AMD 417 Professional Pract 2
AMD 417 Professional Practices I

AMD 414 Interior Space Planning
AMD 416 Contemporary Design
AMD 418 Professional Practices II Electives

Sem. Hrs.
3
3

3
$\underline{3}$

Electives $\frac{2}{14}$ 14

## APPAREL, MERCHANDISING AND DESIGN MINOR

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

| 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 205L | Basic Clothing Construction | 3 |
| AMD 206L | Interior Design | 3 |
| AMD 208 | Ready-To Wear Apparel Analysis | 2 |
| AMD 302 | Historic Costume | 3 |
| AMD 303 | Fashion Merchandising 1 | 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 410L | Apparel CAD | 3 |
| AMD 411 | Directed Field Experience | 3 |
| 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 | 3 |
| AMD 421 | Problems and Independent Study | 2 |
| AMD 422 | Fashion Study Tour | 3 |
|  |  | 3 |

## COURSE DESCRIPTIONS

AMD 104L Art and Design - 3hrs. A study of the art elements and principles and their application to everyday life. Prerequisite: None (Offered Spring)

AMD 203

AMD 204L

AMD 205L

AMD 206L

AMD 208

AMD 302

AMD 303

AMD 304

AMD 305

AMD 306
AMD 208

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)

Clothing Throughout the Life Cycle - 3 hrs. One, 1-hr. lecture and two 2-hr. lab periods per week. A study of the economic, social, and psychological aspects of clothing as they relate to the acquisition, use, and care of clothing for family members. Domestic and commercial sewing machines are utilized. Prerequisites: AMD 104L, AMD 203 (Offered Spring)

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)

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)

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)

Fashion Merchandising - 3 hrs. Provides basic concepts and practices of retail management and their relationship to the world of fashion. Activities involved in the merchandising of fashion goods, including analyzing and forecasting consumer demand and planning promotional strategies are emphasized. Prerequisite: AMD 303 (Offered Spring)

AMD 307L Flat Pattern Design - 3 hrs. One 1-hour lecture and two 2-hour lab periods per week. An indepth study of the basic principles of flat pattern manipulations and their applications to apparel design. Prerequisites: AMD 104L, AMD 203, 204L and AMD 205L (Offered Fall)

AMD 308 Visual Merchandising - 3 hrs. The study of creative techniques in the display of retail merchandise and their effective application to the enhancement of product salability. Prerequisite: AMD 104L(Offered Spring)

AMD 312L Interior Furnishings - 3 hrs. One, 1-hr. lecture and two, 2-hr. lab periods per week. A study of the design, materials, construction, and production of interior components and accessories from both a contemporary and an historical perspective. Prerequisites: AMD 104L and AMD 205L (On Hold)

AMD 314L Decorative Accents - 3 hrs. One, 1-hr. lecture and two, 2-hr. lab periods per week. The basic design principles applied to pattern, texture, and color in relation to accents for interiors. Emphasis is on practical accessories, window treatments, and added touches with upholstery and wallpaper. Prerequisite: AMD 205L (On hold)

AMD 315 Consumer Textiles I-3 hrs. A study of fibers, yarns, structures, color, and finishing techniques of textiles and textile products with emphasis on the selection of fabrics for specific consumer end uses. Prerequisite: None (Offered Fall)

AMD 316L Consumer Textiles II - 3 hrs . One, 1-hr. lecture and two, 2-hr. lab periods per week. Advanced study of textile fibers, fabrics and products utilizing laboratory testing techniques and safety procedures employed in the evaluation of textiles for specific end uses. Prerequisite: AMD 315 (Offered Spring)

AMD 404L Advanced Clothing and Design-3 hrs. One 1-hour lecture and two 2-hour lab periods per week. Provides techniques in methods of fitting, designing, and advanced clothing construction. Designing and construction of garments for individual figure types and pattern-making through the flat pattern method are emphasized. Prerequisites: AMD 204L and AMD 307L (Offered Spring)

AMD 405L Functional Clothing Design - 3 hrs. One 1-hour lecture and two 2-hour lab periods per week. Development of apparel from a problem-solving perspective to meet aesthetic and functional needs in regard to exceptional proportions, rehabilitation, activity, performing arts, and new technology. Prerequisites: AMD 104L and AMD 205L (Offered Fall, Odd Years)

AMD 406L Draping - 3 hrs. One 1-hour lecture and two 2-hour lab periods per week. The principles and techniques of draping. Dress designing based on the manipulation of fabric on a form. Prerequisites: AMD 104L, AMD 205L, AMD 307L and ART 110 (Offered Spring)

AMD 407
Advanced Interior Design - 3 hrs. Physical, social, psychological, and economic factors influencing the selection of housing for individual and family living, including location, design, structure, and interior. Prerequisite: AMD 206L (On Hold)

AMD 410L Apparel CAD - 3 hrs . One, 1-hr. lecture and two, 2-hr. lab periods per week. Hands-on experience in the application of AutoCAD principles to apparel design, pattern making, and grading. Prerequisites: MDT 252 and AMD 307L (Offered Fall)

AMD 411 Directed Field Experience - 6 hrs. Eight weeks of off-campus, supervised experience in a department store, agency, business establishment, or other approved setting Prerequisite: Permission of advisor (Offered Fall, Spring, and Summer)

AMD 413L Lighting and Wiring - 2 hrs. One 1-hour lecture and 2-hour lab period per week. The qualitative and quantitative aspects of lighting and wiring and their application to interior design and decorating problems. Prerequisites: AMD 206L, and AMD 312L (On Hold)

AMD 414 Interior Space Planning - 3 hrs. The examination and analysis of interior spaces with emphasis on layout, composition, and a variety of decorating media. Prerequisite: AMD 252 (On Hold)

AMD 416 Contemporary Design - 3 hrs. An in-depth study of forms, methods, and materials utilized in the interior and exterior design of contemporary structures. Prerequisites: AMD 301, AMD 312L, AMD 315, AMD 407, and AMD 413L (On Hold)

AMD $417 \quad$ Professional Practices $I$ - 3 hrs. A study of professional and product liabilities, regulations and standards, and quality control materials. Methods and techniques for developing project specifications will be covered. Prerequisite: Permission of Advisor (On Hold)

AMD 418

AMD 419

AMD 421

AMD 422

Professional Practices II-3 hrs. An advanced study of working with clientele to develop project specifications. Four design problems will be completed as preparation for taking professional certification examinations. Prerequisite: AMD 417 (On Hold)

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 entrylevel skills and practical experiences are explored, as well. Prerequisite: Open to senior-level majors and minors on approval of advisor. (Offered Fall)

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)

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<br>256-851-5419

## PURPOSE AND ORGANIZATION

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 multidisciplinary approach to addressing the problems facing families in modern society.

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

## OBJECTIVES

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

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

# HUMAN DEVELOPMENT AND FAMILY STUDIES MAJOR 128 Credit Hours 

## Freshman Year

First Semester

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Composition I |
| MTH | 112 | Pre-Calculus Algebra |
| BIO | 101 | General Biology I |
| BIO | 102 L | General Biology I Lab |
| HIS | 101 | World History I |
| HED | 101 | Personal \& Community Health or |
| NHM | 103 | Nutrition Today |
| FCS | 101 | Intro. to the Profession |

1

Sem. Hrs. Second Semester

$1 \quad{ }^{2}$ ENG 102 Composition II
3 BIO 102 General Biology II

| 3 |
| :--- |
| $\quad-\quad 3$ |

BIO 102L General Biology II Lab 1
3 PED Physical Education Activity 1
AMD 104L Art and Design 3
$\begin{array}{llll}1 & \text { AMD } & \text { 104L } & \text { Art and Design }\end{array} 33$
NHM 102 Principles of Nutrition $\quad \frac{3}{7}$
2 17

Sem. Hrs.
3

3
${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.

## Sophomore Year

## First Semester

| ENG | 203 | World Literature I or |
| :--- | :--- | :--- |
| ENG | 201 | Survey of English Lit. I |
| MUS | 101 | Music Appreciation |
| PSY | 201 | General Psychology |
| SOC | 201 | Intro. to Sociology |
| ECO |  | Economics |
| HDF | 201 | Family Relations |

## Sem. Hrs. Second Semester

| 3 | ENG 204 | World Literature II or | 3 |
| :--- | :--- | :--- | ---: |
| 3 | ENG 202 | Survey of English Lit. II | 3 |
| 3 | HIS 203 | Found. of Amer. His. \& Govt. | 3 |
| 3 | PED | Physical Education Activity | 1 |
| 3 | SWK 200 | Intro. to Social Welfare | 3 |
| 3 | AGB 199 | Computers in Agriculture | 3 |
| $\underline{3}$ | HDF 211 | Child Growth \& Development | $\underline{3}$ |
| 18 |  |  | 16 |

Junior Year

## First Semester

SPE 201 Intro. to Exceptional Children 3
HDF 303 Family Theory 3
HDF 304 Parenting 3
HDF 306 Mid. Childhood \& Adolescence 3 Concentration Elective

## Sem. Hrs. Second Semester

ENG 304 Advanced Composition 3
SWK 205 Gerontology 3
SWK 306 The Art of Interviewing 3
HDF 312L Family Econ. \& Home Mgmt. 3
HDF 314 Family \& Society $\quad \frac{3}{5}$

## Senior Year

First Semester

| FCS | 420 | Senior Seminar |
| :--- | :--- | :--- |
| HDF | 413 | Behavior Management |
| HDF | 415 | Assessment in Human <br> Development \& Family |
| HDF | 416 | Program Development <br> Concentration Electives |

Sem. Hrs. Second Semester

## Sem. Hrs.

$$
3
$$

6
HDF 444 Internship6

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

## CHILD DEVELOPMENT ASSOCIATE (CDA) PREPARATION PROGRAM

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

## HUMAN DEVELOPMENT AND FAMILY STUDIES MINOR

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

| 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 312L | Family Economics and Home Management | 4 |
| HDF 314 | Family and Society | 3 |
| HDF 317 | Child Development Programs and the Community | 3 |
| HDF 318 | Workshop | $3-6$ |
| HDF 401 | Family Financial Counseling | 3 |
| HDF 402 | Preschool Curriculum Development | 3 |
| HDF 410 | Readings and Research in Family Studies | 3 |
| HDF 411 | Infant Programs | 3 |
| HDF 412 | Independent Study | $1-3$ |
| HDF 413 | Behavior Management in the School | 3 |
| HDF 415 | Assessment in Human Development and Family | 3 |
| HDF 416 | Program Development | 3 |
| HDF 444 | Internship | 6 |

# FAMILY AND CONSUMER SCIENCES EDUCATION MAJOR 133 Credit Hours 

## Freshman Year

First Semester

| ORI | 101 | Survival Skills | 1 |
| :--- | :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Composition I | 3 |
| MTH | 112 | Pre Calculus Algebra | 3 |
| BIO | 101 L | General Biology I Lab | 3 |
| BIO | 101 L | General Biology I Lab | 1 |
| HIS | 101 | World History I | 3 |
| HED | 101 | Personal \& Community Health | 2 |
| FCS | 101 | Intro. to the Profession | $\underline{1}$ |

2
1
17
${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.

1
3
3
3 MUS 101 Music Appreciation
NHM 102L Principles of Nutrition 3
1 AMD 104L Art and Design 3
3 AGB 199 Computers in Agriculture $\underline{3}$
Sem. Hrs. Second Semester
ENG 102 Composition II
PED Physical Ed. Activity 1
MUS 101 Music Appreciation 3

## Sophomore Year

## First Semester

ENG 203 World Literature I
CHE 111 Applied Chemistry I
CHE 111L Applied Chemistry I Lab
NHM 201L Science of Food Preparation
HDF 201 Family Relations
AMD 203 Consumer Aspects of Clothing

## Sem. Hrs. Second Semester

3 ENG 204 World Literature II
3 ART 101 Art Appreciation
1 PSY 201 General Psychology
4 AMD 204L Clothing Through. the Life Cycle3
3 HDF 211 Child Growth \& Development 3
EDU 102 Introduction to Teacher Ed.

## Sem. Hrs.

## Junior Year

First Semester

| ECO |  | Economics |
| :--- | :--- | ---: |
| HDF | 314 | Family and Society |

First Semester

| FCS 401 | Family \& Consumer Sciences | 3 |
| :--- | :--- | :--- |
|  | Education |  |
| EDU 409 | Reading in Content Area | 3 |
| EDU 402 | Tests and Measurements | 3 |
| EDU 408 | Educational Psychology | 3 |
| EDU 401 | History \& Philosophy of Ed. | 3 |
| FCS | Elective | $\underline{3}$ |

Sem. Hrs.
HDF 304 Parenting
3
NHM 301L Food Service Operations I
HDF 312L Family Economics \& Home Management

3
EDU 307 Principles of Teaching 3
HIS 203 Found. Of American History 3
PED Physical Education Activity 16

## Senior Year

Sem. Hrs. Second Semester
Sem. Hrs.

EDU 411 Instructional Technology 3
FCS 420 Seminar

## 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)

HDF 211 Child Growth and Development - 3 hrs. A study of the ontogenesis of human growth and learning from conception to young adulthood. Emphasis is placed on the cause and effect interrelationship between natural growth and maturational processes and environmental forces, influence, and expectations. Special emphasis is placed upon birth to age nine. Prerequisite: None (Offered Spring)

HDF 212 Consumer Survival - 1-3 hrs. A compilation of mini-courses designed to provide an analysis of man's interaction in the family and the environment with special emphasis on relationships, family systems, and resource management. Prerequisite: None (On Hold)

HDF 302 Survey of Extension - 3 hrs. Designed to acquaint students with the basic philosophy, principles, and practices of cooperative extension. Emphasis is also placed on qualifications and responsibilities of cooperative extension personnel. Prerequisite: None (On Hold)

HDF 303 Family Theory - 3 hrs. Theory related to development and functions of families. Attention is also given to family systems that enhance or retard achievement of goals. Prerequisite: HDF 201 (Offered Fall, Even Years)

HDF 304

HDF 306 Middle Childhood and Adolescence - 3 hrs. A study of the child between the ages of nine and
Middle Childhood and Adolescence -3 hrs. A study of the child between the ages of nine and
eighteen, in all phases of development as the change occurs from child to adult. Prerequisite: None (Offered Fall, Odd Years)

HDF 307 Motor-Perceptual Development in Early Childhood - 3 hrs. A study of how a child learns to perceive through the instrumentality of his or her body. Laboratory experience to be arranged. Prerequisite: None (Offered Fall, Odd Years)

HDF 308 Guidance in Prepared Environments - 3 hrs . A study of direct and indirect guidance where the environment is arranged in such a manner that the equipment and materials facilitate each child's progress and discovery. Prerequisite: None (Offered Fall)

HDF 309
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)

Human Sexuality - 3 hrs. Principles, practices, and theories of human sexuality, including case studies. An analysis of myths associated with sexual development and interaction. Review of cross-cultural perspectives. Prerequisite: None (On Hold)

HDF 310 Infant and Toddler Development - 3 hrs . Research and new insights in the field of infant and toddler development, the effects of the infant care-giver, interaction, and societal supports.
Opportunities for observation and research, including a laboratory which focuses on assessing infant development are included. Prerequisite: None (Offered Fall, Odd Years)

HDF 311 Theories of Child and Adolescent Development - 3 hrs . Current theories and philosophies in the field of human development which shed light on the marvels and mysteries of the human creature in his being and becoming, are addressed. Prerequisite: None (Offered Spring, Odd Years)

HDF 312L Family Economics and Home Management - 3 hrs. A study of the management of family resources, including credit, buymanship, and consumer issues. Also, includes supervised learning experiences. Prerequisite: None (Offered Spring, Even Years)

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

HDF 317 Child Development Programs and the Community - 3 hrs. An emphasis on the establishment and implementation of wholesome relationships among the child development program, community, home, and family toward the enhancement of educational opportunities for children. Prerequisite: None (On Hold)

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

HDF 401 Family Financial Counseling - 3 hrs. A study of counseling techniques relevant to the financial planning and economic well-being of the family. Prerequisite: None (Offered Spring, Even Years)

HDF 402 Preschool Curriculum Development - 3 hrs . Opportunities for students to design curricula to meet the needs of preschool children. Special attention is given to language arts, mathematics, and social studies concepts. Prerequisite: HDF 211 (Offered Spring)

HDF 410 Readings and Research in Human Development and Family Studies - 3 hrs. An exploration into the writings and research of well-known contributors to the study of human development and the family. Prerequisite: Junior or senior standing (Offered Spring, Odd Years)

HDF 411 Infant Programs - 3 hrs. A study of the organization and implementation of infant programs with emphasis on planning for cognitive, psychomotor and social development. Prerequisite: HDF 211 (Offered Spring)

HDF 412 Independent Study - 1-3 hrs. This course provides an opportunity for students to pursue an avenue of special interest to the student and experience some creative expressions in response to the work of others. Prerequisite: None (Offered Fall, Spring, and Summer)

HDF 413 Behavior Management in the School-3 hrs. The study of the basic understanding of children's behavior, based on age/stage characteristics. Provides theoretical understanding and practical
applications of child guidance techniques in group settings. Prerequisite: PSY 201 (Offered Fall)

HDF 415 Assessment in Human Development and Family - 3 hrs. An analysis and evaluation of individual screening and assessment instruments for use with individuals and families throughout the life cycle. Prerequisite: PSY 201 (Offered Spring, Odd Years)

HDF 416

HDF 444

FCS 303 Career Technical/FCS Education - - 3 hrs. A survey of career technical programs as taught in secondary schools with special emphasis on Family and Consumer Sciences. State required occupational practicum must be culminated during this course. Prerequisite: FCS 101 (Offered Fall, Odd Years)

FCS 401 Family and Consumer Sciences Education-3 hrs. Planning and implementation of curricula in secondary schools and community programs. Making use of innovations and technology in the teaching-learning process. It also provides for the development and use of appropriate evaluation tools and techniques. Prerequisites: FCS 101 and FCS 303 (Offered Fall, Even Years)

FCS 402 Directed Teaching and Seminar - 9 hrs. Supervised observation and teaching in a secondary school. A critical analysis of classroom problems and activities provides major topics of the seminar. Prerequisites: FCS 101, FCS 303, and FCS 401 (Offered Fall and Spring)

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

FCS 420 Senior Seminar - 1 hr. Assists students in fusing the various aspects of Family and Consumer Sciences into a meaningful whole through the study of relevant issues and interaction with professionals. Personal and professional skills needed for success in students' chosen careers are stressed. Prerequisite: Senior status (Offered Fall and Spring)


# NUTRITION AND HOSPITALITY MANAGEMENT PROGRAM AREA <br> 110 Carver Complex - Bonner Wing <br> 256-851-5440 

## PURPOSE AND ORGANIZATION

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

The two options within the Nutrition and Hospitality Management program are General Dietetics and Hospitality Management. The General Dietetics option is approved as a Didactic Program in Dietetics (DPD) by the American Dietetic Association (ADA) and qualifies the student for admission to an accredited Dietetic Internship or an Approved Preprofessional Practice Program (AP4) to become a registered dietitian. The DPD Program is approved by the Commission on Accreditation for Dietetics Education (CADE) of The American Dietetic Association, 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 or approved pre-professional practice programs;
3. provide nutrition resource information to consumers;
4. prepare managers to meet the needs of the food and lodging industry;
5. conduct basic and applied research to increase the students' knowledge base in Nutrition and Hospitality Management.

## PROGRAM REQUIREMENTS

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


# NUTRITION AND HOSPITALITY MANAGEMENT MAJOR Hospitality Management Option 128 Credit Hours 

## Freshman Year

| First Semester |  |  |
| :--- | :--- | :--- |
| ORI | 101 | Survival Skills |
| ${ }^{1}$ ENG | 101 | Composition I |
| MTH | 112 | Pre Calculus Algebra |
| BIO | 101 | General Biology I |
| BIO | 101 L | General Biology I Lab |
| HIS | 101 | World History I |
| NHM | 103 | Nutrition Today |
| FCS | 101 | Intro. to the Profession |

## Sem. Hrs. Second Semester

$1 \quad{ }^{2}$ ENG 102 Composition II 3
3 BIO 102 General Biology II 3
3 BIO 102L General Biology II Lab 1
3 ART 101 Art Appreciation or 3
1 MUS 101 Music Appreciation 3
3 NHM 102L Principles of Nutrition 3
2 NHM 202 Intro. to Hospitality Mgmt. $\underline{3}$
$\underline{1} \quad 16$
${ }^{1}$ ENG 103 may be taken by international students $\quad{ }^{2}$ ENG 104 may betaken by international students.

Sophomore Year

## First Semester

ENG 203 World Literature I or
ENG 201 Survey of English Lit. I
CHE 111 Applied Chemistry I
CHE 111L Applied Chemistry I Lab
ECO 200 Basic Economics
NHM 201L Science of Food Prep.
PSY 201 General Psychology
Sem. Hrs. Second Semester
3 ENG 204 World Literature II or $\quad 3$

3 ENG 202 Survey of English Lit. II 3
3 CHE 112 Applied Chemistry II 3
1 CHE 112L Applied Chemistry Lab 1
3 SOC 201 Sociology or 3
4 HDF 201 Family Relations 3
$\underline{3}$ NHM 301L Food Service Operations 3
17 MDT 252 Auto CAD for Apparel or 3
AGB 199 Computers in Agriculture 3
PED Phy. Ed. Activity $\underline{1}$
17

## Junior Year

## First Semester

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

## Summer

FAS 312 Food Service Health Mgmt.
First Semester
BUS 307 Legal Environment \& Ethics 3
MGT 326 Labor Management Relations 3
NHM 403 Quantity Food Mgmt. 3
NHM 414 Hospitality Management Seminar
Internship 4
Hospitality Electives $\underline{6}$
6 NHM 409L Experimental Foods

# NUTRITION AND HOSPITALITY MANAGEMENT MAJOR <br> General Dietetics Option <br> 133 Credit Hours 

## Freshman Year

## First Semester

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Composition I |
| HIS | 101 | World History I |
| NHM | 103 | Nutrition Today |
| ART | 101 | Art Appreciation or |
| MUS | 101 | Music Appreciation |
| FCS | 101 | Intro to the Profession |
| MTH | 112 | Pre Calculus Algebra |

## First Semester

| ENG | 203 | World Literature I or |
| :--- | :--- | :--- |
| ENG | 201 | Survey of English Literature I |
| BIO | 102 | General Biology II |
| BIO | 102 L | General Biology II Lab |
| CHE | 102 | General Chemistry II |
| CHE | 102 L | General Chemistry II Lab |
| ECO | 200 | Basic Economics |
| NHM | 201L | Science of Food Preparation |

## Sem. Hrs. Second Semester

ENG 102 Composition II
BIO 101 General Biology I
BIO 101L General Biology I Lab
CHE 101 General Chemistry I
CHE 101L General Chemistry I Lab
NHM 102L Principles of Nutrition
MTH 113 Pre Calculus Trigonometry

## Sem. Hrs.

3
3
1
3
1

## Sophomore Year

| Sem. Hrs. | Second Semester |  |  | Sem. Hrs |
| :---: | :--- | :--- | :--- | :---: |
| 3 | ENG | 204 | World Literature II or | 3 |
| 3 | ENG | 202 | Survey of English Lit. II | 3 |
| 3 | BIO | 330 | Microbiology | 3 |
| 1 | BIO | 330L | Microbiology Lab | 1 |
| 3 | CHE | 301 | Organic Chemistry I | 3 |
| 1 | CHE | 301L | Organic Chemistry Lab | 1 |
| 3 | HDF | 314 | Family and Society | 3 |
| $\frac{4}{4}$ | PED |  | Phys. Ed. Activity | $\underline{1}$ |
| 18 |  |  |  | 15 |

## Junior Year

First Semester

| ENG | 205 | General Speech |
| :--- | :--- | :--- |
| BIO | 221 | Human Anatomy \& Phys. I |

Sem. Hrs. Second Semester
3 BIO 222 Human Anatomy \& Phys. II 3
3 BIO 222L Human Anat. \& Phys. II Lab 1

OSM 310 Business Communications II 3
FAS 453L Agricultural Biochemistry 4
NHM 306L Maternal \& Child Nutrition 3
NHM 405L Advanced Human Nutrition $\quad \frac{3}{17}$

## Summer

NHM 402L Nut. \& Hosp Mgmt. Internship

## First Semester

| AGB | 199 | Computers in Agriculture or |
| :--- | :--- | :--- |
| MDT | 252 | Auto CAD for Apparel |
| MGT | 315 | Principles of Management |
| PSY | 403 | Educational Psychology |
| FAS | 403 | Food Science Seminar |
| NHM | 407 | Diet Therapy I |
| SPS | 430 | Biometry |

## 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 Operation | 3 |
| NHM 412 | Special Problems | $1-3$ |
| MKT 308 | Salesmanship | 3 |
| ACC 319 | Managerial Accounting | 3 |

## NUTRITION AND HOSPITALITY MANAGEMENT MINOR

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

| Course \# | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| *NH 102L | Principles of Nutrition | 3 |
| *NHM 201L | Science of Food Preparation | 4 |
| NHM 202 | Introduction to Hospitality Management | 3 |
| NHM 206L | Facilities Planning | 3 |
| NHM 301L | Food Service Operations 1 | 3 |
| NHM 302L | Food Service Operations II | 3 |
| NHM 304 | Professional Beverage Management | 3 |
| NHM 306L | Maternal \& Child Nutrition | 3 |
| NHM 309L | Professional Baking | 3 |
| NHM 310 | Travel, Tourism, and Resort Management | 3 |
| NHM 312L | Buffets and Banquets | 3 |
| NHM 402L | Nutrition and Hospitality Management Internship | 4 |
| NHM 403 | Quantity Food Management | 3 |
| NHM 404L | Nutrition for Early and Middle Childhood | 3 |
| **NHM 405L | Advanced Human Nutrition | 3 |
| NHM 406L | International Cuisine and Catering | 3 |
| NHM 407 | Diet Therapy I | 3 |
| NHM 408L | Diet Therapy II | 2 |
| NHM 410 | Community Nutrition | 3 |
| NHM 411 | Housekeeping Operations | 3 |
| NHM 412 | Special Problems | $1-3$ |
| *Required |  |  |
| **A strong chemistry background is required. |  |  |

## COURSE DESCRIPTIONS

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

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

NHM 201L Science of Food Preparation - 4 hrs. Three, 1-hour lectures and one, 2-hour lab per week. Scientific concepts of basic food cookery integrated into menu planning, preparation, and service of meals. Nutrition and economy of time and cost are emphasized. Prerequisite: NHM 102L (Offered Fall)

NHM 202 Introduction to Hospitality Management - 3 hrs . An introduction to the history of the hotel/motel, restaurant, travel, and tourism industry. The overview will cover the historical development of the industry and three major functions in the various types of establishments or operations. Prerequisite None. (Offered Fall)

NHM 206L Facilities Planning 1-3 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. 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

NHM 312L

NHM 404L Nutrition for Early and Middle Childhood-3 hrs. Two, 1-hour lectures and one, 2-hour lab per week. Course designed to acquaint teachers of young children with basic nutritional principles and their applications for nutrition education. Emphasis is placed on methods and techniques for teaching nutrition to young children. Prerequisite: None (Offered Fall and Spring)

NHM 405L Advanced Human Nutrition - 3 hrs. Two, 1-hour lectures and one, 2-hour lab per week. A study of the physiological and chemical factors involved in the absorption and metabolism of food nutrients. Prerequisites: CHE 302, CHE 302L, BIO 221, BIO 221L, BIO 222, BIO 222L, NHM 102, and FAS 453L (Offered Spring)

NHM 406L International Cuisine and Catering - 3 hrs . Two 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 Diet Therapy I-3 hrs. A study of the modification of normal diets in the applications of nutrition therapy. Prerequisite: NHM 405L. (Offered Fall)

NHM 408L Diet Therapy II- 3 hrs. Two, 1-hour lectures and one, 3-hour lab per week. Practical experience in clinical dietetics and in the community, (i.e., hospitals, dialysis units, nursing homes, etc.) Prerequisite: NHM 407 (Offered Fall)

NHM 409L Experimental Foods -3 hrs. Two 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 how this knowledge can be used to improve the quality of food products. Prerequisite: NHM 201L (Offered Spring)

NHM 410L Community Nutrition - 3 hrs. Two one-hour lectures and one, three-hour lab per week. A study of the nutritional needs of a community. The exploration, identification, and analysis of nutritional needs of various target groups: schools, elderly, income, etc. Prerequisite: NHM 102L (Offered Spring, Odd Years)

NHM 411

NHM 412

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 

125A Carver Complex Thomas Wing

256-851-5445

The Department of Food and Animal Sciences offers B.S. degree programs in Food Science and Technology and Animal Science. The Department also offers a Master of Science and Doctor of Philosophy in Food Science.

The major in Food Science and Technology, which is certified by the Institute of Food Technologies, 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. Majors electing any of the approved minors can select a minimum of 18 hours of which 6 hours must be at 300 level or above from the minor field.

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 for 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 Organizations

## Alpha Zeta Honorary Society

## Block and Bridle Club

Food Science Club
Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS)
Participation in student organizations is encouraged as this provides opportunities for networking and exposure to your chosen professional area.


# FOOD SCIENCE AND TECHNOLOGY MAJOR WITH MINOR IN CHEMISTRY 

131 Credits Hours

## Freshman Year

| First |  | Semester |  | Sem. Hrs. | Second Semester |  |
| :--- | :--- | :--- | :---: | :--- | :--- | :---: |
| ORI | 101 | Survival Skills | 1 | ${ }^{2}$ ENG | 102 |  |
| ${ }^{1}$ ENG | 101 | Composition I | 3 | MTH | 113 |  |
| MTH | 112 | Pre-calculus Algebra | 3 | BIO | 103 |  |
| CHE | 101 | General Chemistry I | 3 | BIO | 103 L |  |
| CHE | 101 L | General Chemistry I Lab | 1 | CHE | 102 |  |
| FAS | 102 | Intro to Food Science | $\underline{3}$ | CHE | 102 L |  |
|  |  |  | 14 | FAS | 101 |  |

${ }^{1}$ ENG 103 may be taken by international students
${ }^{2}$ ENG 104 may be taken by international students

## Sophomore Year

| First |  |  |
| :--- | :--- | :--- |
| Semester |  |  |
| ENG | 203 | Humanities I |
| HIS |  | History |
| AGB | 199 | Computers in <br> Agriculture |
| ART | 101 | Art Appreciation or |
| MUS | 101 | Music Appreciation |
| ${ }^{3}$ Social Science |  |  |


| Sem. Hrs. | Second Semester |  | Sem. <br> Hrs. |  |
| :---: | :--- | :--- | :--- | ---: |
| 3 | ENG | 204 | Humanities II | 3 |
| 3 | MTH | 125 | Calculus I | 4 |
| 3 | HIS |  | History | 3 |
|  |  |  |  |  |
|  | FAS | 351 | Nutrition \& Metabolism | 3 |
| 3 | ${ }^{4}$ CHE | 221 | Analytical Chemistry | 3 |
| $\underline{3}$ | ${ }^{4}$ CHE | 221 L | Analytical Chemistry Lab | $\underline{1}$ |
| 15 |  |  |  | 17 |

${ }^{3}$ UPL 103, PSY 201, SOC 201, PHL 201, or GEO 213
${ }^{4}$ Not needed for business, nutrition, and animal science minors

Junior Year
First

| Semester |  |  |
| :--- | :--- | :--- |
| MTH | 126 | Calculus II |
| BIO | 330 | Microbiology |
| BIO | 330 L | Microbiology Lab |
| CHE | 301 | Organic Chemistry |
| CHE | 301 L | Organic Chemistry Lab |
| ECO | 200 | Basic Economics |
| FAS | 402 | Meat Science \& Tech. or |
| FAS | 422 | Poultry Products Tech. |

General Speech
Sem. Hrs.

General Physics I
Sensory Evaluation
Organic Chemistry
Organic Chemistry II Lab Agricultural Biochemistry

## Senior Year

| First |  |  |
| :--- | :--- | :--- |
| Semester |  |  |
| SPS | 430 | Biometry |
| FAS | 401L | Food Microbiology |
| FAS | 407L | Food Chemistry |
| FAS | 461L | Food Engineering |

Sem. Hrs. Second Semester

| 4 | ENG | 205 |
| :--- | :--- | :--- |
| 3 | PHY | 103 |
| 1 | FAS | 306 |
| 3 | CHE | 302 |
| 1 | CHE | 302 L |
| 3 | FAS | 453 L |

$\underline{3}$
18

Sem. Hrs. Second Semester

| FAS | 403 |
| :--- | :--- |
| FAS | 408 L |
| FAS |  |
| FAS | 472 L |

## Sem Hrs.

| Composition II | 3 |
| :--- | :--- |
| Pre-calculus Trigonometry | 3 |
| Principles of Biology | 3 |
| Principles of Biology Lab | 1 |
| General Chemistry II | 3 |
| General Chemistry II Lab | 1 |
| Food and Survival of Man | $\underline{2}$ |

Sem.
$\left.\begin{array}{lllllll}\text { FAS } & 450 & \underline{3} & \text { Regulations of Food } & \text { FAS } & 490 & \text { Food Science Capstone }\end{array}\right] \underline{3}$

Students taking additional minors must take extra courses as indicated.

| Minor |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total Hours | Course |  |  | Sem. Hrs. |
| Animal Science | 129 | FAS | 352 | Feeds and Feeding | 3 |
|  |  | FAS | 353 | Animal Breeding and Genetics in place of FAS elective | 3 |
|  |  | FAS | 112 | Introduction to Animal Science | 3 |
| Business | 135 | ACC | 203 | Introduction to Accounting I | 3 |
|  |  | ACC | 204 | Introduction to Accounting II | 3 |
|  |  | MKT | 306 | Principles of Marketing | 3 |
|  |  | ECO | 223 | Principles of Economics | 3 |
|  |  | MGT | 315 | Principles of Management in place of FAS Elective | 3 |
| Nutrition | 135 | NHM | 102 | Principles of Nutrition | 3 |
|  |  | NHM | 201 | Science of Food Preparation | 3 |
|  |  | NHM |  | *Electives | 9 |

*3 hrs. of FAS elective may be substituted by 3 hrs. of NHM elective
*NHM electives: NHM 306, 405, 407, 408L, 409L and 410
Electives

| Course \# |  | Course Title | Sem.Hrs. |
| :--- | :--- | :--- | :---: |
| FAS | 442 | Fruits, Vegetables, Cereal Products | 3 |
| FAS | 405 | Special Problems | $2-3$ |
| FAS | 312 | Food Service Health Management | 1 |
| FAS | 112 | Introduction to Animal Science | 3 |

## ANIMAL SCIENCE MAJOR WITH MINOR IN CHEMISTRY

132 Credits Hours

| First Semester |  |  |
| :--- | :--- | :--- |
| ORI | 101 | Survival Skills |
| ${ }^{1}$ ENG | 101 | Communication Skills I |
| MTH | 112 | Pre-calculus Algebra |
| CHE | 101 | General Chemistry I |
| CHE | 101 L | General Chemistry I Lab |
| FAS | 112 | Intro to Animal Science |


| Sem. Hrs. | Second Semester |  |  | Sem. Hrs. |
| :---: | :--- | :--- | :--- | :---: |
| 1 | FAS | 101 | Food and Survival of Man | 2 |
| 3 | ${ }^{2}$ ENG | 102 | Communications Skills II | 3 |
| 3 | MTH | 113 | Pre-calculus Trigonometry | 3 |
| 3 | HIS |  | History | 3 |
| 1 | CHE | 102 | General Chemistry II | 3 |
| $\underline{3}$ | CHE | 102 L | General Chemistry II Lab | $\underline{1}$ |
| 14 |  |  |  | 15 |

${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.
First Semester
FAS $102 \quad$ Intro. To Food Science

Sophomore Year
Sem. Hrs. Second Semester
3 ENG 204 Humanities II

Sem. Hrs.
3

| ENG | 203 | Humanities I | 3 | HIS | History | 3 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| BIO | 103 | Principles of Biology | 3 | ART | 101 | Art Appreciation or |  |
| BIO | $103 L$ | Principles of Biology Lab | 1 | MUS | 101 | Music Appreciation | 3 |
| FAS |  | Elective | 3 | AGB | 199 | Computers in Agriculture | 3 |
| CHE | 221 | Analytical Chemistry | 3 | FAS | 352 | Feeds and Feeding | 3 |
| CHE | $221 L$ | Analytical Chemistry Lab | $\underline{1}$ | FAS |  | Elective | $\underline{3}$ |
|  |  |  | 17 |  |  | 18 |  |

Junior Year

| First Semester |  |  |
| :--- | :--- | :--- |
| ENG | 205 | General Speech |
| MTH | 125 | Calculus I |
| CHE | 301 | Organic Chemistry I |
| CHE | 301 L | Organic Chemistry I Lab <br> ${ }^{3}$ Social Science <br> Elective |
| FAS |  |  |
| ${ }^{3}$ UPL 103, PSY 201, SOC 201, PHL 201, or GEO 213 |  |  |


| Sem. Hrs. | Second Semester |  |  | Sem. Hrs. |
| :---: | :--- | :--- | :--- | :---: |
| 3 | PHY | 103 | General Physics I | 4 |
| 4 | ECO | 200 | Basic Economics | 3 |
| 3 | AGB | 322 | Farm Management | 3 |
| 1 | FAS | 351 | Nutrition \& Metabolism | 3 |
| 3 | CHE | 302 | Organic Chemistry | 3 |
| $\underline{3}$ | CHE | 302 L | Organic Chemistry II Lab | $\underline{1}$ |
| 17 |  |  |  | 17 |

## Senior Year

| First |  | Semester |
| :--- | :---: | :--- |
| SPS | 430 | Biometry |
| FAS | 353 |  <br> Genetics |
| FAS | 403 | Seminar <br> FAS |
| 430L | Reproductive Physiology <br> FAS |  |
| Electives |  |  |


| Sem. Hrs. | Second Semester |  |  |
| :---: | :--- | :--- | :--- |
| 3 | FAS | 492 | Animal Science Capstone |
| 3 | FAS | 408L | Food Analysis |
|  |  |  |  |
| 1 | FAS | 453L | Agricultural Biochemistry |
| 4 | FAS |  | Electives |
| $\underline{6}$ |  |  |  |
| 17 |  |  |  |

Sem. Hrs.

Students taking additional minors must take extra courses as indicated.

| Minor | Total Hours | Cours |  |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Agribusiness | 131 | AGB | 423 | Agricultural Marketing in place of CHE 301 and CHE 301L | 3 |
|  |  | AGB | 425 | Agricultural Policy in place o 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 | 137 | BIO | 330 | Microbiology | 3 |
|  |  | BIO | 330L | Microbiology Lab | 1 |
|  |  |  |  | (Both above courses in place of AGB 322 Farm Management) |  |
|  |  | FAS | 401L | Food Microbiology | 4 |
|  |  | FAS | 407L | Food Chemistry | 4 |

Electives

| Course \# |  | Course Title | Sem.Hrs. |
| :--- | :--- | :--- | :---: |
| FAS | 311 | Fundamentals of Dairy Science | 3 |
| FAS | 325 | Fundamentals of Poultry Science | 3 |
| FAS | 326 | Poultry Production \& Management | 3 |
| FAS | 354 | Beef Cattle Production | 3 |
| FAS | 355 | Livestock Judging | 3 |


| FAS | 356 | Swine Production | 3 |
| :--- | :--- | :--- | ---: |
| FAS | 405 | Special Problems | $2-3$ |
| FAS | 312 | Food Service Health Management | 1 |
| FAS | 450 | Regulations of Food Safety | 3 |

## COURSE DESCRIPTIONS

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

FAS 101 Food \& Survival of Man - 2 hrs. The study of most common information regarding food and its role in human society. Prerequisite: None (Offered Fall and Spring)

FAS 102 Introduction to Food Science - 3 hrs. Food Science and its relation to agriculture; opportunities in the various fields of food industry; trends in procurement, management, processing, distribution and utilization of food; food raw materials and constituents; biochemical aspects of food composition; food spoilage; and principles of food processing and preservation are covered. Prerequisite: None (Offered Fall)

FAS 112 Introduction to Animal Science - 3 hrs. An introduction to the total animal industry covering dairy and beef cattle, swine, poultry, sheep, goats, rabbits, and horses. The material is divided by topics such as nutrition, reproduction, breeding, genetics, milk secretion, markets, meat processing and others, which include consideration of all species. Students will develop an appreciation for animal science and the application of sound business principles. (Prerequisite: None) (Offered Fall)

FAS 306 Sensory Evaluation - 3 hrs. A study of principles and methodology of sensory evaluation; application of methods; instrumentation in physical evaluation of food; and analysis of sensory and instrumental data. Prerequisite: FAS 102 (Offered Spring)

FAS 311 Fundamentals of Dairy Science - 3 hrs. Introduction to the fundamentals of dairy 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 foodborne illness hazards in their operations. Students are introduced to a system that 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)

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
FAS 351 103, 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. 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 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 407L Food Chemistry - 4 hrs. Composition, structure, and functional properties of food constituents and their contributions to the physical, organoleptic, and nutritive characteristics of food products, as well as the chemical reactions occurring during food processing, storage and utilization by man are addressed. Laboratory experience is integrated with this content. Prerequisite: FAS 453L (Offered Fall)

FAS 408L Food Analysis - 4 hrs. The use of physical and chemical methods of analyzing foods and their application to the food and feed industry. Students apply principles to projects in a laboratory session. Prerequisite: FAS 407 (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 $430 \quad$ Physiology of Reproduction - 4 hrs. Study of early fetal development and differentiation of the gonads and secondary sex organs. Anatomy and physiology of male and female reproductive tracts, endocrinology of reproduction, fertilization, cleavage and implantation, pregnancy diagnosis and parturition, causes of reproductive failure, and the use of artificial insemination and embryo transfer to improve reproductive efficiency are addressed in this course. Prerequisite: Senior standing (Offered Spring)

FAS 422 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 situation. Prerequisite: Senior standing (Offered Spring)

FAS 450 Regulations of Food Safety and Quality - 3 hrs. The study of the history of food law; steps in establishing food laws; food laws and regulation; various agencies involved in enforcing food quality and product quality evaluation methods will be presented to set forth examples of producers', processors', consumers' and regulators' concerns in maintaining food quality levels.
Prerequisite: Consent of instructor (Offered Spring)
FAS 453L Agricultural Biochemistry - 4 hrs. An introduction to the fundamentals of biochemistry with emphasis on food and plant biochemistry. The laboratory deals with basic techniques in biochemical analyses. A laboratory session adds practical experience to the theory taught. Prerequisites: CHE 202, CHE 202L, CHE 301, and CHE 301L (Offered Spring)

FAS 461L Food Engineering - 4 hrs. Fundamentals of heat transfer, fluid flow, evaporation, drying, and other unit operations in food processing industries will be presented. Students will be acquainted with application of engineering principles and concepts to the processing of foods. An integrated laboratory session provides demonstration of principles. Prerequisites: PHY 103 and MTH 172 (Offered Fall)

FAS 472L Food Processing - 4 hrs. A course involving the integration of basic principles and practices of unit operation for food processing and preservation. Practical experience in food processing is afforded by an integrated laboratory period. Prerequisite: FAS 461L (Offered Spring)

FAS 490 Food Science Capstone - 3 hrs. A senior level course that 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 course in Animal Science (Offered Spring)

SPECIAL COURSES 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 |



DEPARTMENT OF PLANT AND SOIL SCIENCE<br>Room 213C Carver Complex Thomas Wing 256-851-5462

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

An extensive research program provides unique opportunities for undergraduate students enrolled in the department to gain valuable practical experience in their chosen field of study. Under this program, several parttime 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, or Forestry. Generally, 18 hours of course work are necessary to attain a minor in any of these areas.

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

## STUDENT ORGANIZATIONS

## Minorities in Agriculture, Natural Resources, and Related Sciences (MANNRS) <br> Alpha Zeta <br> Graduate Student Association - Department of Plant and Soil Science <br> Horticulture Club <br> Society of American Foresters - Student Chapter

## PLANT SCIENCE PROGRAMS

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

## PLANT SCIENCE - HORTICULTURE OPTION CURRICULUM 128 Credit Hours

| First Semester |  | Freshman Year |  |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Sem. Hrs. Second Semester S |  |  |  |
| ORI 101 | Survival Skills | 1 | ${ }^{2}$ ENG 102 | Composition II | 3 |
| ${ }^{1}$ ENG 101 | Composition I | 3 | MTH 113 | Pre-Calculus Trig. | 3 |
| MTH 112 | Pre-Calculus Algebra | 3 | CHE 102 | General Chemistry II | 3 |
| CHE 101 | General Chemistry I | 3 | CHE 102L | General Chemistry II Lab | 1 |
| CHE 101L | General Chemistry I Lab | 1 | SPS 170 | Intro to Environmental Science | ce 3 |
| SPS 101 | Intro to Plant Science | $\underline{4}$ | ${ }^{3}$ UPL 103 | Community and You | $\underline{3}$ |
|  |  | 15 |  |  | 16 |
| ENG 103 may be taken by international students. |  |  |  |  |  |
| ${ }^{2}$ ENG 104 may be taken by international students. |  |  |  |  |  |
| ${ }^{3}$ HIS 101, | IS 102, HIS 201, HIS 202, | 203, or | 304, may b | substituted |  |




| Senior Year |  |  |  |  |  |
| :--- | :--- | :---: | :---: | :---: | :---: |
| First Semester | Sem. Hrs. Second Semester |  |  | Sem. Hrs. |  |
| BIO | 311 | Principles of Genetics I | 3 | SPS | Horticulture Electives |


| SPS |  | Required Courses | $\underline{6}$ |  |
| :---: | :---: | :---: | :---: | :---: |
| Horticulture Required Courses: |  |  |  |  |
| (Must be completed during the sophomore, junior, and senior years) |  |  |  |  |
| Cou |  |  | Course Title | Sem. Hrs. |
| SPS | 421 |  | Plant Propagation | 3 |
| SPS | 430 |  | Biometry | 3 |
| SPS | 432 |  | Plant Disease Diagnosis | 4 |
| SPS | 441 |  | Phyto-physiology | 4 |
| SPS | 452 |  | Soil Fertility and Fertilizers | 3 |
| SPS | 491 |  | Seminar | 1 |

Electives: (Five courses must be taken.)

| Course \# |  | Course Title | Sem. Hrs. |
| :--- | :--- | :--- | ---: |
| SPS | 323 | Plant Materials for Landscape Design | 3 |
| SPS | 325 | Turf Management | 3 |
| SPS | 327 | Floriculture | 3 |
| SPS | 401 | Commercial Nursery and Greenhouse Management | 4 |
| SPS | 420 | Vegetable Crop Production | 3 |
| SPS | 422 | Landscape Design and Construction | 4 |
| SPS | 428 | Fruit Crops Production | 3 |

## PLANT SCIENCE - CROP SCIENCE OPTION CURRICULUM 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 | MTH 113 | Pre Calculus-Trig. | 3 |
| MTH | 112 | Pre Calculus Algebra | 3 | CHE 102 | General Chemistry I | 3 |
| CHE 101 | General Chemistry I | 3 | CHE 102L | General Chemistry II Lab | 1 |  |
| CHE 10IL | General Chemistry Lab | 1 | SPS 170 | Intro to Environmental Science | 3 |  |
| SPS 101 | Intro to Plant Science | $\underline{4}$ | ${ }^{3}$ UPL 103 | Community and You | $\underline{3}$ |  |
|  |  |  | 15 |  |  |  |

${ }^{1}$ ENG 103 may be taken by international students. ${ }^{2}$ ENG 104 may be taken by international students.
${ }^{3}$ HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304, may be substituted

## Sophomore Year

## First Semester

${ }^{5}$ Literature
BIO 101 General Biology I
BIO 10IL General Biology I Lab
CHE 201 Analytical Chemistry I
CHE 201L Analytical Chemistry I Lab ${ }^{6}$ Social Science 251 Introduction to Soil Science

## Sem. Hrs. Second Semester

3
3
13

1
3
4
${ }^{5}$ Literature
Sem .Hrs.
3

MTH 121 Pre-Calculus or 3
MTH 171 Calculus I 4
${ }^{4}$ Health Science 2
BIO 102 General Biology II 3
BIO 102L General Biology II Lab 1
${ }^{3}$ Social Science 3
${ }^{6}$ PHL 201, PSY 201, SOC 201, or GEO 213

Junior Year

| First Semester |  |  |
| :--- | :--- | :--- |
| Hrs. |  |  |
| ENG | 304 | Advanced Composition |
| BIO | 203 | General Botany I |
| BIO | $203 L$ | General Botany Lab I |
| SPS |  | Required Courses |
| MUS | 101 | Music Appreciation |

Sem. Hrs. Second Semester

Sem.

## Senior Year

## First Semester

Sem. Hrs. Second Semester
Sem.
Hrs.

| BIO | 344 Prin. of Plant Taxonomy | 3 | SPS | Required Courses | 11 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| BIO | 344L Prin. of Plant Tax. Lab or | 1 |  | Advisor Approved Electives | 3 |
| BIO | 451 Plant Anatomy | 3 |  |  | 14 |
| BIO | 451 L Plant Anatomy Lab | 1 |  |  |  |
|  | Advisor Approved Electives | 3 |  |  |  |
| SPS | Required Courses | $\underline{8}$ |  |  |  |
|  |  | 15 |  |  |  |

Required Courses:
(Must be completed during the junior and senior years)

Course \#
SPS 310
SPS 411
SPS 416
SPS 430
SPS 431
SPS 432
SPS 441
SPS 452
SPS 491

Course Title
Field Crop Production 3
Weed Science 3
Principles of Sustainable Agriculture 3
Biometry 3
Principles of Plant Breeding 3
Plant Disease Diagnosis 4
Phyto-physiology 4
Soil Fertility and Fertilizers 3
Seminar 1

## ENVIRONMENTAL SCIENCE PROGRAMS

The curriculum 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 curriculum 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.

## ENVIRONMENTAL SCIENCE - SOIL SCIENCE OPTION CURRICULUM 128 Credit Hours <br> Freshman Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Composition I |
| MTH | 112 | Pre-Calculus Algebra |
| CHE | 101 | General Chemistry I |
| CHE | 101 | General Chemistry I Lab |
| SPS | 101 | Intro to Plant Science |

1 ²ENG 102 Composition II 3
3 MTH 113 Pre-Calculus Trig. 3
3 CHE 102 General Chemistry II 3
3 CHE 102L General Chemistry II Lab 1
1 SPS 170 Intro to Environmental Science 3
$\underline{4} \quad$ UPL $103 \quad{ }^{3}$ Community and You $\underline{3}$
15 16
${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.
${ }^{3}$ HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 , may be substituted

| First Semester |  |  | Sophomore Year |  |  |  | Sem. Hrs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Sem. Hrs. Second Semester |  |  |  |  |
|  |  | ${ }^{5}$ Literature | 3 |  |  | ${ }^{5}$ Literature |  |
| BIO | 101 | General Biology I | 3 | MTH | 121 | Pre Calculus or | 3 |
| BIO | 101L | General Biology I Lab | 1 | MTH | 171 | Calculus I | 4 |
| CHE | 201 | Analytical Chemistry I | 3 | BIO | 102 | General Biology II | 3 |
| CHE | 201L | Analytical Chemistry I Lab | 1 | BIO | 102L | General Biology II Lab | 1 |
|  |  | Social Science | 3 |  |  | ${ }^{3}$ Social Science | 3 |
| SPS | 251 | Introduction to Soil Science | 4 |  |  | ${ }^{4}$ Health Science | 2 |
|  |  |  | 18 | AGB | 199 | Computers in Agriculture | $\underline{3}$ |
|  |  |  |  |  |  |  | 18 |

${ }^{3}$ HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304
${ }^{4}$ FAS 101, HED 101, NHM 103
${ }^{5}$ ENG 201, ENG 202, ENG 203, ENG 204, or ENG 301, or ENG 304;
${ }^{6}$ PHL 201, PSY 201, SOC 201 or GEO 213

## First Semester

| ENG | 304 | Advanced Composition |
| :--- | :--- | :--- |
| CHE | 301 | Organic Chemistry I |
| CHE | 301 L | Organic Chemistry I Lab |
| PHY | 103 | General Physics |
| MUS | 101 | Music Appreciation or |

Junior Year Sem. Hrs. Second Semester

## Sem. Hrs

ENG 205 General Speech 3
CHE 302 Organic Chemistry II 3
CHE 302L Organic Chemistry II Lab 1
ECO 223 Principles of Macro Economics 3
SPS Required Course $\quad 7$


## ENVIRONMENTAL SCIENCE OPTION CURRICULUM 128 Credit Hours

## Freshman Year

First Semester

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Composition I |
| MTH | 112 | Pre-Calculus Algebra |
| CHE | 101 | General Chemistry I |
| CHE | 101 L | General Chemistry I Lab I |
| SPS | 101 | Intro to Plant Science |

15

## Sem. Hrs. Second Semester

$1{ }^{2}$ ENG 102 Composition II 3
3 MTH 113 Pre-Calculus Trig. 3
3 CHE 102 General Chemistry II 3
3 CHE 102L General Chemistry II Lab 1
1 SPS 170 Intro to Environmental Science 3
$\underline{4} \quad{ }^{3}$ UPL 103 Community and You $\quad \frac{3}{16}$

## Sem. Hrs.

3
${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.
${ }^{3}$ HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 , may be substituted

## Sophomore Year

First Semester
${ }^{5}$ Literature
BIO 101 General Biology I
BIO 101L General Biology I Lab
CHE 201 Analytical Chemistry I

Sem. Hrs. Second Semester
3
3
1 MTH 171 Calculus I
$3 \quad$ BIO 102 General Biology II

## Sem. Hrs.

3
3
3
3

| CHE | 201L | Analytical Chemistry I Lab | 1 | BIO | 102L | General Biology II Lab | 1 |
| :--- | :--- | :--- | ---: | ---: | ---: | :--- | ---: |
| GEO | 213 | Principles of Geography | 3 |  | Social Science | 3 |  |
| SPS | 251 | Introduction to Soil Science | $\underline{4}$ |  |  | ${ }^{4}$ Health Science | 2 |
|  |  |  | 18 | AGB | 199 | Computers in Agriculture | $\underline{3}$ |
|  |  |  |  |  | $18-19$ |  |  |

${ }^{3}$ HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304
${ }^{4}$ FAS 101, HED 101, NHM 103
${ }^{5}$ ENG 201, ENG 202, ENG 203, ENG 204, or ENG 301, or ENG 404

## Junior Year

## First Semester

| ENG | 304 | Advanced Composition | 3 | ENG | 205 | General Speech |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| CHE | 202 | Analytical Chemistry II | 3 | PHY | 103 | General Physics I |

## Senior Year

## First Semester

| BIO | 330 | Microbiology | 3 |
| :--- | :--- | :--- | ---: |
| BIO | 330 L | Microbiology Lab | 1 |
| SPS |  | Required Courses | 8 |
|  |  | Advisor Approved Electives | $\underline{2}$ |
|  |  | 14 |  |

Sem. Hrs. Second Semester
SPS Required Courses
Environmental Science Electives

Sem. Hrs.

## Required Courses:

(Must be completed during the junior and senior years)

Course \#
SPS 406
SPS 430
SPS 451
SPS 453
SPS 470
SPS 472
SPS 491

Course Title
Soil Microbiology
Biometry
Che .
Chemistry of Toxic Substances 3
Hazardous Waste Management 3
Soil, Plant, and Water Analysis 4
Soil, Water, and Air Pollution 3
Seminar

Sem. Hrs.
4
3

1

## Environmental Science Electives: (Must select six hours.)

Course \#
BIO 324
SPS 416
112
SPS 486 Environmental Policy and Law ..... 3
UP 442 Planning and the Environment ..... 3
SPS 475
Principles of Wetlands ..... 3
SPS 452 Soil Fertility and Fertilizers ..... 3

## FORESTRY PROGRAMS

## Mission Statement

The Center for Forestry and Ecology (CFE), as 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. The undergraduate degree program is designed to educate broad-based, ecologically sensitive resource managers. Such a background will enable them to succeed as professional land managers and practice conservation of forests and other natural resources for multiple uses. Faculty and graduate students in the CFE conduct basic and applied research on forest ecosystems and resources in northern Alabama and beyond to provide needed information to land managers, resource planners, scientists and society. As part of a Historically Black College or University, the CFE seeks to address the needs of capable students who as a group are underrepresented in the forestry profession, as well as the minority, forest-landowner community that has historically been underserved by the forestry profession.

## Description

Meeting the increasing demands for both economical forest products and environmentally sound forestry practices requires highly skilled professionals. This program integrates biological, physical, and social aspects of forest management, while providing students with a fundamental appreciation for the various resources associated with forests. Two options are available. The Forest Management Option is designed for those students who desire immediate employment in forestry. Those students who desire a more specialized education (in such areas as soils, biotechnology, protection, molecular genetics, etc.) with the intention of pursuing postgraduate education, may elect to pursue the more flexible Forest Science Option. In addition to these options, several minors are also available to students.

## First Semester

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Composition I |
| MTH | 112 | Pre-Calculus Algebra |
| CHE | 101 | General Chemistry I Lab |
| CHE | 101L | General Chemistry I Lab |
| SPS | 281 | Introduction to Forestry |

## FORESTRY

## Forest Management Option

 128 Credit Hours
## Freshman Year

## Sem. Hrs. Second Semester

## Sem. Hrs.

1 2 ENG 102 Composition II 3
3 MTH 113 Pre-Calculus Trig 3
3 CHE 102 General Chemistry II 3
3 CHE 102L General Chemistry II Lab 1
1 BIO 101 General Biology I 3
3 BIO 101L General Biology I Lab 1

[^0]${ }^{1}$ ENG 103 may be taken by international students $\quad{ }^{2}$ ENG 104 may be taken by international students. ${ }^{3}$ HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304, may be substituted

## Sophomore Year

| First Semester |  |  | Sem. Hrs. Second Semester S |  |  |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | ${ }^{5}$ Literature | 3 |  |  | ${ }^{5}$ Literature | 3 |
| BIO | 203 | General Botany I | 3 | BIO | 204 | General Botany I | 3 |
| BIO | 203L | General Botany I Lab | 1 | BIO | 204L | General Botany I Lab | 1 |
|  |  | ${ }^{6}$ Social Science | 3 |  |  | ${ }^{6}$ Social Science | 3 |
| SPS | 251 | Introduction to Soil Science | 4 |  |  | ${ }^{4}$ Health Science | 2 |
| SPS | 282 | Dendrology | $\underline{3}$ | ECO | 231 | Principles of Macro Economics | ics 3 |
|  |  |  | 17 | AGB |  | Computers in Agriculture | $\underline{3}$ |
|  |  |  |  |  |  |  | 18 |
| ${ }^{3}$ HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304 ${ }^{5}$ ENG 201, ENG 203, ENG 204, ENG 301, or ENG 404 |  |  |  |  | ${ }^{4}$ FAS 101, HED 101, NHM 103 ${ }^{6}$ PHL 201, PSY 201, SOC 201, or GEO 213 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

## Summer

SPS 380 Forestry Field Techniques
6

## Junior Year

## First Semester

| ENG 304 | Advanced Composition | 3 | ENG 205 | General Speech | 3 |
| :--- | :--- | :--- | :--- | :--- | ---: |
| CET 205 | Elementary Plane Surveying | 3 | SPS | Required Courses | $\underline{14}$ |
| MUS 101 | Music Appreciation or |  |  |  | 17 |
| ART 101 | Art Appreciation | 3 |  |  |  |
| SPS |  | Required Courses | $\underline{9}$ |  |  |

Senior Year

First Semester
Sem. Hrs. Second Semester
Sem.
Hrs.

| MGT 315 | Principles of Management or |  | SPS | Required Courses |
| :---: | :---: | :---: | :---: | :---: |
| AGB 421 | Agribusiness Management | 3 |  | Advisor Approved Electives |
| SPS | Required Courses | $\underline{9}$ |  |  | 12

## Required Courses:

(Must be completed during the junior, and senior years)

| Course \# |  |  |
| :--- | :--- | :---: |
| SPS | 370 |  |
| SPS | 371 |  |
| SPS | 373 |  |
| SPS | 374 |  |
| SPS | 375 |  |
| SPS | 381 |  |
| SPS | 387 |  |
| SPS | 430 |  |
| SPS | 471 |  |
| SPS | 480 |  |
| SPS | 483 |  |
| SPS | 489 |  |
| SPS | 491 |  |

Course Title
Natural Resource Management ..... 3Sem. Hrs.
Forest Mensuration ..... 4
Forest Protection ..... 3
Silvics ..... 3
Silviculture ..... 4
Wood Products ..... 3
Wildlife-Forestry Relationships ..... 3
Biometry ..... 3
Use and Interpretation of Aerial Photography ..... 3
Natural Resource Policy ..... 3
Forest Resource Economics ..... 3
Forest Ecological Management ..... 3
Seminar ..... 1

FORESTRY
Forest Science Option
128 Credit Hours

## Freshman Year

First Semester
Hrs.

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Composition I |
| MTH | 112 | Pre-Calculus Algebra |
| CHE | 101 | General Chemistry I |
| CHE | 101 L | General Chemistry Lab I |
| SPS | 281 | Introduction to Forestry |

## Sem. Hrs. Second Semester

## Sem.

1 ²ENG 102 Composition II 3
3 MTH 113 Pre-Calculus Trig 3
3 CHE 102 General Chemistry II 3
3 CHE 102L General Chemistry Lab II 1
1 BIO 101 General Biology I 3
$3 \quad$ BIO 101L General Biology I Lab 1
${ }^{3}$ UPL 103 Community and You $\quad \underline{3}$
14
17
${ }^{1}$ ENG 103 may be taken by international students $\quad{ }^{2}$ ENG 104 may be taken by international students.
${ }^{3}$ H1S 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304

## Sophomore Year

First Semester
Hrs.

## Sem. Hrs. Second Semester

Sem.

|  |  | ${ }^{5}$ Literature | 3 |  |  | ${ }^{5}$ Literature | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| BIO | 203 | General Botany I | 3 | BIO | 204 | General Botany I | 3 |
| BIO | 203L | General Botany Lab I | 1 | BIO | 204L | General Botany Lab I | 1 |
|  |  | ${ }^{6}$ Social Science | 3 |  |  | ${ }^{6}$ Social Science | 3 |
| SPS | 251 | Introduction to Soil Science | 4 |  |  | ${ }^{4}$ Health Science | 2 |
| SPS | 282 | Dendrology | 3 | ECO | 231 | Principles of Macro Economics | 3 |
|  |  |  | 17 | AGB | 199 | Computers in Agriculture | $\underline{3}$ |

${ }^{3}$ HIS 101, HIS 102, HIS 201, HIS 202, HIS 203, or HIS 304
${ }^{5}$ ENG 201, ENG 203, ENG 204, ENG 301, or ENG 404
${ }^{4}$ FAS 101, HED 101, NHM 103
${ }^{6}$ PHL 201, PSY 201, SOC 201, or GEO 213

## Summer

SPS 380 Forestry Field Techniques 6

| Junior Year |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Hrs. |  |  |  |  |  |
| ENG 304 | Advanced Composition | 3 | ENG 205 | General Speech | 3 |
| SPS | Required Courses | 3 | SPS | Required Courses | 11 |
| MUS 101 | Music Appreciation or |  |  | Advisor Approved Electives | $\underline{3}$ |
| ART 101 | Art Appreciation | 3 |  |  | 17 |
| SPS | Forestry Electives | 3 |  |  |  |
|  | Advisor Approved Electives | $\underline{3}$ |  |  |  |
|  |  | 15 |  |  |  |

## Sem.

$\qquad$ -
$\begin{array}{lll}\text { ENG } 205 & \text { General Speech } & 3 \\ \text { SPS } & \text { Required Courses } & 11 \\ & \text { Advisor Approved Electives } & \underline{3}\end{array}$

Junior Year
Sem. Hrs. Second Semester

## First Semester <br> Hrs.

| Senior Year |  |  |  |
| :---: | :---: | :---: | :---: |
| em. Hrs. Second Semester | Sem. Hrs. |  |  |
| 3 | SPS | Forestry Electives | 3 |
| 6 | SPS | Required Courses | 7 |
| $\underline{3}$ |  | Advisor Approved Electives | $\underline{2}$ |
| 12 |  |  | 12 |

## Required Courses

(Must be completed during the junior and senior years)
Course
Course Title
Sem. Hrs.
Forest Mensuration 4
SPS 371
Forest Protection 3
SPS 373
Silvics 3
SPS 374
SPS 375
SPS 430
Silviculture 4

SPS 483 Forest Resource Economics 3
SPS 489 Forest Ecological Management 3

SPS 491

## Seminar

Forestry Electives: (Nine hours must be selected.)
Course \#
Course Title
Natural Resource Management 3
Wood Products 3
Forest Recreation 3
Principles of Wildlife Management 3
Wildlife-Forestry Relationships 3
Plant Disease Diagnosis 4
Phyto-physiology 4
Soil Fertility and Fertilizers 3
Use and Interpretation of Aerial Photography 3
Ecology and Management of Woody Plant Insects 3


## COURSE DESCRIPTIONS

SPS 101 Introduction to Plant Science - 4 hrs. Study of the fundamental principles of science as related to the basic aspects of plant growth, morphology, physiology, ecology, propagation, and utilization.
Prerequisite: None (Offered Fall)

SPS 170 Introduction to Environmental Science - 3 hrs. Designed as a general science elective. A study of man both as a dominant force and as an inseparable part of the ecosphere. Basic ecological concepts, pollution and pollution control, resources and resource use, human manipulation of ecosystems, the law and environmental problems, the urban environment, problems of population growth, and discussion of other specific environmental issues are covered. Prerequisite: None (Offered Spring)

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)

SPS 281 Introduction to Forestry - 3 hrs. Principles and practices of forestry. Brief treatment of forest tree biology, dendrology, forest ecology, hydrology, insects and diseases, mensuration, silvicultural methods, products, economics, and management. Prerequisite: None (Offered Fall)

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

Soil and Water Conservation - 3 hrs . A study of soil and water conservation principles as related to wind and water erosion control, water utilization and runoff control, irrigation and drainage principles relating to crop production. Prerequisites: SPS 251 and junior or senior standing (Offered Spring, Even Years)

SPS 360 Cooperative Education - Credits variable, but should not exceed six semester hours. Relevant job-related experiences are arranged with federal and state government or with private industry. Prior approval by student's advisor is required. Prerequisite: None (Offered Summer)

SPS 365 Introduction to Geographic Information Systems and Spatial Analysis - 2 hrs. An introduction to computer-assisted geographic analysis technology used in the management, assessment, and inventory of natural resources. Prerequisite: None (Offered Fall, Even Years)

SPS 366L Climate and Global Change - 4 hrs. An introduction to climate and global change, including the relationships between the sun and the earth that drive the climate system; the global structure and variations of the atmosphere and oceans; and the influence of humans and natural processes on the climate system and its variability. Additional topics include: the greenhouse effect; ozone depletion; air pollution; acid rain; biodiversity; paleoclimatology; and vocalism. Students should have an understanding of basic math concepts and the physical sciences prior to this course. Prerequisite: Limited to students participating in the HSCaRS Summer Enrichment Program (Offered Summer)

SPS 370 Natural Resource Management - 3 hrs. An ecological approach to basic conservation principles and techniques. Introduction to policies and techniques for intelligent management and utilization of forests and other natural resources. Prerequisite: One course in biology (Offered Fall)

SPS 371 Forest Mensuration - 4 hrs. An applied approach to forest measurements, including log, tree and stand measurements, as well as data analysis. Training in commonly used measuring devices is included during a weekly field laboratory. Prerequisite: SPS 380 or consent of instructor Co-requisite: SPS 375 (Offered Spring)

SPS 374 Silvics - 3 hrs. A study of the habitat, genetics, and life histories of commercially and ecologically important U.S. trees and their interaction with their environments. Prerequisite: SPS 282 (Offered Fall)

SPS 375 Silviculture - 4 hrs. A study of silvicultural systems in the U.S. Includes basic forest ecology, regeneration practices, intermediate cuts, and site preparation. Prerequisite: SPS 380 or consent of instructor Co-requisite: SPS 371 (Offered Spring)

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

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

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: SPS 281 (Offered Spring)

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)

Wildlife-Forestry Relationships -3 hrs . An in-depth course on the relationships between forest habitat conditions and the abundance, diversity, and physiological condition of wildlife. Examination of wildlife effects on forest regeneration and management practices with consideration of vertebrate pest control strategies. Discussion of wildlife-habitat relationships models, habitat suitability models, and assessment of beneficial and detrimental impacts of forest management on wildlife conservation. Prerequisite: SPS 281 (Offered Spring)

Commercial Nursery and Greenhouse Management 4 hrs. Propagation and management of ornamental nursery crops and enterprises. Prerequisite: SPS 101 or consent of instructor (Offered Spring, Odd Years)

Soil Microbiology - 4 hrs. A study of the properties and classes of microorganisms as related to soil and crop production. Effects of microorganisms on the fertility, and chemical, and physical properties of soil, are emphasized. Prerequisites: BIO 101, BIO IOIL, BIO 102, BIO 102L, BIO 330, and BIO 330L. Seniors and graduate students only (Offered Spring, Odd Years)

Forage Management - 3 hrs . A study of the soil - plant - animal complex as it relates to the morphology, physiology, and utilization of forages. Emphasis will be on agronomic practices and physiological considerations in forage management in Alabama. Prerequisite: SPS 101 or BIO 204 and BIO 204L (Offered Spring, Odd Years)

Weed Science - 3 hrs. A study of the phenology of weeds; habitat management by cultural, mechanical, biological, and chemical means; dissipation; and phytotoxicity of herbicides. Application and physiological relationships of herbicides and recent advances in weed control problems are also discussed. Prerequisite: SPS 101 or BIO 204 and BIO 204L (Offered Fall, Odd Years)

Principles of Sustainable Agriculture - 3 hrs. A course designed to provide students with an overview of agricultural resources and the ways they are used or misused. The course offers principles in sustaining such resources for the betterment of quality of life on the earth. Prerequisite: None (Offered Spring)

Vegetable Crop Production - 3 hrs . Commercial vegetable production with emphasis on beans, peas, cole, root, bulb, tuber, salad crops, pot herbs, and greens. Prerequisites: BIO 204 and BIO 204L or SPS 101 (Offered Spring, Even Years)

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

SPS 423 Tropical Food Crop Production-3 hrs. Cultural practices and the economic importance of major tropical food crops including fruit, vegetables, agronomic crops, and those used for drugs, beverages, and spices are covered in this course. Prerequisite: None (Offered Spring, Even Years)

SPS 430 Biometry - 3 hrs. Introductory statistics, with emphasis on the biological sciences. Includes a study of natural distribution systems, sampling techniques, data arrangement, tests of significance, and logical inferences. Prerequisites: MTH 112 and MTH 113 (Offered Fall)

SPS 431 Principles of Plant Breeding - 3 hrs. Principles, methods, and techniques involved in plant breeding, and their application to field crops. Prerequisites: BIO 204, BIO 204L, BIO 311 and BIO 311L (Offered Spring)

SPS 432 Plant Disease Diagnosis - 4 hrs. A study of the general principles and methods applied in identification, epidemiology, etiology, and control of major plant diseases Prerequisite: None (Offered Fall)
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: SPS 323 (Offered Spring, Even Years)

Fruit Crops Production - 3 hrs . Commercial tree-fruit crops culture including site selection, varieties, establishment, training, pest control, and harvesting are emphasized in this course. Prerequisite: SPS 101 or consent of instructor (Offered Fall, Even Years)

Introduction to Molecular Genetics - 3 hrs . The study of procaryotic DNA structure and replication, restriction analysis, sequencing, transcription, translation, gene regulation and gene expression. Prerequisite: Consent of instructor (Offered Fall)

Introduction to Molecular Genetics Laboratory - 1 hour, This course emphasizes the basic techniques used in molecular genetics and provides a step-by-step approach and hands-on experience in the field of recombinant DNA technology. Co-requisite: SPS 433 (Offered Fall)

Seed Production Practices - 4 hrs. A study of the principles and practices in the production of pure seeds, with emphasis on harvesting, drying and storage; crop and weed seed identification and laboratory practices in seed testing; and official rules for testing seeds and seed laws or marketing. Prerequisites: SPS 101 or SPS 310 (Offered Fall, Even Years)

Phyto-physiology - 4 hrs. A study of the environment-plant growth interaction in the physiology of plants with emphasis on whole plant processes. Prerequisite: SPS 101 (Offered Fall)

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)

Chemistry of Toxic Substances- 3 hrs. Environmental chemistry and reactions of toxic substances, their origins and uses, and the exposure, transformation and elimination of toxic substances by biological systems. Formulas, structures and reactions of toxic substances are emphasized. Prerequisites: CHE 102, CHE 102L, CHE 302, and CHE 302L, or consent of instructor (Offered Fall, Odd Years)

SPS 452 Soil Fertility and Fertilizers - 3 hrs. A study of the relationship of soil chemistry, forms of nutrients in soils, and role of plant nutrients in crop production, as well as other factors associated with soil productivity; and basic concepts of fertilizer application and manufacturing.
Prerequisites: CHE 102 and SPS 251 (Offered Fall, Even Years)
SPS 453 Hazardous Waste Management - 3 hrs. The impact, technologies, problems and issues associated with hazardous wastes, and management practices are emphasized in this course. Case studies of hazardous waste spills, risk assessments, and remediation techniques are included. Prerequisite: None (Offered Spring, Odd Years)

Soil, Water and Air Pollution; 3 hrs. The fate of chemical fertilizers, pesticides, and other agricultural and industrial pollutants in relation to environmental quality as well as the effects of
these factors on checks and balances of natural terrestrial and aquatic ecosystems will be emphasized. Prerequisites: CHE 102, CHE 102L, and SPS 251 (Offered Spring, Even Years)

SPS 475 Principles of Wetlands - 3 hrs . The importance of wetlands for wildlife, waste treatment, flood control, and water quality is emphasized. Biological, chemical, and physical processes which occur in natural and constructed wetlands are addressed. Field trips are required. Prerequisite: CHE 102, CHE 102L, and SPS 251 (Offered Spring, Even Years)

SPS 476 Remote Sensing of Earth Surface Features - 4 hrs. The principles of remote sensor systems and their utility, natural resource inventory and management, land use planning, and environmental monitoring, as well as, interpretation of color infrared photos, multispectral and thermal scanners, and radar imagery are emphasized in this course. Prerequisite: Consent of instructor (Offered Fall, Odd Years)

SPS 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 Fall)

SPS 481 Forest Hydrology and Watershed Management - 3 hrs. A study of the properties of wildland watersheds and forest hydrology; soil-water-site vegetation relations; and land management practices as they influence forest hydrologic processes. Prerequisite: Consent of instructor (Offered Spring, Odd Years)

SPS 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)

SPS 483 Forest Resources Economics - 3 hrs. A discussion of the market, price, and cost affecting factors as they relate to timber-harvesting techniques used for determining the best economic alternative. Seniors only. Prerequisite: Senior classification and consent of instructor (Offered Spring)

SPS 484 Ecological Processes - 3 hrs. A review of ecological concepts and processes. Investigations into the ecological role of fire and wetlands are also included. Prerequisite: SPS 374 or consent of instructor (Offered Fall, Odd Years).

Environmental Policy and Law - 3 hrs. A course designed to provide students with a foundation for understanding the environmental law system by examining various laws, policies, and cases within the U.S. legal system that are used to minimize, prevent, or remedy the consequences of actions which damage or threaten the environment, public health, or safety. Prerequisite: Consent of instructor (Offered Fall, Even Years)

Forest Ecological Management - 3 hrs. A study of the integrated management of forest resources including plant, site and landscape processes, as well as interrelationships of forestry
practices, wildlife and range management, hydrology, recreation, and other demands. Prerequisite: SPS 371 (Offered Spring)

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)

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)


# SCHOOL OF ARTS AND SCIENCES 

Dr. Jerry R. Shipman, Dean<br>323 V. Murray Chambers Building<br>(256) 851-5500

## MISSION AND OBJECTIVES

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

The objectives of the School of Arts and Sciences are a) to provide courses of instruction and experiences which seek to develop the student's ability to engage in analytical and critical thought and expression; b) to provide opportunities and experiences that will enable the student to become a creative, versatile person capable of functioning as a productive member of his 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 curricular through research and creative ability among students and faculty in the departments; and, f) to provide the student 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 six departments, each headed by a department chair. The departments are Behavioral Sciences, English and Foreign Languages, Military Science, Natural and Physical Sciences, Physics, and Social Work. Major and minor programs in the Department of Behavioral Sciences include political science and sociology. Major and minor programs in the Department of English and Foreign Languages include English and telecommunications (with options in operations, performance and production). The Department of Military Science offers only a minor program in military science. Majors and minors programs in the Department of Natural and Physical Sciences include biology (with major options in botany, zoology, medical technology, pre-medicine, and ecotoxicology), chemistry and mathematics. A double major in mathematics and computer science and a cooperative program in pre-nursing are also offered in the department. The Department of Physics offers a major in physics (with three options in electrical, mechanical, and civil) and minors in computer science, physics and mathematics. An undergraduate national 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 coursework that assist students in obtaining teacher certification in education in several arts and sciences program majors.

## REQUIREMENTS FOR GRADUATION

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

## 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

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program of study should include courses that will fulfill the institutional and departmental major requirements for graduation. A
student choosing a minor only in a department should consult with the departmental chairperson before pursuing courses. Basic distribution of requirements, as to courses and hours for majors and minors, are given in the departmental listings in this Bulletin.

## DEPARTMENT OF BEHAVIORAL SCIENCES

## 223 Carver Complex North 256-851-5339

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.

## 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 in which he/she is enrolled. Students who intend to teach in public school systems will follow the program of the School of Education. A grade of "C" or above must be earned in each major and minor course. All majors and minors are expected to participate in ongoing program area activities. Graduating majors must complete a departmental exit interview, diagnostic exit examination and take the Graduate Record Examination.

## CURRICULUM

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

## POLITICAL SCIENCE MAJOR 130 Credit Hours

The Political Science major consists of 32 semester hours ( 23 specified and 9 elective). All elective hours must come from 300 and 400 level courses and must include at least six hours at the 400 level. All Political Science majors must complete a minor. Each Political Science major must file a Political Science Record Check Sheet with the Department at the beginning of his/her matriculation. Political Science majors are encouraged to participate in a cooperative work experience or internship.

First Semester

| 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 Appreiciation | $\underline{3}$ |
| PED |  | ${ }^{4}$ Physical Educ. Activities | $\underline{2}$ |  |  |  | 16 |

${ }^{1}$ ENG 101 H or ENG 103 (international students) may be taken; ${ }^{2}$ ENG 102 H or ENG 104 (international students) may be taken. ${ }^{3}$ BIO 101, BIO 101L or BIO 102, BIO 102L; CHE 101, CHE 101L or CHE 102, CHE 102L; PHY 101, PHY 101L or PHY 102, PHY 102L; ${ }^{4}$ HED 101 or MSC 101 or MSC 102 may be taken.

## First Semester

| 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 |  | ${ }^{7}$ Basic Economics or |  |
| PSC | 201 | Intro. to Political Science | $\underline{3}$ |  |  | Principles of Economics | 3 |
|  |  |  | 15 |  |  | ${ }^{5}$ Elem. Foreign Language II | 3 |
|  |  |  |  | PSC | 205 | American Government | $\underline{3}$ |

${ }^{5}$ French, German, or Spanish; ${ }^{6}$ PSY 201 or SOC 201; ${ }^{7}$ ECO 200 or ECO 231 or ECO 232

## First Semester

| HIS | 201 | American History I | 3 | HIS | 202 | American History II | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
|  | ${ }^{5}$ Intermed. Foreign Language I | 3 |  |  | ${ }^{5}$ Intermed. Foreign Language II | 3 |  |
| ENG | 304 | Advanced Composition | 3 | ENG | 205 | Speech | 3 |
| GEO | 214 | World Regional Geography | 3 | PSC | 307 | Comparative Government | 3 |
| PSC | 206 | State \& Local Government | 3 | PSC | 310 | Blacks in Amer. Politics | 3 |
| PSC | 397 | Program Seminar I | .5 | PSC | 398 | Program Seminar II | .5 |
|  |  | ${ }^{8}$ Approved Course in Minor | $\underline{3}$ |  |  | ${ }^{8}$ Approved Course in Minor | $\underline{3}$ |
|  |  | 18.5 |  |  |  | 18.5 |  |

${ }^{8}$ Any minor may be chosen but advisor consultation recommended. No course may be used in both the major and the minor.

First Semester
PSC 308 International Relations
PSC 497 Program Seminar III

## Senior Year

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| PSC | ${ }^{9}$ Electives | 6 | PSC | ${ }^{9}$ Elective |
| :--- | :--- | :--- | :--- | :--- |
|  | Approved Courses in Minor | $\underline{6}$ |  | ${ }^{8}$ Approved Courses in Minor |
|  | 15.5 |  | $\underline{6}$ |  |
|  |  |  | 12.5 |  |

${ }^{9}$ All elective hours must come from 300 and 400 level courses and must include at least six hours at the 400 level.

## SOCIOLOGY MAJOR

## 128 Credit Hours

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

| First Semester |  | Freshman Year |  |  | Sem. Hrs |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Sem. Hrs. | Second Sem | mester Se |  |
| 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. | t. 3 |
|  | ${ }^{3}$ Natural \& Physical Science | 4 | ART 101 | Art Appreciation | 3 |
| HIS | 101 World History I | 3 |  | OR |  |
| PED | ${ }^{4}$ Physical Education Activities | $\underline{2}$ | MUS 101 | Music Appreciation |  |
|  |  | 16 | HIS 102 | World History II | 3 |

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

|  | Sophomore Year |  | Sem. Hrs. |
| :--- | :---: | :---: | ---: |
| First Semester | Sem. | Second Semester |  |
|  |  | 3 | ENG 204World Literature II |

${ }^{5}$ To be chosen from History, Political Science, Geography or Psychology. ${ }^{6}$ ECO 200 or ECO 231 or ECO 232 may be taken.

| Junior Year |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| First Semester S |  | Sem. Hrs. | . Secol | d Semester | Sem. Hrs. |
| MGT | 213 Computer Applications | 3 |  | ${ }^{5}$ Required Support Elective | 3 |
|  | ${ }^{5}$ Required Support Elective | 3 | ENG 205 | General Speech | 3 |
| SOC | 301Elementary Behavioral Statistics | cs 3 S | SOC |  |  |
|  | ${ }^{7}$ Electives | 6 |  |  |  |
| SOC | ${ }^{7}$ Electives | 3 |  | ${ }^{8}$ Approved Courses in Minor | $\underline{6}$ |

$\begin{array}{ll}{ }^{8} \text { Approved Course in Minor } & 3 \\ { }^{9} \text { General Elective } & \underline{3}\end{array}$
$\stackrel{3}{18}$
${ }^{7}$ 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 course may be used in both the major and the minor. ${ }^{9}$ Any course level 200 or above, (Foreign Language, including 100 level courses may be chosen) with advisor concurrence.

## Senior Year

## First Semester

| 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 | $\underline{3}$ |
|  | ${ }^{9}$ General Elective | $\underline{3}$ |  |  | 15 |

## Sem. Hrs.

Sem. Hrs.
Second Semester
SOC 450 Senior Seminar
${ }^{8}$ Approved Courses in Minor 6
${ }^{9}$ General Elective $\quad \underline{3}$
15

15

## MINOR IN CRIMINAL JUSTICE

A minor in Criminal Justice requires the following courses:

## Course \#

## Course Title

CRJ 250
CRJ 251
Introduction to Criminal Justice Sem. Hrs.
*CRJ 458
Rules of Evidence in Criminal Cases
3
3
$-\quad 3$
Internship 3
**Approved Criminal Justice Electives
CRJ 458

$$
\frac{9}{18}
$$

*Prerequisites: At least 9 hours of Criminal Justice courses, including CRJ 250. In addition, students are required to attain a grade of "C" or better in each of the required Criminal Justice courses and may not be on academic probation before they are permitted to enroll in the Internship. **Chosen in consultation with the student's advisor.

## MINOR IN HISTORY

A minor in History requires the following courses in addition to HIS 101 World History I and HIS 102 World History II:

## Course \#

Course Title
HIS 104
Introduction to History as a Discipline

## Sem. Hrs.

HIS 201
American History I
HIS 202
American History II3
*Approved History Electives from 300-400 Level Courses
$\begin{array}{r}3 \\ 9 \\ \hline 18\end{array}$
*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

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A minor in Philosophy requires the following courses in addition to PHL 201:
Course \# Course Title Sem. Hrs.

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
$\underline{6}$
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 \#

PSC 201
PSC 205
PSC 206

## Course Title

Introduction to Political Science
American Government
State and Local Government
*Approved Political Science Electives

## Sem. Hrs.

3
3
3
$\stackrel{9}{18}$
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 \#
SOC 201
SOC 210
SOC 441

## Course Title

## Sem. Hrs.

Introduction to Sociology 3
Social Problems 3
Sociological Theory 3
*Approved Sociology Electives $\quad \frac{9}{18}$
*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. This course is designed to survey the entire American criminal justice process and systems including criminal laws, police subsystem, judicial subsystem, and correctional subsystem. Issues in America's criminal justice system will be integrated into the coverage. Prerequisite: None (Offered Fall)

CRJ 252 Criminal Law and Procedure - 3 hrs. Consideration of selected problems in criminal law of special significance to police officers and administrators. Prerequisite: CRJ 250 (Offered Fall)

CRJ 254 Introduction to Correction -3 hrs. This course examines the origin and current status of various aspects of the correctional system including jails, prisons, community-based correctional programs and the philosophies of punishment and justice. Problems and issues associated with the correctional system will be discussed. Prerequisite: CRJ 250 (Offered Fall)

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

SCHOOL OF ARTS AND SCIENCES
aspects of geography. It also focuses on the use of maps and the geographical information system as tools of geographers. Prerequisite: None (Offered Fall)

GEO 214 World Regional Geography - 3 hrs. A study which includes the geographical profile of world nations and major regions focusing on the relationship of cultural and environmental factors. Emphasis is given to the study of Third World countries. Prerequisite: None (Offered Spring)

GEO 215 Global Profile - 3 hrs. A course designed to help students become aware of global realities and concerns and help them understand the gravity of the world's future problems, particularly global population, resources, urbanization and technological development. Prerequisite: None (Offered Spring)

GEO 401 Urban Geography - 3 hrs. Explains various concepts of urban geography and the role of geographic site and location in the evolution of cities. It includes study of global urbanization, urban hierarchy, morphology, land use patterns, classification of cities and town-country relations. A special focus on slums and squatters in developing countries is included. Prerequisite: None (Offered Spring)

HIS 101 World History I-3 hrs. A survey of the evolution of civilization with an effort to show the interrelationship of all cultures from earliest times (Pre-History) through the 15th century. Prerequisite: None (Offered Fall and Spring)

HIS 102 World History II - 3 hrs. A survey of the evolution of civilization with an effort to show the interrelationship of all cultures from 1500 through the present. Prerequisite: None (Offered Fall and Spring)

HIS 104 Introduction to History as a Discipline - 3 hrs. A course designed to introduce students to the nature of the discipline, fields of study, and careers in history (academic and non-academic). This focus is on the essential characteristics of "history proper," historical subject matter and fields of study; the relationship of history to other disciplines; historical techniques, (i.e., how to study history, writing about history, and historical research); as well as the uses of history. Prerequisite: None

HIS 105 Contemporary World History - 3 hrs . A course exploring major developments throughout the world from World War II to the present. It includes such topics as Cold War, African and Asian nationalism, Third World development, United Nations, economic disparity between north and south, disintegration of communist Europe, as well as technological, intellectual, and cultural developments in the period. Prerequisite: None (Offered Spring as justified by demand)

HIS 201 American History I-3 hrs. A study of the political, economic, social and religious development of the United States from the earliest settlements to 1877. Prerequisite: None (Offered Fall and Summer)

HIS 202 American History II - 3 hrs. A study of the political, economic, social and religious development of the United States from 1877 through the present. Prerequisite: None (Offered Spring and Summer)

HIS 203 Foundations of American History and Government - 3 hrs. A survey course designed to review the historical events which influenced the major economic, political, and social development of America. Prerequisite: None (Offered Fall, Spring and Summer)

Introduction to Africana Studies - 3 hrs. This course deals with the basic origin and orientation of the study of the African American experience. It is concerned with the relationships between African American Studies, Africana Studies, and other related fields of study. It's focus is a multi-dimensional and interdisciplinary perspective and approach to the African American experience. The emphasis is placed on ideas and developments that have influenced and shaped African American studies and its relation to African and Diasporan studies. Prerequisite: None (Offered as justified by demand)

The Historical Essay: An Introduction to Creative Historical Thinking and Writing - 3 hrs. A course designed to develop historical thinking and writing skills through the use of primary documents. The core of the course involves the examination of primary documents that reflect a broad variety of history. Activities include analyzing and interpreting primary documents; writing historical background to primary documents; and constructing historical context, with emphasis on
fictional and non-fictional historical events, movements and individuals. Prerequisite: None (Offered as justified by demand)

Alabama History - 3 hrs. A study of the historical development of Alabama and its relationship to the growth of the United States as a whole. Prerequisite: None (Offered Fall, usually alternate years)

English History I - 3 hrs. A survey of the political, cultural, and social development of England from pre-history through 1688. Prerequisite: None (Offered Fall)

English History II - 3 hrs . A survey of the political, cultural, and social development of England, the Empire and the Commonwealth of Nations from 1689 through the present. Prerequisite: None (Offered Spring)

History of Africa - 3 hrs. An introduction to African history which surveys its main periods or phases. Beginning with the geography of the continent, the origin of man and the peopling of Africa, it goes from ancient Egypt to colonization. The emphasis is on events and underlying forces impacting the development and history of Africa as a whole. Prerequisite: None (Offered as justified by demand)

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 PostReconstruction Period. The emphasis is on a critical understanding of those events and situations that have had particular significance for and impact on African Americans. Prerequisite: None (Offered Fall, usually alternate years)

HIS 305 Modern Asia - 3 hrs. A study of the interrelationship of the Western nations with the countries of Asia. Prerequisite: None (Offered Spring, usually alternate years)

HIS 306 The Frontier and American Expansion-3 hrs. A focus on the frontier and American expansion as these relate to the westward movement in American history. The emphasis is on the processes of regionalism and expansion growing out of America's general development and their impact on the life of the nation at various levels and times. Prerequisite: None (Offered as justified by demand)

Military History - 3 hrs. An introduction to the study of conflicts in arms, campaigns and battles, beginning with the colonial and European heritage. A thorough review of the American Revolution, the War of 1812, the Mexican War, the Civil War, the Army and the Indian Wars,

World War I, World War II, the Korean War, the U.S. Army in Vietnam and later conflicts. Prerequisite: None (Offered Spring)

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 (Offered Fall)

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 (Offered Spring)

History of Latin America - 3 hrs. An introduction to Latin American history starting with the geography of the cultural region and its earliest people and going to the national period. The focus
is on those events impacting the development and institutions of the region as a whole. Prerequisite: None (Offered Fall, usually alternate years)

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 (Offered Fall, usually alternate years)

American Diplomacy - 3 hrs. A study of the forces which have influenced decisions in the United States' relationships with other peoples. The colonial background, federalist, and republican leadership, territorial expansion, the Civil War, Seward, Fish, and Blaine, the rise of imperialism, the Far East, Latin America, World Wars I and II, and the Cold War are all covered. Prerequisite: None (Offered as justified by demand)

2Oth Century U.S. - 3 hrs. The historic development of the United States as it moved into the ranks of the great world powers. Concentrates on social and economic reform and foreign policy. Prerequisite: None (Offered Spring)

Constitutional History of the U.S. - 3 hrs. An analysis of the growth and development of the American constitutional system, with particular emphasis upon the post World War II period. Prerequisite: None (Offered Fall, upon sufficient demand)

History of the South Since 1865-3 hrs. An emphasis on Reconstruction Redemption, the New South, the Populist and Progressive Movements, the impact of two world wars, the Depression, the Intellectual Renaissance, TVA, Civil Rights, the Black Movements, the Labor Movement, and the South and the nation. Prerequisite: None (Offered Fall, usually alternate years)
U.S. Reconstruction - 3 hrs . The transformation of American society and government during the post-Civil War years with special emphasis on the problems of the South. Prerequisite: None (Offered upon sufficient demand)

History Internship and Co-op Program - 3-6 hrs. An emphasis on the application of historical research methods and principles of public history to non-academic careers through observation and practical experience. Prerequisite: Completion of 21 semester hours in upper level history courses (Offered Fall, Spring, and Summer, as internships become available)

PSC 201 Introduction to Political Science - 3 hrs. An introduction to the discipline of political science. The course provides an understanding of the basic foundations and fundamentals of the discipline
and delineates the scope, approaches, and concepts of political science. Included is a survey of major areas and aspects of the political process ranging from political analysis to international relations. This course is a prerequisite for all other political science courses. (Offered Fall)

PSC 205 American Government - 3 hrs. A study of the constitutional framework, its origin, nature, and organization. The rights and duties of citizens of the United States and the administration and functions of the government as they affect citizens and their institutions are emphasized. Prerequisite: PSC 201 (Offered Fall, Spring, and Summer)

PSC 206 State and Local Government - 3 hrs. A study of the institutions, structures, and functions of the American political process from the perspective of states and local communities. Prerequisite: PSC 201 (Offered Spring)

Comparative Government - 3 hrs. A study of the varied institutions through which people have attempted to regulate their affairs. The major world governments are analyzed with considerable attention given to newly emerging countries. Prerequisite: PSC 201 (Offered Fall, usually alternate years)

International Relations - 3 hrs. A critical analysis of the policies implemented by the major countries of the world in their relationship with each other, from the eighteenth century to the present. Emphasis is placed on the causes and consequences of war and on war as an instrument of national policy. Prerequisite: PSC 201 (Offered Spring, usually alternate years)

Introduction to African Politics - 3 hrs. An introductory analysis of African politics. This course covers the traditional African political past and extends its impact to the contemporary period. The course focuses on major political developments, ranging from colonialism to independence to the era of the military coup. Included are discussions of major personalities as well as the diverse political-economic ideological variants that have emerged on the African continent. Prerequisite: PSC 201 (Offered Spring, usually alternate years)

Blacks in American Politics - 3 hrs. A political history of Black Americans from reconstruction to the present. Prerequisite: PSC 201 (Offered Spring, usually alternate years)

PSC 312 Revolution in the Third World - 3 hrs. A survey of revolutionary movements in selected Third World countries: China, Vietnam, Mexico, Cuba, and three African nations. Prerequisite: PSC 201 (Offered Fall, usually alternate years)
U.S. Foreign Policy - 3 hrs. An examination of the formation and execution of American foreign policy since World War II. In addition to an emphasis on the historical and institutional framework of foreign policy, the course also focuses on some of the prominent issues/areas which occupy the present foreign policy agenda of the U.S. Prerequisite: PSC 201 (Offered Fall, usually alternate years)
itics of the Middle East - 3 hrs. A survey course of key Middle East countries, including Saudi Arabia, Syria, Iraq, Jordan, United Arab Emirates, Egypt, and Israel. The course covers the historical background of the region, as well as an up-to-date analysis of contemporary issues and problems. Prerequisite: PSC 201 (Offered Fall, usually alternate years)

Urban Politics - 3 hrs. An introductory inquiry into the politics of urban areas. While the primary focus is the study and use of power and influence in American cities, emphasis is also given to identifying historical and contemporary forces which have led to the development of the
urban place as a primary form of spatial and political organization. Prerequisite: PSC 201 (Offered Spring, usually alternate years)

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

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

PSC 401 Western Political Thought - 3 hrs. A survey of political thought contained in the western intellectual tradition. By examining the major contributions and controversies generated by a select group of political philosophers, emphasis is placed upon the idea that politics and government represent problematical exercises which require serious intellectual reflection and inquiry. Prerequisite: PSC 201 (Offered Spring)

PSC 402 Seminar on American Politics - 3 hrs. A survey analysis of contemporary problems and issues. The course first treats the broad ideological and historical forces which have helped to shape the contemporary American political setting. This is followed by an in-depth focus and discussion of the fundamental issues and problems of this era. Prerequisite: PSC 201 (Offered Spring, usually alternate years)

PSC 403 Constitutional Law - 3 hrs. A focus on the decision-making process of the United States Supreme Court. It will include the analysis of major court cases through examination of the justices' majority and minority opinions. The cases and opinions will provide insight into the legal resolution of key social political and economic issues that confront the nation. The course will also examine the operation of the federal court system with a specific focus on the behind-the-scenes operation of the Supreme Court. Prerequisite: PSC 201 (Offered upon sufficient demand)

PSC 404 American Political Thought - 3 hrs. A survey of American political thought from America's beginning as a colony to the present. Among the themes to be addressed are the nature and evolution of liberalism, the fusion of liberalism and capitalism, and the accommodation between democracy and liberalism - capitalism. Prerequisite: PSC 201 (Offered Fall, usually alternate years)

PSC 415 Principles of Public Administration - 3 hrs. A study of the basic concepts of public administration and the administrative problems of organization, procedure, personnel, financial administration, administrative law, and public relations. Prerequisites: PSC 201, PSC 305, and PSC 306 (Offered Summer)

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

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

PSC 499 Internship - 3-6 hrs. Field experiences providing application and observation of concepts and ideas discussed in the classroom. Students are assigned to appropriate state, local, federal, and private agencies. Prerequisite: PSC 201 (Offered Fall, Spring and Summer, upon availability of internships)

SOC 201 Introduction to Sociology - 3 hrs. This course provides an analysis of social interaction, the social process, society, culture, social structures, and other concepts fundamental to sociological understanding. Prerequisite: None (Offered Fall and Spring)

SOC 210

SOC 213

SOC 253

SOC 301

SOC 310

SOC 323

SOC 325

SOC 326

SOC 328

SOC 330

Social Problems - 3 hrs. The setting of social problems and the analysis of the major problems of contemporary America are considered. The conditions surrounding problems, theories about causation and amelioration are included. Prerequisite: SOC 201 (Offered Spring)

Marriage and the Family - 3 hrs. The basic social institution in all its ramifications; the processes of mate selection, socialization of children, adjustments inherent in marriage and family life and the impact of social change from the vantage of the professional sociologist are all given consideration. Prerequisite: SOC 201 (Offered Fall)

Deviant Behavior - 3 hrs. A study of processes by which some members of society become deviant. Readings will deal with particular forms of deviance such as mental illness, suicides, prostitution, use of drugs, riots, vice, and white collar crime in an effort to arrive at a general theory of the causes of deviance. Prerequisite: CRJ 250 (Offered Spring)

Elementary Behavioral Statistics - 3 hrs. (PSY 301) Basic and essential statistical concepts are introduced and applied to behavior measurements. Descriptive tools of central tendency, variability, and standard scores are considered, as well as correlation and basic inferential tools of the t-test and simple analysis of variance. Prerequisite: SOC 201 (Offered Fall and Spring)

Social Change and Collective Behavior - 3 hrs. This course involves an analysis of the linkage between science and technology by focusing on collective behavior as the consequences of the interplay between abstract principles and practical application. Social change is treated as inherent in the characteristics of social systems (i.e., social organization and social behavior aspects of human experience) such that the various collective activities are ordered in some sequence of a cyclical pattern of recurrence. Prerequisite: SOC 201 (Offered Fall, upon sufficient demand)

Juvenile Delinquency - 3 hrs . This course examines the nature and causes of juvenile delinquency. It also reviews the juvenile justice system; programs for treatment, control and prevention of juvenile delinquency. Prerequisite: SOC 201 (Offered Fall)

Rural Sociology - 3 hrs. Rural life is subjected to sociological analysis with emphasis on the rural-urban dichotomy, the effects of personality, and the urbanization of rural society. This is a junior-level course. Prerequisite: SOC 201 (Offered Spring, upon sufficient demand)

Urban Sociology - 3 hrs. This course provides an analysis of urban concepts and the impact of urbanization on social relations, social institutions, and the national interest. This is a juniorlevel course. Prerequisite: SOC 201 (Offered Fall)

Social Organization - 3 hrs. This course deals with the major trends in political, economic, and social values and perspectives of the emerging American scene considered in relation to changes in the distribution of power, technology, and character development in terms of small groups and complex organization. Prerequisite: SOC 210 (Offered Fall, upon sufficient demand)

Social Psychology - 3 hrs. The central focus of this course is upon the relationships that prevail between groups and individuals. Social influence, social attraction, and the interplay of cultural,
social, and psychological factors in becoming a personality are included. Prerequisite: SOC 201 (Offered Spring)

SOC 332 Educational Sociology-3 hrs. The focus of this course is upon socialization in the educational institution, and upon the structure (status and roles), interactional patterns, and culture of the school. Prerequisite: SOC 201 (Offered Spring)

SOC 334 Cultural Anthropology - 3 hrs. This course considers the different ways man copes with his natural setting and social milieu; different bodies of customs, variations in the socialization
process, and the transmission of the culture heritage. Primitive societies are the major ones considered. Prerequisite: SOC 201 (Offered Fall)

SOC 336 Contemporary Social Movements - 3 hrs. The nature, causes, development, forms, functions, and outcome of recent social movements are analyzed. Theories about social movements as a variation of collective behavior are included. Prerequisite: SOC 201 (Offered Spring, upon sufficient demand)

SOC 351 Criminology - 3 hrs. This course will give an introduction to the field of criminology.
Specifically, it will cover the nature of crime, the causes of criminal behavior and the reactions to crime. Theories of crime causation will also be discussed. Prerequisite: CRJ 250 (Offered Spring)

SOC 432 Minorities in American Life - 3 hrs. This course treats the various minority groups in America, their relations with the dominant group, their subordination, and problems arising from minority status. Prerequisite: SOC 201 (Offered Fall, upon sufficient demand)

SOC 434 Social Stratification-3 hrs. A study of social inequalities and differentiation as related to social structures and social system and analysis of patterns of interaction within and between social classes and the implications of stratification of human group behavior. Prerequisite: SOC 201 (Offered Spring, upon sufficient demand)

SOC 441 Sociological Theory - 3 hrs. This course examines the classical and contemporary theoretical models in sociology and investigates the development of sociological thought. Prerequisite: SOC 201 (Offered Fall)

SOC 443

SOC 445

SOC 448

Social Research - 3 hrs. This course provides an introduction to sociological research including the principles of research design, and the collection, analysis, and reporting of data through actual field experience. Prerequisite: SOC 201 (Offered Fall)

Population Problems - 3 hrs. This course provides an introduction to demography and population research. It includes population theory, trends and rates in natural increase, population composition, distribution, planning, and human ecology. Prerequisite: SOC 201 (Offered Spring, upon sufficient demand)

Social Legislation - 3 hrs. A survey of the development, philosophy, and changes in American social legislation and of its impact upon contemporary life. The last 30 years are stressed. Prerequisite: SOC 201 (Offered Fall, upon sufficient demand) contributors, literature, and methods. This should be the terminal major course. Prerequisite: SOC 201 (Offered Spring)

## A MINOR IN CRIMINAL JUSTICE

The Criminal Justice minor is open to all undergraduates students of the University subject to the guidance of their advisors and/or school regulations. The Criminal Justice minor consists of 19 hours, including 10 required and nine hours of electives. Students pursuing a minor are required to complete the following core courses with a grade of "C" or better.

Course Number

Course Title
Semester Hours
CRJ 250
Introduction to Criminal Justice
3
CRJ 251
*CRJ 258
**CRJ 259
Rules of Evidence in Criminal Cases 3
Internship 3
Seminar in Contemporary Justice Problems $\underline{1}$
*Prerequisites: Nine to 12 hours of criminal justice courses, including CRJ 250. In addition, students are required to attain a grade of "C" or better in each of the prerequisites before they are permitted to enroll in the Internship. **To be taken concurrently with CRJ 258 Internship.

## COURSE DESCRIPTION

CRJ 250 Introduction to Criminal Justice - 3 hrs. Origin, historical background, and development of laws as a definite part of the human cultural pattern: law as a formalized method of social control: and law enforcement. Prerequisite: None (Offered Fall)

CRJ 251 Rules of Evidence in Criminal Cases - 3 hrs . A comprehensive analysis of the rules of evidence. Particular subjects will include judicial notice, presumptions, the nature of real and circumstantial evidence, burden of proof province of court and jury, documentary evidence, hearsay evidence, confessions and admissions, and witnesses. The course will give particular emphasis to evidence in criminal cases. Prerequisite: CRJ 250 (Offered Spring)

CRJ 252 Criminal Law and Procedure - 3 hrs. Consideration of selected problems in criminal law of special significance to police officers and an administrators. Prerequisite: CRJ 250 (Offered Fall)

CRJ 253 Deviant Behavior - 3 hrs. A study of processes by which some members of society become deviant. Readings will deal with a particular forms of deviance such as mental illness, suicides, prostitution, use of drugs, riots, vice, and white collar crime in an effort to arrive at a general theory of the causes of deviance. Prerequisite: CRJ 250 (Offered Spring)

CRJ 254 Introduction to Correction - 3 hrs. A course to provide background in the origins of correctional through and action. Major practical problems, theoretical fallacies, present and future trends provide students an empirical base for assessing present function in the field. Prerequisite: CRJ 250 (Offered Fall)

Corrections Administration - 3 hrs. An emphasis on supervisory functions in jail and prison settings including staff selection and development, decision making, staff morale. Prerequisite: CRJ 250 (Offered)

Police Administration - 3 hrs. Organization and function of law enforcement agencies, police problems and practices are evaluated. Analysis is made of most effective means of social control. Prerequisite: (Offered)

Probation and Parole - 3 hrs. Principles and practice, administrative organization and management in parole system. Recruitment, training, assignment and supervision of probation/parole officers. Case loads and case supervision, referrals and revocations. Prerequisite: CRJ 250 (Offered Spring)

Internship - 3 hrs. Opportunities for students to have case work experiences by working with various criminal justices agencies. Prerequisite: Nine to $\mathbf{1 2}$ hours of criminal justice courses including CRJ 250, and introduction to Criminal Justice. In addition, students are required to attain a " $C$ " or better in each of the prerequisites before they are permitted to enroll in the internship. (Offered Fall and Spring)

Seminar in Contemporary Criminal Justice Problems - 1 hr . A survey of the numerous and complex factors involved in the area of human relations and its effects on criminal justice agencies. Prerequisite: CRJ 250 to be taken concurrently with internship. (Offered Fall and Spring)


# UNDERGRADUATE SOCIAL WORK PROGRAM 

102 Bibb Graves Hall

256-851-5475
The Social Work Program at Alabama A\&M University offers the Bachelor of Arts degree in Social Work.

## MISSION STATEMENT

The Undergraduate Social Work curriculum prepares students for beginning 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 approaches and roles within a variety of practice settings to enhance the social functioning of diverse 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 objective of the Program is to prepare students for beginning generalist social work practice with diverse and impoverished populations, and oppressed groups in rural and urban settings.

## OBJECTIVES

The Social Work Program will achieve its mission by meeting the following objectives:

1. To prepare students for competent, empathic and ethical generalist social work practice with diverse systems of all sizes in rural and urban areas.
2. To recruit, retain, and graduate minority students for employment at the baccalaureate level and advanced study.
3. To facilitate the capacity for self-assessment, critical thinking and the professional use of self.
4. To provide students with the necessary skills and abilities to actively advocate on behalf of oppressed and at-risk populations and to continuously work to create a just and humane society.
5. To facilitate in students an understanding, appreciation and respect for the positive value of diversity.
6. To strengthen the quality of social service delivery in the State of Alabama and the region through employment of qualified entry level professional social workers.

The curriculum of the Social Work Program is based on the Program's objectives. The objectives reflect generalist training. The specific curriculum objectives and content extend the program objectives and therefore reflect the generalist problem-solving framework.

## UNDERGRADUATE 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, 1980. In June, 1986, the Program's accreditation was reaffirmed by the Council for a seven-year period (19861993). In June 1993, the Program's accreditation was reaffirmed for an eight-year cycle (1993-2001).

## 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.
3. Formal verbalization of an interest in Social Work as a career and completion of an Undergraduate Social Work Program application at A\&M University.
4. Successful completion of an assessment interview with a full-time Social Work Program faculty member(s) and successful consideration by the BSW program faculty with a recorded vote(s).
5. Official declaration of Social Work as the major through the formal registration process.
6. Students must have an overall grade point average of $2.0(\mathrm{C})$ and no less than a grade of $(\mathrm{C})$ in the SWK 200 Introduction to Social Welfare Course.

## LIBERAL ARTS REQUIREMENTS

Social Work, as is true with all professions, depends on selected knowledge, which is subsequently organized in a manner to provide a certain perspective of reality. At 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 | $\underline{2}$ |
|  |  | 43 |

The following courses are Social Work electives:

Course No.
Course Title
SWK 205
SWK 303
SWK 308
SWK 311
Gerontology: Study of Older Adults
Poverty \& Deprivation

Black Experiences Through Films $\quad 3$
Introduction to Child Welfare 3
Sem. Hrs.

## 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.
SWK 200
SWK 201
SWK 205
SWK 301
SWK 302
SWK 303
SWK 305
SWK 304
SWK 306
SWK 308
SWK 311
SWK 403

## Course Title

Sem. Hrs.
Introduction to Social Welfare3

Introduction to Social Work 3
Gerontology: Study of Older Adults 3

Human Behavior \& Social Environment I 3
Human Behavior \& Social Environment II 3
Poverty \& Deprivation 3
Rural Human Services 3
Diverse Populations
The Art of Interviewing 3
Black Experiences Through Films 3
Introduction to Child Welfare 3
Social Welfare Policies \& Services 3

# UNDERGRADUATE SOCIAL WORK PROGRAM 126 Credit Hours 

## Freshman Year

First Semester
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 | PHY 101 | Physical Science \& Lab | 4 |  |  |
| MTH 110 | Finite Math or higher | 3 | PED | Physical Ed | 2 |  |  |
| MUS 101 | Music or | 3 | SWK 200 | Intro Social Welfare | 3 |  |  |
| ART 101 | Art Appreciation | 3 |  | Elective | $\underline{3}$ |  |  |
| HED 101 | Personal Comm. Health | $\underline{2}$ |  |  |  | 18 |  |

First Semester

|  |  |  |  |
| :--- | :--- | :--- | ---: |
| BIO | 101 | Biology \& Lab |  |
| ENG | 203 | World Literature I | 4 |
| PHL | 201 | Intro. to Philosophy | 3 |
| SOC | 201 | Intro. to Sociology | 3 |
| 101 |  | Foreign Language ${ }^{* * *}$ | 3 |
|  |  |  | $\underline{3}$ |
|  |  |  | 16 |

## Junior Year

First Semester
Sem. Hrs.

| ENG 205 | General Speech | 3 |
| :--- | :--- | :--- |
| SWK 301 | Human Behavior I* | 3 |
| SWK 304 | Diverse Populations* | 3 |
| ECO 200 | Basics of Economics | 3 |
| PSC 201 | Intro to Pol. Science or | 3 |
| PSC 305 | Federal Gov. or | $\mathbf{3}$ |
| PSC | 306 | State \& Loc. Gov. |

## Sem. Hrs.

## Sophomore Year

Second Semester

| BIO | 102 | Biology \& Lab | 4 |
| :--- | :--- | :--- | ---: |
| ENG 204 | World Literature II | 3 |  |
| SWK 201 | Intro. to Social Work* | 3 |  |
| PSY 201 | General Psychology | 3 |  |
|  | 102 | Foreign Language*** | $\underline{3}$ |
|  |  |  | 16 |

Second Semester

ENG 304 Advanced Composition 3
PSY 301 Elem Behavior Statistics 3
SWK 302 Human Behavior II 3
SWK 305 Rural Human Services* 3
SWK 306 Art of Interviewing* 3
SWK 309 Soc Work Methods** $\underline{3}$
SWK 309 Soc Work Methods** $\quad \underline{3}$
Sem. Hrs.

3

## Senior Year

Second Semester
First Semester

|  | Sem. Hrs. |  |
| :--- | :--- | ---: |
| SWK 310 | Social Work Methods** | 3 |
| SWK 403 | Social Welfare Policies* | 3 |
| SWK 410 | Social Work Res. Meth. * | 3 |
|  | Elective | $\underline{3}$ |
| *Major Courses |  | 12 |

[^1]**Majors Only
***Spanish Recommended, but German or French may be selected
Social Work majors are required to complete a total of 126 hours in order to meet the requirements for a Bachelor of Arts Degree in Social Work.

NOTE: The Curriculum must be followed as outlined with courses taken in sequential order. No Minor.

## Course Descriptions

SWK 200 Introduction to Social Welfare - 3 hrs . This course examines the development of social welfare as a social institution from a historical perspective. Emphasis is placed on social values in the United States. Society's views about helping people, the resources that are allocated to helping efforts, the way help is provided and to whom, and the major helping programs through which help is delivered are examined. The linkage between social problems, social values, and social institutions is demonstrated. Prerequisite: None (Offered Spring and Fall)

SWK 201 Introduction to Social Work - 3 hrs. This course introduces Social Work as a profession. It traces the origin and development of the profession; defines and illustrates the problems of social functioning; provides social work services in various settings; presents ethics and values appropriate for practice, organizations for the profession, professional issues and skill development. Prerequisite: SWK 200 (Offered Spring and Fall)

SWK 205 Gerontology - Aging and Problems of the Aged - 3 hrs. This course is designed to give students an overview of the unique problems faced by the elderly in our society. Students are made aware of the societal attitudes toward the aged. Biological factors, psychological problems, health, retirement, housing, personal and social aspects of death and other areas of concern are presented. Prerequisite: None (Offered Spring)

SWK 301 Human Behavior and Social Environment I-3 hrs. This course is designed to provide content on theories and knowledge of human bio-psycho-social and development from conception through young adulthood as they interact in families, groups, organizations, and communities. Content on the ecological and systems theory is provided for understanding the interaction of people with multiple systems. The impact of bio-psycho-social and cultural systems on behavior is explored. Content values and ethics, diversity, populations at-risk, oppression and social and economic justice is provided. Prerequisites: BIO 101, BIO 102, PSY 201, SWK 200, and SWK 201 (Offered Fall)

SWK 302 Human Behavior and Social Environment II-3 hrs. This course is the second of a two-course sequence. It provides content on theories and knowledge of human bio-psycho-social development from middle adulthood to later adulthood as they interact in families, groups, organizations and communities. Content on values and ethics, diversity, population-at-risk, oppression and social and economic justice is provided. Prerequisite: SWK 301 (Offered Spring)

SWK 303 Poverty and Deprivation - 3 hrs. This course describes the causes of poverty and its relationship to other social problems. A historical perspective is offered to help students understand the impact of the Great Depression in changing the values of the American people toward people in need. Programs that combat poverty are discussed and critiqued. Causes of poverty and populations impacted are explored. Prerequisite: None (Offered Fall and Spring)

SWK 304 Diverse Populations - 3 hrs. This course is designed to sensitize students to 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 relationships of their own personal values and those of the profession. Personal stereotypes that limit their perceptions of client strengths are identified and confronted. As a result, students become better prepared to provide competent service to a diverse client population. Prerequisites: SWK 200 and SWK 201 (Offered Spring and Fall)

SWK 305 Rural Human Services - 3 hrs. This course is designed to provide content for understanding service delivery to at-risk rural populations. The uniqueness of rural lifestyles and problems are explored. This course also deals with cultural issues and values that are unique to rural life and how these variables impact 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 and SWK 201 (Offered Spring and Fall)

SWK 306 The Art of Interviewing - 3 hrs . This course is designed to provide knowledge for skill development in interviewing diverse populations and recording. Interviewing and recording techniques appropriate to a variety of problems issues, populations, and social settings will be utilized, assessed and refined. Prerequisites: SWK 200, SWK 201 (Offered Spring and Fall)

SWK 308 Understanding the Black Experience - 3 hrs . This course is designed to use films as a means to understand the black past as it relates to the contemporary condition of blacks in our society. The course affords students an opportunity to examine black people as presented in film. As a result, students acquire a perspective of what the black presence has been, is, and how it may become in the future. Upon completion of this course, students have an in-depth look at the impact of culture and environment as they affect behavior and personality. Prerequisite: None (Offered Spring, Fall, and Summer)

SWK 309 Social Work Methods (Individuals \& Families) - 3 hrs. This course is designed to help students develop beginning generalist social work practice skills. Self assessment, ethics and values of the social work profession, roles, competencies, the generalist problem-solving process, effective interviewing, recording, and evaluative skills are included. This course also focuses on the social work relationship including the influences of race, ethnicity, class, culture, gender, sexual orientations and varying diversities, in delivering effective services to individuals and families. Prerequisites: SWK 200, SWK 201, SWK 301 (Offered Spring)

SWK 310 Social Work Methods (Groups, Organizations and Communities) - 3 hrs. This second practice course is designed to develop generalist practice skills for work with groups, organizations, and communities. Assessments interruptions with groups, organizations and communities are taught. Prerequisites: SWK 302 and SWK 309 (Offered Fall)

SWK 311 Introduction to Child Welfare - 3 hrs. This course is designed to identify, analyze, and assess child welfare programs, policies, and services for understanding the needs and services available for children. Vulnerable children (physically and sexually abused, neglected, special needs, in new families) are discussed to increase student understanding of their plight and the need for effective interventions, prevention and policy strategies. 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. Prerequisite: None

SWK 403 Social Welfare Policies and Services - 3 hrs . This course is designed to utilize research to interpret legislation and policies as a means of improving, changing and developing required services in recognition of problems and issues inherent in the social system; provide knowledge and skills regarding social policy, research, social legislation, policy formulation and analysis for enhancing delivery of social services. Prerequisites: SWK 200, SWK 201, PSC 201, ECO 200, SOC 210 (Offered Fall and Spring)

SWK 407 Field Instruction and Seminar - 8 hrs. Field Instruction is a planned experience in which the student is assigned to a social service agency for a minimum of four hundred eighty hours per semester. This experience provides the opportunity for the student to work with individuals, families, groups, organizations, and communities. The student is able to test out those skills and theories taught in the classroom. Prerequisites: SWK 200, SWK 201, SWK 301, SWK 305, SWK 306, SWK 309, SWK 310, SWK 403, and SWK 410 (Offered Spring)

SWK 407L 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.

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 and quantitative 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, SWK 201, SWK 301, SWK 302, SWK 309 (Offered Fall)

SWK 415 Senior Seminar in Research - 2 hrs. This course is the second research course. In this course, students carry out the research design developed in SWK 410 Research Methods course. They administer the instrument, collect and analyze data, interpret results and discuss implications. Students continue to examine previous research and to analyze how past research designs and evaluations have dismissed, diminished, or reinforced negative stereotypes and prejudices in oppressed and at-risk populations. Prerequisites: SWK 309, SWK 310, SWK 403, SWK 410 (Offered Spring)

## STUDENT ORGANIZATIONS

Student organizations specific to the discipline are available for students in the Social Work Department. Social Work majors, with a 3.3 cumulative grade point average can be considered for membership in Chi Iota Chapter of Phi Alpha National Social Work Honor Society.

Phi Alpha is a national 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 student 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. Membership is open to all social work majors.


# DEPARTMENT OF ENGLISH AND FOREIGN LANGUAGES <br> Room 1 McCormick Building <br> 256-851-5383 


#### Abstract

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 to 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, French, and telecommunications. Minors are available in each of these disciplines, and German and Spanish are also taught. In collaboration with the School of Education, the department offers courses leading to teaching certification in English, French, and language arts. These programs are outlined by the Department of Curriculum and Instruction.

## Requirements

Students earning a major in the department must satisfy the requirements of the university, complete 12 hours of a foreign language and take the Graduate Record Examination. An approved minor is required.

## 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 | $\underline{3}$ |
| (See provisions | ptions) | 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 | $\underline{3}$ |

## French majors must take the following:

| Course Number |  | Course Title |
| :--- | :--- | :--- | Semester Hours

## 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 to French Literature I | 3 |
| FRE 304 | Introduction to French Literature II | $\underline{3}$ |

The Telecommunications Group offers four course sequences -- majors in operations, production and performance and a minor which includes portions of the major. The major in Telecommunications consists of 36 semester hours in that field. A student who takes a major in telecommunications may choose from three areas of concentration -- operations, production and performance. A minor in telecommunications consists of 18 semester hours: 12 hours of required courses, plus six hours of electives selected with the approval of an advisor.

## All telecommunications majors and minors must take the following:

| 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 | $\underline{3}$ |
|  |  | 12 |

## Operations majors must also take the following:

Course Number
TEL 213
TEL 301
TEL 302
TEL 401
TEL 402

Course Title
Electronics for Broadcasting 3
Film Production I 3
Film Production II 3
Practicum I 3
Practicum II 3
Electives $\underline{9}$
24

## Production majors must also take the following:

| Course Number | Course Title | Semester Hours |
| :---: | :---: | :---: |
| TEL 301 | Film Production I | 3 |
| TEL 302 | Film Production II | 3 |
| TEL 304 | Advanced Television Production | 3 |
| Course Number | Course Title | Semester Hours |
| TEL 401 | Practicum I | 3 |
| TEL 402 | Practicum II | 3 |
| TEL 403 | Acting for Television and Film | 3 |
|  | Electives | $\underline{6}$ |
|  |  | 24 |
| Performance majors must also take the following: |  |  |
| Course Number | Course Title | $\underline{\text { Semester Hours }}$ |
| 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 | $\underline{3}$ |
|  |  | 24 |

## ENGLISH MAJOR <br> 125-126 Credit Hours

## Freshman Year

First Semester

| 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 II | 3 |
|  |  | A Higher MTH course | $\mathbf{3 - 4}$ | 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 | $\underline{3}$ |
| PED |  | Activities or | $\mathbf{2}$ |  |  |  | 15 |
| MSC | 101 | Military Science I-A | $\mathbf{2}$ |  |  |  |  |
|  | 101 | ${ }^{3}$ Elementary Foreign Language | $\underline{3}$ |  |  |  |  |
|  |  | $15-16$ |  |  |  |  |  |
| ${ }^{1}$ ENG 103 may be taken by international students. |  |  |  |  |  |  |  |
| ${ }^{2}$ ENG 104 may be taken by international students. |  |  |  |  |  |  |  |

## Sophomore Year

First Semester

| ENG | 203 | World Literature I | 3 | ENG | 204 | World Literature II | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| BIO | 101 | General Biology | 3 | PHY | 101 | Physical Science | 3 |
| BIO | 101 L | General Biology Lab | 1 | PHY | 101 L | Physical Science Lab | 1 |
| ART | 101 | Art Appreciation | 3 |  | 202 | ${ }^{3}$ Intermediate Foreign Language II | 3 |
|  | 201 | ${ }^{3}$ Intermediate Foreign Language | 3 | ECO | 200 | Basic Economics or | 3 |
| ENG | 201 | Survey of English Literature I | $\underline{3}$ | ECO | 231 | Macro Economics | 3 |
|  |  |  | 16 | ENG 205 | General Speech | 3 |  |
|  |  |  |  | ENG | 202 | Survey of Eng. Lit II | 3 |

${ }^{3}$ 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 | $\underline{3}$ |  |  | Elective |
|  |  |  | 15 |  |  | 15 |

## Senior Year

First Semester
ENG 401 Romantic Writers or
ENG 402 Victorian Writers
HIS 301 English History I Electives

Sem. Hrs. Second Semester
ENG 305 Sixteenth Century English Lit. or
Seventeenth Century English Lit.
English History II
HIS 302 English H $-\frac{9}{5}$

## FRENCH MAJOR

## 125-126 Credit Hours

## Freshman Year

Sem. Hrs. Second Semester Sem. Hrs.

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ENG | 101 | ${ }^{1}$ Composition I |
| MTH | 112 | Pre-Calculus Algebra or |
|  |  | A Higher MTH course |
| HIS | 101 | World History I |

1 ENG $102{ }^{2}$ Composition II 3
3 HIS 102 World History II 3
3 FRE 102 Elementary French II 3
3-4 MUS 101 Music Appreciation 3
3 CMP 101 Fundamentals of Computer and

SCHOOL OF ARTS AND SCIENCES

| HED | 101 | Personal \& Community Health | 2 |
| :--- | :--- | :--- | :---: |
| PED |  | Two activities or | $\mathbf{2}$ |
| MSC | 101 | Military Science I-A or | $\mathbf{2}$ |
| MSC | 102 | Military Science II-B | $\mathbf{2}$ |
| FRE | 101 | Elementary French I | $\underline{3}$ |
|  |  |  | $15-16$ |

${ }^{1}$ ENG 103 may be taken by international students.
${ }^{2}$ ENG 104 may be taken by international students.

## Sophomore Year

First Semester

| ENG | 303 | World Literature I |
| :--- | :--- | :--- |
| PHY | 101 | Physical Science I |
| PHY | $101 L$ | Physical Science Lab |
| ART | 101 | Art Appreciation |
| FRE | 201 | Intermediate French I |
| PSY | 201 | General Psychology |

First Semester
PHY 201 Introduction to Philosophy
FRE 301 Advanced French

FRE 303 Introduction to French Literature
FRE 401 French Civilization and Culture 3 Elective

15

Sem. Hrs. Second Semester
3 ENG 204 World Literature II 3
3 BIO 101 General Biology I 3
1 BIO 101L General Biology Lab I 1
3 FRE 202 Intermediate French II 3
3 ENG 205 General Speech 3
$\underline{3} \quad$ SOC 201 Introduction to Sociology $\underline{3}$
Sem. Hrs. 16

## Junior Year

Sem. Hrs. Second Semester
Sem. Hrs.
3 HIS 203 Foundation of American History
3 and Government 3
3 ECO 200 Basic Economics or 3
3
ECO 231 Macro Economics 3
$\underline{3}$ ENG 304 Advanced Composition 3
15 FRE 302 Advanced French II 3
FRE 304 Introduction to French Literature II 3 Elective

## Senior Year

First Semester

| FRE | 403 | French Masterpieces I |
| :--- | :--- | :--- |
| FRE | 301 | English History I |
|  |  | Electives |

Sem. Hrs. Second Semester
3 FRE 402 French Phonetics 3
3 FRE 404 French Masterpieces II 3
$\underline{9} \quad$ HIS 302 English History II 3
15 Electives $\underline{6}$

## 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 | $\mathbf{3 - 4}$ |  |  | and Information Systems | 3 |  |
| HED 101 | Personal \& Community Health or |  | TEL | 202 | Fundamentals of TV Production | 3 |  |
| PED |  | Two activities or | BIO | 101 | General Biology | 3 |  |


| MSC | 101 | Military Science I-A or |  | BIO | 101L General Biology | $\frac{1}{16}$ |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: |
| MSC | 102 | Military Science II-B | $\mathbf{2}$ |  |  |  |
| TEL | 201 | Introduction to Broadcasting | 3 |  |  |  |
| HIS | 101 | World History | $\frac{3}{15-16}$ |  |  |  |
|  |  |  |  |  |  |  |

## Sophomore Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

${ }^{3}$ French, German, or Spanish

## (Operations)

## Junior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| ECO | 200 | Basic Economics or |  | PHL | 201 | Introduction to Philosophy | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ECO | 231 | Macro Economics | $\mathbf{3}$ | SOC | 201 | Introduction to Sociology | 3 |
|  | 201 | ${ }^{3}$ Intermediate Foreign Language | 3 | ENG | 304 | Advanced Composition | 3 |
| TEL | 213 | Electronics for Broadcasting | 3 |  | 202 | ${ }^{3}$ Intermediate Foreign Language II | 3 |
|  |  | Electives* | $\underline{6}$ |  |  | Electives* | $\underline{3}$ |
|  |  |  | 15 |  |  |  | 15 |

${ }^{3}$ French, German, or Spanish

## Senior Year

First Semester
TEL 301 Film Production I 3
TEL 401 Practicum I 3 TEL Electives

Sem. Hrs. Second Semester
3
3
$\frac{9}{15}$
TEL 402 Practicum II

TEL 302 Film Production II Electives*

II 3

Sem. Hrs.
3
3
$\underline{9}$
15
*Elective hours may be used to complete minor requirements
(Performance)
Junior Year

First Semester
ECO 200 Basic Economics or
ECO 231 Macro Economics
148

Sem. Hrs. Second Semester
SOC 201 Introduction to Sociology 3
3 ENG 304 Advanced Composition

Sem. Hrs.3

3

|  | 201 | ${ }^{3}$ Intermediate Foreign Language I | 3 |
| :--- | :--- | :--- | :--- |
| TEL | 215 | Voice and Diction | 3 |
| TEL 217 | Discussion for TV | 3 |  |
|  |  | Elective* $^{*}$ | $\underline{3}$ |
|  |  | 15 |  |
| ${ }^{3}$ French, German, or Spanish |  |  |  |


|  | 202 | ${ }^{3}$ Intermediate Foreign Language II |
| :--- | :--- | :--- |
| TEL | 216 | 3 |
|  | Oral Interpretation | 3 |
|  | Elective* | $\underline{3}$ |
|  |  | 15 |

3
TEL 216 Oral Interpretation 3
. 15
${ }^{3}$ French, German, or Spanish

## Senior Year

First Semester
PHL 201 Introduction to Philosophy
TEL 301 Film Production I
TEL 401 Practicum I
TEL 403 Acting for TV and Film Electives*

Sem. Hrs. Second Semester
3 TEL 302 Film Production
3 TEL 402 Practicum II
3 Electives*
3
-
15
*Elective hours may be used to complete minor requirements

## (PRODUCTION)

## Junior Year

First Semester

| SOC | 201 | Introduction to Sociology | 3 | ENG | 304 | Advanced Composition | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| ECO | 200 | Basic Economics or | 3 |  | 202 | ${ }^{3}$ Intermediate Foreign Language II | 3 |
| ECO | 231 | Macro Economics | $\mathbf{3}$ | TEL | 304 | Advanced TV Production | 3 |
|  | 201 | ${ }^{3}$ Intermediate Foreign Language II | 3 |  |  | Electives* | $\underline{6}$ |
| TEL | 403 | Acting for TV and Film I | 3 |  |  |  | 15 |
|  |  | Elective* | $\underline{3}$ |  |  |  |  |

*Elective hours may be used to complete minor requirements
${ }^{3}$ French, German, or Spanish

First Semester
PHL 201 Introduction to Philosophy
TEL 301 Film Production I
Film Production I $\quad 3$
TEL 401 Practicum I 3
TEL Electives $\underline{6}$
$\frac{6}{15}$
*Electives hours maybe used to complete minor requirements.

## COURSE DESCRIPTIONS

## ENGLISH

Major: 30 semester hours above the freshman level Minor: 18 semester hours above the freshman level All courses must be taken in proper sequence.

## COURSE DESCRIPTION

ENG 100 Developmental English - 3 hrs. This course presents functional aid in preparing freshmen to enter ENG 101. It presents fundamentals of the language with practical usage in writing. Students who pass Developmental English may proceed to 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 101L (Offered Fall and Spring)

ENG 100L Developmental English Laboratory - No credit hrs. This lab provides tutorial assistance and individualized study of the grammatical, mechanical, and writing skills covered in ENG 100. Co-requisite: ENG 100 (Offered Fall and Spring)

ENG 101 Composition $I-3$ hrs. This course presents an opportunity for freshmen to develop maturity in writing skills. Students must demonstrate adequate competence in writing on the final essay examination. Prerequisite: None (Offered Fall and Spring)

ENG 101H Honors Composition I-3 hrs. This course presents an opportunity for freshmen to develop maturity in using 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. This course presents a continuation of Communication Skills I. Emphasis is placed on the research paper. Prerequisite: ENG 101 or ENG 103 (Offered Fall and Spring)

ENG 102H Honors Composition II - 3 hrs. This course presents a continuation of Honors Communication Skills 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. This course presents an opportunity for international students to develop maturity in the use of communication skills in listening, speaking, reading, and writing. Emphasis is placed on mechanical correctness and the strengthening of individual language abilities. It may be substituted for ENG 101. Prerequisite: None (Offered Fall)

ENG 104 Communication Skills II-3 hrs. This course is a continuation of ENG 103. Emphasis is placed on the research paper. Prerequisite: ENG 101 or ENG 103 (Offered Spring)

ENG 201 Survey of English Literature I-3 hrs. This course presents a critical, historical, and appreciative study of English literature from the Old English Period through the Neo-classical Period. Masterpieces of the various literary eras are given special attention. Prerequisite: ENG 102 or 104 (Offered Fall)

ENG 202

ENG 203

ENG 204

ENG 205

ENG 301

ENG 302

ENG 304

ENG 305 Sixteenth Century English Literature - 3 hrs . This course presents a critical, historical, and appreciative study of non-dramatic literature of the Renaissance in England. Much attention is given to major authors of the period and genres that entered English literature at this time. Course must be paired with a period course later that 1700. Prerequisite: ENG 202 (Offered Spring)

ENG 306 Seventeenth Century English Literature - 3 hrs . This course presents a critical, historical, and appreciative study of the prose and poetry of the seventeenth century. Special attention is given to Donne and Milton. Course must be paired with a period course later than 1700. Prerequisite: ENG 202

ENG 307 Shakespeare - 3 hrs. This course presents a study of selected dramas of Shakespeare - tragedies, comedies, romances, and histories - and selected sonnets. Prerequisite: ENG 202

ENG 308 Literary Criticism - 3 hrs. This course presents a close analysis of representative works in literary criticism from the ancients to the present. It includes the application of modes of criticism to various texts in a number of genres. Prerequisite: ENG 202 (Offered Spring)

ENG 309 History of the English Language - 3 hrs. This course presents the historical development of the English language from the Anglo-Saxon Period to the present, including attention to the social, political, and intellectual forces that have determined the nature of its development. Prerequisite: ENG 202 (Offered Spring)

Journalism Workshop - 2 hrs. This course presents journalism experiences primarily for students who are assigned to the staff of university publications. It provides them with basic editorial skills. Emphasis is placed upon news reporting, writing, editing and layout. Weekly classroom sessions are held; however, the major course effort is devoted to laboratory activities which culminate in the production of the student newspaper or other university publications. (Offered Spring) Prerequisite: ENG 204

Creative Writing - 3 hrs. This course is designed to help students interested in creative writing develop their skills as writers of poetry and prose. A workshop environment including exercises, peer criticism and writing models will be used. Prerequisite: ENG 204 (Offered Spring)

Romantic Writers - 3 hrs. This course presents a critical, historical and appreciative study of the prose and poetry of the Romantic Movement. Special attention is given to Wordsworth, Coleridge, Byron, Shelley, and Keats. Course must be paired with a period course later than 1700. Prerequisite: ENG 202

Victorian Writers - 3 hrs. This course presents a critical, historical and appreciative study of the prose and poetry of the Victorian period. Special attention is given to Tennyson, Browning, Arnold, and Carlyle. Course must be paired with a period course later than 1700. Prerequisite: ENG 202 (Offered Fall)

Play Production - 2 hrs. This course offers experience in the skills and techniques necessary for staging successfully an amateur dramatic production. Prerequisite: ENG 102 or ENG 104 (Offered Fall)

Black Literature - 3 hrs. This course presents a study of black literature of America and other areas of the world. It may be a survey, a genre, or an author course at various times. Prerequisite: ENG 102 or ENG 104 (Offered Fall)

Advanced Grammar - 3 hrs . This course presents a thorough study of traditional English grammar. It may also include structural, generative, and transformational methods. Prerequisite: ENG 102 (Offered Fall)

## FRENCH

Major: 30 semester hours above the freshman level
Minor: 18 semester hours above the freshman level All courses must be taken in proper sequence.

FRE 101 Elementary French I-3 hrs. This course introduces the student to the fundamentals of oral-aural and reading-writing usage in the language. Grammatical structure, conversational form, and various aspects of the French culture are important parts of the course. Students learn to use the spoken language and work on pronunciation 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

FRE 201 Intermediate French I - 3 hrs. This course is a continuation of the first-year course. Improved proficiencies in oral-aural and reading-writing skills and increased linguistic proficiency will be stressed. Humanistic understanding of French people will be emphasized through the reading of historical or cultural texts in French. Prerequisite: FRE 102

FRE 202 Intermediate French II-3 hrs. This course is a continuation of FRE 201. It 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

FRE 301 Advanced French I-3 hrs. This course is a logical continuation of the second-year course. Further attention is given to oral-aural and reading-writing skills. Problems of grammar are approached at a high level. Syntactic constructions and rules, and the study of some idiomatic usage of the language are also included. Prerequisite: FRE 202

FRE 302 Advanced French II-3 hrs. This course is a continuation of French 301. Students will continue to develop their audiolingual and written skills, with reading and presentation of grammar and syntax. The course is designed to develop fluency in spoken French through guided and free conversation on topics of personal, general and current interest. Prerequisite: FRE 301

FRE 303 Introduction to French Literature I-3 hrs. This course gives a broad study of the historical and aesthetic evolution in literature from the earliest medieval literary monuments through the great masterworks of the Age of Enlightenment. Students will read carefully selected samples of representative works from all of the genres and important periods. Prerequisite: FRE 202 (Offered Fall)

FRE 304 Introduction to French Literature II - 3 hrs. This course is a continuation of FRE 303. It gives a broad study of the historical and aesthetic evolution in literature from the Age of Enlightenment through the contemporary period. Students will be introduced to the main literary currents and their historical and social backgrounds. Prerequisite: FRE 303 (Offered Spring)

FRE $401 \quad$ French Civilization and Culture - 3 hrs. This course presents a study of French civilization from the point of view of the arts, science, geography, industry, and social and political institutions. Conducted partially in French. Prerequisite: FRE 302 (Offered Fall)

FRE 402 French Phonetics - 3 hrs. This course gives a systematic study of the sounds and sound patterns of French in theory and practice. It gives the student an introduction to linguistic terminology and concepts which will aid the student in discriminating between correct and incorrect articulation of French sounds. It includes intensive oral drills of sounds in isolation and in syllables. Prerequisite: FRE 302 (Offered Fall)

FRE 403

FRE 404 French Literary Masterpieces II - 3 hrs. This course is a continuation of FRE 403. At this level, students develop a keener objective appraisal of the written word that permits a more refined sense of criticism. They will complete a research project on a topic of their own choice.. This course is designed to orient students to possible areas of concentration in their graduate work. Prerequisite: FRE 403 (Offered Spring)

## SPANISH

Elementary Spanish I-3 hrs. This course introduces the student to the fundamentals of oralaural and reading-writing usage in the language. Grammatical structure, conversational form, and various aspects of the Spanish culture are important parts of the course. Students learn to use the spoken language and work on pronunciation from the beginning. Prerequisite: None (Offered Fall)

SPA 102 Elementary Spanish II - 3 hrs. This course is a continuation of SPA 101. The basic language skills (speaking, reading, writing, and listening) introduced in SPA 101, along with the knowledge of Spanish culture, will be emphasized to complete the introductory level. Prerequisite: SPA 101 (Offered Spring)

SPA 201 Intermediate Spanish I-3 hrs. This course is a continuation of the first-year course. Students continue to improve their proficiencies in oral-aural and reading-writing skills. Students are to demonstrate increased linguistic proficiency and a humanistic understanding of the Spanish people through reading historical or cultural texts in Spanish. Prerequisite: SPA 102 (Offered Fall)

SPA 202 Intermediate Spanish II - 3 hrs. This course is a continuation of SPA 201.. Students continue to demonstrate intensive reading knowledge of texts dealing with Spanish literature and culture, with emphasis on speaking and writing short Spanish compositions. Vocabulary expansion is also emphasized. Prerequisite: SPA 201 (Offered Spring)

## GERMAN

GER 101 Elementary German I-3 hrs. This course introduces the student to the fundamentals of oralaural and reading-writing usage in the language. Grammatical structure, conversational form, and various aspects of German culture are important parts of the course. Students learn to use the spoken language and work on pronunciation from the beginning. Prerequisite: None (Offered Fall)

GER 102

GER 201 Intermediate German I-3 hrs. This course is a logical continuation of the first-year course. Students continue to improve their proficiencies in oral-aural and reading-writing skills. Students are to demonstrate increased linguistic proficiency and a humanistic understanding of the German people through reading historical or cultural texts in German. Prerequisite: GER 102 (Offered Fall)

GER 202
Elementary German II - 3 hrs. This course is a continuation of GER 101. The basic language skills (speaking, reading, writing, and listening) introduced in GER 101, along with knowledge of

German culture will be emphasized to complete the introductory level. Prerequisite: GER 101 (Offered Spring)
-
Intermediate German II - 3 hrs. This course is a continuation of GER 201. Students continue to demonstrate intensive reading knowledge of texts dealing with German literature and culture, with emphasis on speaking and writing short German compositions. Vocabulary expansion is also emphasized. Prerequisite: GER 201 (Offered Spring)


## TELECOMMUNICATIONS

TEL 201 Introduction to Broadcasting - 3 hrs. This course deals with the development of the broadcast industry, its relationship to other existing industries, print and film, and controls established by government regulatory bodies. The influences of broadcasting on the economy of the country are also treated. Prerequisite: None (Offered)

TEL 202 Fundamentals of Television Production - 3 hrs . This is primarily a laboratory course in the development of TV programs. Study areas include: TV equipment, camera operations, optics and lenses used in TV production, set development, and construction and audio reproduction. Prerequisite: None (Offered Spring)

TEL 211 Broadcast Law and Regulations - 3 hrs. This course presents regulations governing broadcasting, the responsibility for programming decisions, 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 302 Film Production II - 3 hrs. This course is a continuation of TEL 301. It will develop production

TEL 212

TEL 213

TEL 215

TEL 216

TEL 217

TEL 301

TEL 304

Writing for Broadcasting - 3 hrs. This course presents the fundamentals of writing and adapting literature for television and radio. Prerequisite: None (Offered Spring)

Electronics for Broadcasting - 3 hrs. This course presents the basic aspects of voltage, current, resistance, inductance, and capacitance. Laboratory work develops basic concepts in connecting components and taking basic instrument readings. Prerequisite: None (Offered Fall)

Voice and Diction - 3 hrs. This course presents voice training through exercises in voice production, elements of tone, and articulation of speech sounds. Practical experiences will be offered in announcing, newscasting, interviews, special events, and effective speech. Prerequisite: None (Offered Fall)

Oral Interpretation - 3 hrs. This course presents an implementation of the qualities necessary for literary interpretation: 1) clarity through understanding of the content; 2) unity through grasp of the rhythm; 3) interest through appreciation of the dramatic movement; and 4) color through realization of the mood. Advanced experiences will be offered in interpretation of literary works, announcing, interviewing, and newscasting. Prerequisite: None (Offered Spring)

Discussion for Television - 3 hrs . This course presents an emphasis on contemporary theories on interpersonal and small group communication and especially emphasizes techniques for argumentation, interview, and panel discussion for TV. Prerequisite: None (Offered Fall)

Film Production I- 3 hrs. This course presents an introduction to film-making equipment and scripting. Each student will be required to write, produce, budget, edit, and direct a film project. Prerequisite: None (Offered Fall) skills with emphasis on the long video, especially the documentary. Prerequisite: TEL 301. (Offered Spring)

Advanced Television Production - 3 hrs. This course presents laboratory experience in the development of various types of TV production. Students will be required to write, produce, budget, and direct a TV program of considerable length in a category other than drama. Program idea and design will be emphasized. Prerequisite: TEL 202 (Offered Spring )

TEL 311 Advertising for Radio and Television - 3 hrs. This course presents the application of the principles of advertising to the broadcast media. Emphasis will be placed on techniques of writing and production of advertisement. Prerequisite: 15 semester hours in TEL (Offered Fall)

TEL 321 News and Documentary Techniques - 3 hrs. This course presents the fundamentals of news reporting for all news media, the gathering and writing of news, study of news departments, responsibility to the public, public affairs programming, and news editing. Prerequisite: 15 semester hours in TEL (Offered Fall)

TEL 401 Practicum I-3 hrs. This course presents training in the operation of audio and video equipment using the facilities of the AAMU Telecommunications Center and other facilities, based on student interest. Repeatable. Prerequisite: $\mathbf{1 5}$ semester hours in TEL (Offered Fall)

TEL 402 Practicum II - 3 hrs. This course presents additional practical training in the Telecommunications Center or other appropriate centers. Repeatable. Prerequisite: 15 semester hours in TEL (Offered Spring )

TEL 403

TEL 404

TEL 411

TEL 431

TEL 441

Acting for Television and Film I-3 hrs. This course presents an exploration of the principles and theories of dramatic performance expressed through contemporary entertainment media. Practical experience in acting for television will be offered. Prerequisite: None (Offered Fall) Acting for Television and Film II - 3 hrs. This course is a continuation of TEL 403. Prerequisite: TEL 403 (Offered Spring)

Special Topics in Broadcasting - 3 hrs. This course presents the history, significance, potentialities, current trends, and utilization in the broadcast medium. Emphasis will also be placed on broadcast economics and station management. Prerequisite: $\mathbf{1 5}$ semester hours in TEL (Offered Fall)

Special Topics in Film - 3 hrs. This course presents the visual aspects of television and film, with emphasis on basic principles of designing, techniques of lighting, and practices in television and film studio operations, as well as sound motion picture production. Prerequisite: 15 semester hours in TEL (Offered Spring)

Special Topics in Speech and Drama - 3 hrs. This course presents both history and practice in the art of advocacy involving analysis, arrangement, and presentation of arguments for the purpose of decision making and social control. Experiences in developing scripts for public performance will be required. Prerequisite: 15 semester hours in TEL (Offered Fall)


# DEPARTMENT OF MATHEMATICS <br> 234 Chambers Building 256-851-5316 

The Department of Mathematics and Computer Sciences includes programs in mathematics and computer and information sciences.

## MATHEMATICS PROGRAM AREA

The Mathematics Program provides basic and advanced training in the principles and methods of mathematics. The courses offered prepare students to pursue the careers of their choice and satisfy the requirements for a B.S. degree in mathematics or a minor in mathematics for students majoring in other academic areas. Courses are also offered to (1) satisfy the requirements for a minor in applied statistics, (2) satisfy the mathematics requirements for prospective secondary school mathematics teachers, (3) satisfy individual needs of other academic disciplines, (4) satisfy the General Education Curriculum mathematics requirement, and (5) satisfy the Alabama State Articulation Agreement. 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.

## SPECIAL REQUIREMENTS FOR MATHEMATICS MAJOR

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 department. The department requires that majors take and pass a mid-level departmental examination and successfully complete the Senior Project (MTH 481) and a departmental exit examination. The departmental mid-level examination* is to be taken near the end of the sophomore year or at the beginning of the junior year, while the exit examination is to be taken at the time of enrollment in MTH 481, Senior Project. Finally, each major must have an exit interview with his/her mathematics academic advisor during the process of being cleared for graduation.
*Consult an academic advisor or the department coordinator concerning exam schedule and registration.

## COOPERATIVE EDUCATION PROGRAM FOR MATHEMATICS MAJORS

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 to mathematics majors. In the program, students alternate terms at the University with terms of work assignments in industry, government or business related to mathematics. The work assignments offer students realistic experiences and opportunities to earn money needed to help finance college expenses. Students interested in the program should contact either the coordinator of the Mathematics Program or the Director of Cooperative Education at the University.

## CURRICULUM FOR MATHEMATICS MAJOR

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 | Semester Hours |
| :--- | :--- | :---: |
| MTH 125-126 | Calculus I \& II | 4,4 |
|  | Calculus III | 4 |
| MTH 227 | Applied Differential Equations | 3 |
| MTH 238 | Introduction to Linear Algebra | 3 |
| MTH 237 | Abstract Algebra I | 3 |
| MTH 301 | Introduction to Real Analysis I | 3 |
| MTH 351 | Probability and Statistics | 3 |
| MTH 453 | Senior Project | 3 |

A major who plans to pursue graduate study must take the mathematics courses designated as "Graduate School Track," in addition to the regular track courses. Guidance from a mathematics advisor is necessary.

The following are elective courses that allow for some flexibility in the major to suit the needs of the students in the regular and graduate school tracks.

| Course No. | Course Title | Semester Hours |
| :--- | :--- | :---: |
| *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 and Analysis of Experiments I | 3 |
| MTH 444 | Design and Analysis of Experiments II | 3 |
| MTH 473 | Statistics | 3 |
| *Graduate School Track |  |  |

## CURRICULUM FOR MATHEMATICS MINOR

Eighteen semester hours of credits in mathematics courses are required for the mathematics minor.

| Course No. | Course Title | Semester Hours |
| :--- | :--- | :---: |
| MTH 125-126 | Calculus I \& II | 4,4 |
| MTH 227 | Calculus III | 4 |
| MTH 238 | Applied Differential Equations. | 3 |
| Electives (Below) |  |  |
| MTH 237 | Introduction to Linear Algebra | 3 |
| MTH 301 | Abstract Algebra I | 3 |
| MTH 303 | Methods of Mathematical Physics | 4 |
| MTH 351 | Introduction to Real Analysis I | 3 |
| MTH 355 | Applied Statistics | 3 |
| MTH 371 | Number Theory | 3 |
| MTH 453 | Probability and Statistics | 3 |
| MTH 383 | Numerical Analysis | 3 |

## CURRICULUM FOR APPLIED STATISTICS MINOR

Eighteen semester hours of credits in Applied Statistics courses are required for an applied statistics minor.

| Course No. | Course Title | Semester Hours |
| :--- | :--- | :---: |
| ST 324 | Applied Statistical Computing | 3 |
| ST 327 | Applied Regression Analysis | 3 |
| ST 344 | Design \& Analysis of Experiments I. | 3 |
| ST 444 | Design \& Analysis of Experiments II | 3 |
| ST 453 | Probability \& Statistics | 3 |
| ST 473 | Statistics. | 3 |

The department's mathematics major curriculum must be paired with a minor such as the Applied Statistics minor option, as well as with several other minor options that are available within the various departments in the University. These include (but are not limited to) minors in chemistry, computer science, and physics. The choice of a minor 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, and applied statistics minors and the double major in mathematics and computer science are indicated below.

# MATHEMATICS MAJOR (CHEMISTRY MINOR) 125 Credit Hours 

Freshman Year

First Semester

| ORI | 101 | Survival Skills |
| :--- | ---: | :--- |
| ${ }^{1}$ ENG | 101 | Communication Skills |
| HIS | 101 | World History |
| MTH | 125 | Calculus I |
|  |  | ${ }^{2}$ Health Science/Phys. Education |

Sem. Hrs. Second Semester
${ }^{3}$ ENG 102 Communication Skills II 3
HIS 102 World History 3
MTH 126 Calculus II 4
CMP 102 Intro to Programming I 3
${ }^{4}$ Fine Arts $\underline{3}$

| 1 | ${ }^{3}$ ENG 102 | Communication Skills II | 3 |
| :---: | :---: | :---: | :---: |
| 3 | HIS 102 | World History | 3 |
| 3 | MTH 126 | Calculus II | 4 |
| 4 | CMP 102 | Intro to Programming I | 3 |
| 2 |  | ${ }^{4}$ Fine Arts | $\underline{3}$ |
| 13 |  |  | 16 |

${ }^{1}$ ENG 103 (For non-native speakers of English); ${ }^{2}$ HED 101, FAS 101, NHM 103, PED, MSC; ${ }^{3}$ ENG 104 (For nonnative speakers of English); ${ }^{4}$ ART 101 or MUS 101

Sophomore Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| MTH 227 | Calculus III | 4 | MTH 238 | Applied Differential 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 |

${ }^{5}$ French, German or Spanish; ${ }^{6}$ ENG 201 or ENG 203

## Junior Year

First Semester

Sem. Hrs. Second Semester


${ }^{5}$ French, German or Spanish; *Graduate School Track

## Senior Year

| First Semester |  | Sem. Hrs. | Second Seme | ester | 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 |
|  | ${ }^{7}$ Social/Behavorial Science | 3 | CHE 302L | Organic Chemistry Lab II | 1 |
|  | Elect. or Co-op Exp. | 3 |  | ${ }^{7}$ Social Behavioral Science | $\underline{3}$ |
| MTH | Elective | $\underline{3}$ |  |  | 13 |
|  |  | 16 |  |  |  |

${ }^{7}$ PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214, or GEO 215

## MATHEMATICS MAJOR (COMPUTER SCIENCE MINOR) 119-120 Credit Hours

## Freshman Year

First Semester

| ORI | 101 | Survival Skills |
| :--- | ---: | :--- |
| ${ }^{1}$ ENG | 101 | Communication Skills |
| HIS | 101 | World History |
|  |  | ${ }^{2}$ Health Science/Phys. Ed |
| MTH | 125 | Calculus I |

Sem. Hrs. Second Semester Sem. Hrs.
1 ${ }^{3}$ ENG 102 Communication Skills II 3
3 HIS 102 World History 3
$3102 \quad{ }^{4}$ Fine Arts 3
2 CMP 102 Intro to Programming I 3
$\underline{4}$ MTH 126 Calculus II $\underline{4}$
${ }^{1}$ ENG 103 (For non-native speakers of English); ${ }^{2}$ HED 101, FAS 101, NHM 103, PED, MSC; ${ }^{3}$ ENG 104 (For nonnative speakers of English); ${ }^{4}$ ART 101 or MUS 101

## Sophomore Year

| First Semester |  | Sem. Hrs. Second Semester |  | Sem. Hrs. |  |  |
| :--- | :--- | :---: | :--- | :--- | :--- | :---: |
| MTH 227 | Calculus III | 4 | MTH 238 | Applied Differential Equations | 3 |  |
| MTH 237 | Intro. to Linear Algebra | 3 |  | 102 | ${ }^{5}$ Foreign Language | 3 |
| CMP | 103 | Computer Mathematics | 3 | ${ }^{7}$ ENG | Literature | 3 |
|  | ${ }^{5} 101$ | Foreign Language | 3 | ECO 200 | Basic Economics | 3 |
|  |  | ${ }^{6}$ Social/Behavioral Science | $\underline{3}$ | CMP 109 | Intro. To Programming II | 3 |
|  |  | 16 | ENG 205 | General Speech | $\underline{3}$ |  |
|  |  |  |  |  | 18 |  |

${ }^{5}$ French, German or Spanish; ${ }^{6}$ PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213,GEO 214 or GEO 215; ${ }^{7}$ ENG 201 or ENG 203

## Junior Year

First Semester

| MTH 301 | Abstract Algebra I | 3 | *MTH 302 | Abstract Algebra II or | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| PHY 105 | Physics I or | 4 | *MTH 352 | Intro. to Real Analysis II or | 3 |
| BIO 101 | General Biology I | 3 | MTH | Elective (300 level) | 3 |
| BIO 101L | General Biology I Lab or | 1 | PHY 106 | Physics II or | 4 |
| CHE 101 | General Chemistry I | 3 | BIO 102 | General Biology II | 3 |
| CHE 101L | General Chemistry Lab I | 1 | BIO 102L | General Biology II Lab or | 1 |
| ENG 304 | Advanced Composition | 3 | CHE 102 | General Chemistry II | 3 |
| MTH 351 | Intro to Real Analysis I | 3 | CHE 102L | General Chemistry Lab II | 1 |
| CMP 204 | Visual Programming | $\underline{3}$ | *MTH 383 | Numerical Analysis or | 3 |
|  |  | 16 | *MTH 303 | Method/Math Physics or | 4 |
|  |  |  | MTH | Elective (300 Level) | 3-4 |
|  |  |  | CMP 215 | Data Structures | 3 |
|  |  |  |  | Elective | $\underline{3}$ |
|  |  |  |  |  | 16-17 |
| ${ }^{5}$ French, German or Spanish; *Graduate School Track |  |  |  |  |  |

## Senior Year

First Semester

| MTH 453 | Probability \& Statistics | 3 | MTH 481 | Senior Project | 3 |
| :--- | :--- | :--- | :--- | :--- | ---: |
| MTH | Elective (400 level) | 3 | CMP 303 | Assembly Language | 3 |
|  | Elective or Co-op Exp. | 3 |  | Elective or Co-op Exp. | 3 |
|  | ${ }^{6}$ Social/Behavioral Science | $\underline{3}$ |  | Elective | $\underline{3}$ |
|  |  | 12 |  |  | 12 |

${ }^{6}$ PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213,GEO 214 or GEO 215

## MATHEMATICS MAJOR (PHYSICS MINOR) <br> 125 Credit Hours

Freshman Year
First Semester

| ORI | 101 | Survival Skills |
| :--- | ---: | :--- |
| ${ }^{1}$ ENG | 101 | Communication Skills I |
| HIS | 101 | World History |
| MTH | 125 | Calculus I |
|  |  |  |

Sem. Hrs. Second Semester Sem. Hrs.
$1 \quad{ }^{3}$ ENG 102 Communication Skills II 3
3 HIS 102 World History 3
3 MTH 126 Calculus II 4
$4 \quad{ }^{4}$ Fine Arts 3
$\underline{2}$ CMP 102 Intro. to Programming I $\underline{3}$
13


## Sem. Hrs.

3
3
3
3
${ }^{1}$ ENG 103 (For non-native speakers of English); ${ }^{2}$ HED 101, FAS 101, NHM 103, PED, MSC; ${ }^{3}$ ENG 104 (For nonnative speakers of English); ${ }^{4}$ ART 101 or MUS 101

## Sophomore Year

First Semester

| MTH 227 | Calculus III | 4 | MTH | 202 | Applied Differential Equations | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| MTH | 237 | Intro. to Linear Algebra | 3 |  | ${ }^{5} 102$ | Foreign Language |

${ }^{5}$ French, German or Spanish; ${ }^{6}$ ENG 201 or ENG 203

## Junior Year

First Semester
MTH 301 Abstract Algebra I
MTH 351 Intro. to Real Analysis I
Analysis II 3
PHY 201 Modern Physics
BIO 101 General Biology I
BIO 101L General Biology I Lab or
CHE 101 General Chemistry I
CHE 101L General Chemistry Lab I
ENG 304 Advanced Composition
${ }^{7}$ Social Behavioral Science

Sem. Hrs. Second

| *MTH 302 | Abstract Algebra II or | 3 |
| :--- | :--- | :--- |
| *MTH | 352 | Intro. to Real |

Sem. Hrs.

Intro. to Real

PHY 303 Methods of Math Physics 4
*MTH 383 Numerical Analysis or 3
MTH Elective ( 300 level) 3
BIO 102 General Biology II 3
BIO 102L General Biology Lab II or 1
CHE 102 General Chemistry II 3
CHE 102L General Chemistry Lab II 1
PHY Elective (300 level) $\frac{3}{17}$
${ }^{5}$ French, German or Spanish; ${ }^{7}$ PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213,GEO 214 or GEO 215; *Graduate School Track

First Semester

| MTH 453 | Probability \& Statistics | 3 | MTH 481 | Senior Project |
| :--- | :--- | :--- | :--- | ---: |
| MTH | Elective (400 level) | 3 |  | 3 |
|  |  |  |  | 3 |
|  | Elective or Co-op Exp. | 3 |  |  |
|  | ${ }^{7}$ Social/Behavioral Science | 3 | Elective or Co-op Exp. | 3 |
|  | Elective | $\underline{3}$ | Elective | $\underline{3}$ |
|  |  | 15 |  | 12 |

${ }^{7}$ PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214 or GEO 215

# MATHEMATICS MAJOR (APPLIED STATISTICS MINOR) <br> 119-120 Credit Hours 

| First Semester |  |
| :---: | :---: |
| ORI 101 | Survival Skills |
| ${ }^{1}$ ENG 101 | Communication Skills |
| HIS 101 | World History |
|  | ${ }^{2}$ Health Science/Phys Ed |
| MTH 125 | Calculus I |


| Freshman Year |  |  |  |
| :---: | :---: | :---: | :---: |
| Sem. Hrs. | Second Semester | Sem. Hrs. |  |
| 1 | ${ }^{3}$ ENG 102 | Communication Skills II | 3 |
| 3 | HIS | 102 | World History |
| 3 | MTH 126 | Calculus II | 3 |
| 2 |  | ${ }^{4}$ Fine Arts | 4 |
| $\underline{4}$ | CMP | 102 | Intro. to Programming I |
| 13 |  |  | 3 |

${ }^{1}$ ENG 103 (For non-native speakers of English); ${ }^{2}$ HED 101, FAS 101, NHM 103, PED, MSC; ${ }^{3}$ ENG 104 (For nonnative speakers of English); ${ }^{4}$ ART 101 or MUS 101

${ }^{5}$ French, German or Spanish; ${ }^{6}$ PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214 or GEO 215; ${ }^{7}$ ENG 201 or ENG 203; *Graduate School Track.

| Senior Year |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| First Semester |  |  | Sem. Hrs.Second Semester |  |  | Sem. Hrs. |
| ST | 453 | Probability \& Statistics | 3 | MTH 481 | Senior Project | 3 |
|  |  | Elective or Co-op Exp. | 3 | MTH | Elective (400 level) | 3 |
| ST | 473 | Statistics | 3 |  | ${ }^{6}$ Social/Behavioral Science | 3 |
| ENG | 205 | General Speech | 3 |  | Elective or Co-op Exp. | 3 |
|  |  |  | 12 |  |  | 12 |

${ }^{6}$ PSY 201, UPL 103, HDF 201, SWK 200, SOC 201,GEO 213, GEO 214 or GEO 215

# DOUBLE MAJOR IN MATHEMATICS AND COMPUTER SCIENCE 

## 128 Credit Hours

Freshman Year

First Semester

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ${ }^{1}$ ENG | 101 | Communication Skills |
| MTH | 125 | Calculus I |
| HIS | 101 | World History I |
| CMP | 102 | Intro to Programming I |
|  |  |  |

Sem. Hrs. Second Semester
$\begin{array}{lllr}1 & { }^{3} \text { ENG 102 } & \text { Communication Skills II } & 3 \\ 3 & \text { MTH 126 } & \text { Calculus II } & 4 \\ 4 & \text { HIS } & 102 & \text { World History II }\end{array}$ 16
${ }^{1}$ ENG 103 (For non-native speakers of English); ${ }^{2}$ HED 101, FAS 101, NHM 103, PED, MSC; ${ }^{3}$ ENG 104 (For nonnative speakers of English)

## Sophomore Year

First Semester

| ${ }^{4}$ ENG | Literature |
| :--- | :--- |
| PHY 105 | Physics I or |
| BIO 101 | General Biology I |
| BIO 101L | General Biology Lab I or |
| CHE 101 | General Chemistry I |
| CHE 101L | General Chemistry Lab I |
| MTH 227 | Calculus III |
| MTH 237 | Intro to Linear Algebra |
|  | ${ }^{5}$ Fine Arts |


| Sem. Hrs. | Second Semester | Sem. Hrs. |  |  |
| :---: | :--- | :--- | :--- | :---: |
| 3 | CMP | 208 | Logical Foundation of Comp | 3 |
| 4 | PHY | 106 | Physics II or | 4 |
| 3 | BIO | 102 | General Biology II | 3 |
| 1 | BIO | 102L | General Biology II Lab or | 1 |
|  |  |  |  |  |
| 3 | CHE | 102 | General Chemistry II | 3 |
| 1 | CHE 102L | General Chemistry Lab II | 1 |  |
| 4 | MTH 238 | Applied Diff. Equations | 3 |  |
| 3 | CMP | 204 | Visual Programming | 3 |
| $\underline{3}$ |  |  | ${ }^{6}$ Social/Behavioral Science | $\underline{3}$ |
| 17 |  |  |  | 16 |

${ }^{4}$ ENG 201 or ENG 203; ${ }^{5}$ ART 101 or MUS 101; ${ }^{6}$ PSY 201, UPL 103, HDF 201, SWK 200; SOC 201, GEO213, GEO 214, or GEO 215

## Junior Year

| MTH 301 | Abstract Algebra | 3 | ECO 200 | Basic Economics | 3 |
| :--- | :--- | :---: | :--- | :--- | :--- |
| MTH 351 | Intro. to Real Analysis I | 3 | CMP 380 | Computer Organization | 3 |
| CMP 215 | Data Structures | 3 | CMP 384 | Operating Systems | 3 |
| CMP 303 | Assembly Language | 3 | *MTH 302 | Abstract Algebra II or | 3 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| ENG 30cial/Behavioral Science |  | 3 | *MTH 352 | Intro. to Real Analysis II or | 3 |
|  | Advanced Composition | $\underline{3}$ | MTH | Elective (300 level) | 3 |
|  |  | 18 | *MTH 383 | Numerical Analysis | $\frac{3}{5}$ |

${ }^{6}$ PSY 201, UPL 103, HDF 201, SWK 200, SOC 201, GEO 213, GEO 214 or GEO 215; *Graduate School Track

|  | Senior Year |  |  |  | Sem. Hrs. |
| :--- | :--- | :---: | :--- | :--- | :---: |
| First Semester | Sem. Hrs. Second Semester | 3 |  |  |  |
| MTH 453 | Probability \& Statistics | 3 | MTH 481 | Senior Problem | 3 |
| CMP 401 | Software Engineering | 3 | CMP 488 | Intro to Database | 3 |
| CMP 425 | Theory of Algorithms | 3 | ENG 205 | General Speech | 3 |
|  | Elective or Co-op Experience | 3 | CMP 403 | Senior Problem | 3 |
| MTH | Elective (400 level) | $\underline{3}$ |  | Elective | $\underline{3}$ |
|  |  | 15 |  |  | 15 |

## COURSE DESCRIPTIONS

MTH 100 Developmental Mathematics - 3 hrs . This course covers basic arithmetic, basic algebra and basic geometry concepts. Included in its content are the four fundamental operations involving positive and negative real numbers, rational numbers, and percents; solving linear equations and inequalities; and pertinent application problems. Credit for this course may not be counted toward any degree requirements. Placement in this course is determined by performance on a placement test. (Offered Fall, Spring, Summer)

MTH 101 Fundamentals of Mathematics - 3 hrs.) This course covers graphing and linear systems, exponents and polynomials, factoring, rational expressions, roots and radicals, solving quadratic equations, compound inequalities, linear inequalities in two variables, variation, functions, and pertinent application problems. Prerequisite: MTH 100 or a satisfactory score on a placement test. (Offered Fall, Spring, Summer)

MTH 107 Modern Mathematics - 3 hrs. This course covers the metric system, sets, base numeration systems, systems of whole numbers, systems of integers, elementary number theory, elementary logic, relations, and functions. Prerequisite: MTH 100 or a satisfactory score on a placement test. (Offered Fall)

MTH 110 Finite Mathematics - 3 hrs. This course covers sets, counting, permutations, combinations, basic probability theory (including Baye's Theorem), statistical concepts (including binomial distributions, and normal distribution), matrices and their applications to Markov chains and decision theory. Additional topics may include symbolic logic, linear models, linear programming, the simplex method and applications. This course is designed for students who are not majoring in science, engineering, commerce, or mathematics (that is, students who
are not required to take calculus). Prerequisite: MTH 101 or satisfactory placement test scores (Offered Fall, Spring, Summer)

MTH 112 (Formerly MTH 103) Pre-Calculus Algebra - 3 hrs . This course covers the algebra of polynomial, rational, exponential and logarithmic functions; algebraic equations; linear and quadratic equations; linear and quadratic inequalities; systems of equations and inequalities; and the binomial theorem. Additional topics may include matrices, Cramer's rule, and mathematical induction. Prerequisite: MTH 101 or a satisfactory score on a placement exam. (Offered Fall, Spring and Summer)

MTH 113 (Formerly 104) Pre-Calculus Trigonometry - 3 hrs. This course covers the study of (circular) trigonometric functions; inverse trigonometric functions; trigonometric identities; and trigonometric equations. The course also covers vectors, complex numbers, DeMoivre's Theorem, and polar coordinates. Additional topics may include conic sections, sequences, and using matrices to solve linear systems. Prerequisite: MTH 112 or a satisfactory score on a placement exam. (Offered Fall, Spring and Summer)
(Formerly MTH 130) Calculus and Its Applications - 3 hrs. This course is intended to give a broad overview of calculus and is taken primarily by students majoring in commerce and business. It includes differentiation and integration of algebraic, exponential, and logarithmic functions and applications to business and economics. The course also includes functions of several variables, partial derivatives with applications, LaGrange multipliers, L'Hopital's rule, multiple integration with applications. This course does not substitute for MTH 125 or MTH 126. Prerequisite: MTH 112 (Offered Fall, Spring, Summer)

MTH 125 (Formerly MTH 171) Calculus I - 4 hrs. This course covers limits; derivatives of algebraic, trigonometric, exponential, and logarithmic functions; applications of the derivative; differentials; maximum and minimum problems; curve sketching using calculus; and the definite integral and its applications to area. This is the first of three courses in the basic calculus sequence taken primarily by students in science, engineering and mathematics. Prerequisite: MTH 113 or satisfactory placement test scores. (Offered Fall, Spring, Summer)

MTH 145 (Formerly MTH 171H) Honors Calculus I-4 hrs. This course covers the content of MTH 125 at an accelerated pace and includes a major application project. This course covers limits; derivatives of algebraic, trigonometric, exponential, and logarithmic functions; applications of the derivative; differentials; maximum and minimum problems; curve sketching using calculus; and the definite integral and its applications to area.. Prerequisite: MTH 113 or satisfactory placement test scores (Offered Fall)

MTH 126 (Formerly MTH 172) Calculus II - 4 hrs. This course covers applications of integration including volume, arc length and work; techniques of integration; infinite series; polar coordinates and polar graphs; vectors in the plane and in space, parametric equations; curves in the plane and in space; and lines and planes in space. This is the second of three courses in the basic calculus sequence. Prerequisite: MTH 125 or MTH 145 (Offered Fall, Spring, Summer)

MTH 146 (Formerly MTH 172H) Honors Calculus II - 4 hrs. This course covers contents of MTH 126 at an accelerated pace and includes a major application project. This course covers applications of integration including volume, arc length, and work; techniques of integration; infinite series; polar coordinates and polar graphs; vectors; parametric equations; curves in the plane and in space; and lines and planes in space. Prerequisite: MTH 125 or MTH 145 (Offered Spring)

MTH 301 Abstract Algebra I-3 hrs. Set theory; relations and functions; equivalence classes; logical connectives; inductive and deductive methods of proofs; negation; contrapositive; theory of groups I; rings; integral domains; fields. Prerequisites: MTH 126 or consent of instructor. (Offered Fall)

MTH 302

MTH 303

MTH 305

MTH 307
(Formerly MTH 201) Calculus III - 4 hrs. This course covers vector-valued functions; functions of several variables, partial derivatives and their applications; quadric surfaces, multiple integration, and vector calculus, including line and surface integrals; curl and divergence, Green's Theorem, and Stoke's Theorem. This is the third of three courses in the basic calculus sequence. Prerequisite: MTH 126 or MTH 146. (Offered Fall, Spring, Summer)
(Formerly MTH 202) Applied Differential Equations - 3 hrs. An introduction to numerical methods, qualitative behavior of first order differential equations, techniques for solving separable and linear equations analytically, and applications to various models, including populations, motions and chemical mixtures. Techniques for solving higher order linear differential equations
with constant coefficients, including the general theory and the methods of undetermined coefficients, reduction of order, and variation of parameters. Interpretation of the behavior of solutions, and applications to physical models with higher order governing equations. The Laplace transform as a tool for solving initial value problems with discontinuous inhomogeneous terms. Prerequisite: MTH 126 or MTH 146. (Offered Fall, Spring)
(Formerly MTH 203) Introduction to Linear Algebra - 3 hrs. Introduction to theory of matrices, determinants, methods of solving the linear system $\mathbf{A x}=\mathbf{b}$ via Gaussian elimination, GaussJordan elimination, eigenvalues and eigenvectors, diagonalization of matrices, real vector spaces, bases and dimension, linear transformations, inner product spaces. Additional topics may include quadratic forms and applications of matrix theory in solving differential equations. Prerequisites: MTH 126 or MTH 146. (Offered Fall)

Abstract Algebra II - 3 hrs. This course is a continuation of MTH 301. Unique factorization; theory of groups II; rings; theory of fields. Prerequisites: MTH 301 or consent of instructor. (Offered Spring)
(PHY 303) Methods of Mathematical Physics - 4 hrs. Vector calculus; partial differential equations; boundary value problems. Fourier series; Laplace transforms; and Green's function methods. Prerequisite: MTH 227 (Offered Fall and/or Spring)

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. (Not open to Mathematics majors or Secondary Education Mathematics majors). Prerequisite: MTH 126 or MTH 146.

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 projected geometry. Prerequisites: MTH 112. (Open to prospective secondary mathematics teachers). (Offered Fall and/or Spring)

MTH 357 Computers and the Teaching of Mathematics - 3 hrs . Introduction to digital computers; modern uses of computers, mathematics materials on computers and computing; uses of computers in mathematics instruction, laboratory practice and development of mathematics curriculum materials in a VISUAL BASIC language. (Open to prospective secondary school mathematics teachers). Prerequisite: MTH 113. (Offered Spring).

MTH 401 History of Mathematics - 1 hr . A course designed to explore and study topics in the history of mathematics. Prerequisite: MTH 125. (Offered Fall)

MTH 452 Complex Analysis - 3 hrs. The complex numbers; functions and continuity of complex variables; differentiability; Cauchy-Riemann conditions; contour integral theorem; sequences and series; the calculus of residues. Prerequisite: MTH 351. (Offered Spring).

MTH 453 (ST 453) Probability and Statistics - 3 hrs. Probability axioms; methods of enumeration; conditional probability; independence; empirical frequency distribution; discrete and continuous random variables; expectation; moment generating functions; joint distributions; sums of random variables; limit theorems. Prerequisite: MTH 126 or MTH 146. (Offered Fall, Spring and Summer)

MTH 454 Advanced Calculus - 3 hrs. Topics of advanced nature in differential and integral calculus. Emphasis is placed on the understanding of concepts and on the basic principles of analysis. Prerequisites: MTH 227. (Offered Spring)

MTH 480 Selected Topics in Mathematics - 3 hrs. A course designed to discuss current topics in algebra and/or analysis. Prerequisites: MTH 301, MTH 351 or consent of instructor (Offered Fall, Spring and/or Summer)

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 Spring)

ST 344 (MTH 344) Design and Analysis of Experiments I-3 hrs. A study of the fundamental concepts and basic principles of design, construction and analysis of experimental designs. Designs to be included are completely randomized complete block, Latin square, Graeco-Latin square, splitplot, multiple comparison, and factorial. Prerequisite: ST 324 or ST 327. (Offered Fall)

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 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 Spring)

# DEPARTMENT OF MILITARY SCIENCE <br> Room 4 ROTC Building <br> 256-851-5757 

## OBJECTIVES

The ROTC Program is a cooperative program contractually agreed to by the United States Army and Alabama A\&M University. The program provides 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. The department, in implementation of Military Qualification Standard I (MQSI), teaches and develops
cadets in accordance with the guidelines established by the Department of the Army for Officer pre-commissioning training.

## PROGRAM OFFERINGS

## BASIC COURSE <br> (MSC 101 and MSC 102; MSC 201 and MSC 202)

The Basic Course is taken during the freshman and sophomore years of college. While enrolled in the Basic Course, students are under no military obligation. Military Science is considered an integral part of the regular University program and in keeping with tradition. MSC 101, 102, 201 and 202 are considered as electives. Both male and female students are accepted on a voluntary basis. Those students who successfully complete the basic course, meet the Army physical standards, and demonstrate officer potential, will be considered for contracting and enrollment in the advanced course.

## ADVANCED COURSE

(MSC 301 and MSC 302; MSC 401 and MSC 402)
Students who have successfully completed the basic ROTC course or basic camp are eligible to enroll in the Advanced Course. Veterans who have had at least two years of active duty service, National Guard or United States Reserve members who have completed basic training, and students who have completed at least three years of JROTC, and who have completed 60 semester hours, may receive placement credit and authorization to enroll in the advanced program when approved by the Professor of Military Science (PMS).

## SPECIAL INFORMATION

To qualify for enrollment in the Advanced Course, a student must be medically qualified (determined by standard Army medical examination), achieve a minimum qualifying GPA of 2.0 , complete the two-year basic course, and gain approval by the PMS. Under the cross-enrollment program, students attending the University of Alabama in Huntsville and Athens State University are allowed to take ROTC at Alabama A\&M University, receive credit and qualify for a commission as an officer in the United States Army.

## 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

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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 drill team, Ranger Company, Pershing Rifles, 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. Basic camp candidates must register for the basic camp six (6) credit hours (MSC 206) during the summer prior to attending basic camp. In this instance, the semester-hour requirement will be met in order to earn a minor in Military Science.

The minor program consists of the following courses:

## Freshman Year

First Semester
MSC 101 Military Science I-A

First Semester
MSC 201 Military Science II-A

First Semester
MSC 301 Military Science III-A

First Semester
MSC 401 Military Science IV-A

Sem. Hrs. Second Semester
2 MSC 102 Military Science I-B
Sophomore Year
Sem. Hrs. Second Semester
2 MSC 202 Military Science II-B
Junior Year
Sem. Hrs. Second Semester Sem. Hrs.
3 MSC 302 Military Science III-B 3
Senior Year
Sem. Hrs. Second Semester
3 MSC 402 Military Science IV-B

Sem. Hrs.
2

Sem. Hrs.
2

Sem. Hrs.
3

## COURSE DESCRIPTIONS

MSC 101 Military Science I-A - 2 hrs. The class presents a broad overview of the history of ROTC, the ROTC program and its benefits tot ht student. The positive aspects of a career as an Army officer include information on pay and allowances, the military retirement system, advancement, and travel opportunities. Military customs and traditions are discussed along with the role of the Army, the Army Reserves and the National Guard. Students receive instruction on basic first aid, principles of leadership and traits of a leader. 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. (One, 2-hour class period and one, 2 -hour leadership development laboratory). The course consists of instructions on the rules, techniques, and formats of effective military communications through military correspondence and briefings. The course covers the mission and functions of the various military branches. Students receive instruction on the organization, mission and weapons of the rifle squad, platoon, and company, along with being familiarized with the organization of the battalion, brigade, and divisional size units. The principles of war are analyzed to determine their proper employment. The confluence and interaction of military affairs with diplomatic, political, social, economic, and intellectual
trends in society are addressed. Students are also provided instruction in map reading, which includes grid,
scale and distance, direction, azimuth and backazimuth, elevation and relief. Prerequisites: MSC 101 and MSC 102 (Offered Fall)

MSC 202 Military Science II-B - 2 hrs. A continuation of MSC 202. Prerequisite: MSC 201 (Offered Spring)

MSC 206 Basic Camp - 6 hrs. This course is designed to provide an orientation to students without military training background and also gives students an opportunity to examine military life. Successful completion of a six-week summer camp experience at Fort Knox, Kentucky, entitles the student completing the sophomore year to receive two years placement credit. There is no obligation or commitment to military service beyond the basic camp for students who elect not to enter the advanced program. Basic camp students earn more than $\$ 700.00$ while participating in the summer training at Fort Knox. Registration for academic credit for ROTC basic camp is optional. Students who have no desire to receive academic credit for MSC 206 are not required to register for basic camp. However, prior registration and tuition payment are required for those who wish to receive academic credit for successful completion of basic camp. Prerequisite: (Offered Summer)

MSC 301 Military Science III-A - 3 hrs. (Three, 1-hour classroom sessions and one, 2-hour leadership development laboratory, and an advanced camp of six (6) weeks duration). The course consists of instruction in reference to company and platoon level training, counseling, communication skills, human relations and various other topics. Additionally, students receive instruction on the fundamentals of map reading which encompasses grid, scale and distance, direction, elevation and relief, intersection and resection. Students are introduced to the fundamentals of tactical operations, to include writing of combat orders, command and staff organizations, command/staff actions, command relationships, communication systems, intelligence gathering, and the role of the various branches of the Army. Students are taught first Aid and selected other subjects to prepare them for attendance at advanced camp. 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 precommissioning 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 $I V-B-3$ hrs. A continuation of MSC 401. Prerequisite: MSC 401 (Offered Spring)

MSC 501 Military Science $V-A-2$ hrs. Students receive instruction encompassing briefings and selected military topics as well as physical training. Prerequisite: Extension of scholarship benefits for approved cadets, MSC 301, MSC 302, MSC 401, and MSC 402 (Offered Fall)

MSC 502 Military Science $V$-B - 2 hrs. A continuation of MSC 501. Prerequisite: MSC 501 (Offered Spring)

## DEPARTMENT OF NATURAL AND PHYSICAL SCIENCES Room 309 Carter Hall 256-851-5329

The Department of Natural and Physical Sciences includes the program areas of biology, chemistry, and mathematics

## BIOLOGY PROGRAM AREA OBJECTIVES

The objectives of the biology program are to educate teachers and to prepare students for entrance into graduate school, research careers, medicine, pharmacy, dentistry, veterinary medicine, clinical technology and related health service occupations.

## OVERVIEW OF THE PROGRAM

The program offers a Bachelor of Science degree in one major, "Biology," with five options of concentration. The options are: Botany, Zoology, Medical Technology, Pre-Medicine and Ecotoxicology. The curriculum consists of (a) required non-biology courses, (b) required biology courses, and (c) specific electives for the various options. Students, with recommendations from their advisors, may select a minimum of 8 hours under the track options. The curriculum includes 114 semester hours of core and specialty courses as a biology major, 8 semester hours of biology option courses and 4 semester hours of free electives for a total of 126 semester hours needed for graduation with a B.S. degree in biology.

Although all biology options can provide prerequisites for several health-related professions such as physical therapy, surgeon's assistant, cytotechnology, occupational therapy, and public health, a specific cooperative degree curricula in pre-nursing is also offered.

The pre-medicine option is designed to meet needs in areas such as pre-dentistry, pre-medicine, and for students who plan to pursue graduate work. The botany option is designed to prepare students for careers in areas such as botany, pharmacy, forestry, herbology, plant ecology and plant taxonomy. The ecotoxicology option prepares students for careers in toxicology, environmental toxicology, environmental health, conservation, and research careers in industry and government.

The biology program provides, in cooperation with the School of Education, curricula for students planning to teach general biology in high schools. The curriculum for general biology education is found under the section devoted to secondary education in this catalogue.

## BIOLOGY MAJOR

126 Credit Hours

## Freshman Year

First Semester
ORI 101 Survival Skills

Sem. Hrs. Second Semester
1 PSY 201 Gen. Psychology

Sem. Hrs. 3

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| ENG | 101 | Communication Skills |
| :--- | :--- | :--- |
| HIS | 101 | World History I |
| BIO | 103 | Principles of Biology |
| BIO | 103 L | Principles of Biology Lab |
| HED | 101 | Health Education or |
| MSC | 101 | Military Science or |
| PED | 103 | Fitness for Life |
|  | 101 | Art or Music Apprecia |
| BIO | 100 | Careers in Life Science |
|  |  |  |
|  |  |  |
| First Semester |  |  |
| ENG | 203 | Humanities I |
| MTH | 113 | Pre-Cal. Trig |
|  | 101 | (GER. FRE, or SPA) |
| CHE | 101 | Gen. Chemistry I |
| CHE | $103 L$ | Gen. Chemistry Lab I |
| ECO | 200 | Basics Economics |


| ENG | 102 | Communication Skills I | 3 |  |  |
| :--- | :--- | :--- | ---: | :---: | :---: |
| HIS | 102 | World History II | 3 |  |  |
| BIO | 201 | Invertebrate Zoo | 3 |  |  |
| BIO | 201L | Invertebrate Zoo Lab | 1 |  |  |
| CMP | 101 |  |  |  |  |
|  | $\quad$ Information Systems |  |  |  | 3 |
| MTH | 112 | Pre-Cal Algebra | $\underline{3}$ |  |  |
|  |  | 19 |  |  |  |

## Sophomore Year

Sem. Hrs. Second Semester Sem. Hrs.

| 3 | ENG 204 | Humanities II | 3 |  |
| ---: | :--- | :--- | :--- | ---: |
| 3 | MTH 125 | Calculus I | 4 |  |
| 3 |  | 102 | (GER, FRE, or SPA) | 3 |
| 3 | CHE | 102 | Gen. Chemistry I | 3 |
| 1 | CHE | 104 | Gen. Chemistry Lab II | 1 |
| $\underline{3}$ | BIO | 202 | Comp. Anatomy | 3 |
| 16 | BIO | 202L | Comp. Anatomy Lab | $\underline{1}$ |
|  |  |  |  | 18 |

Junior Year
First Semester

| PHY 105 | Physics I |  |
| :--- | :--- | :--- |
| CHE | 301 | Organic Chemistry I |
| CHE | 303L | Organic Chemistry Lab I |
| BIO | 203 | General Botany or |
| BIO 204 | General Botany |  |
| BIO 204L | General Botany Lab |  |
| MTH 126 | Calculus II |  |

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| BIO | 434 | Physiology |
| :--- | :--- | :--- |
| BIO | 434 L | Physiology Lab |
| BIO | 330 | Microbiology |
| BIO | 330 L | Microbiology Lab |
| BIO |  | Elective |
|  |  | Free Elective |


| 4 | PHY | 106 | Physics II | 4 |
| :---: | :--- | :--- | :--- | :--- |
| 3 | CHE | 302 | Organic Chemistry II | 3 |
| 1 | CHE | 304 L | Organic Chemistry Lab II | 1 |
|  | BIO | 311 | Genetics | 3 |
| 3 | BIO | 311 L | Genetics Lab | $\underline{1}$ |
| 1 |  |  | 12 |  |
| $\frac{4}{16}$ |  |  |  |  |

## Senior Year

Sem. Hrs. Second Semester
Sem. Hrs.
3 BIO 411 Cell Biology 3
1 BIO 411L Cell Biology Lab 1
3 BIO Elective 4
$\begin{array}{llll}1 & \text { CHE } & 407 & \text { Biochemistry }\end{array} \quad \underline{4}$

Note: This curriculum includes 114 hours of core courses as a Biology major, 8 hours of biology option courses, and 4 hours of free electives. A track option must be selected. Students may not substitute courses in a track option. 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:

| Track 1 | Track 2 | Track 3 | Track 4 | Track 5 |
| :--- | :--- | :--- | :--- | :--- |
| Botany | $\underline{\text { Zoology }}$ | $\underline{\text { Med-Tech }}$ | $\underline{\text { Pre-Med }}$ | $\underline{\text { Ecotoxicology }}$ |
| Plant Physiology | Molecular Biology | Med. Micro | Molecular Biology | Environmental Biology |
| Plant Pathology | Parasitology | Parasitology | Human A\&P | Ecotoxicology I |
| Plant Anatomy | Entomology | Anal. Chemistry | Med. Micro | Limnology |
| Environmental Biology | Med. Microbiology | Immunology <br> Biochemistry | Biochemistry | Immunology <br> Biochemistry <br> Embryology |
|  |  |  | Ecotoxicology II |  |
|  |  |  |  |  |

Note: Students, with recommendation of advisor, may select a minimum of 8 semester hours for a track option in the biology major program. Students may not substitute courses in a track option.

## PRE-NURSING PROGRAM

A two-year pre-nursing program is offered. Upon completion of these two years, the student is advised to register in a two-year professional curriculum in nursing. Cooperative agreements are currently maintained with Emory University in Atlanta, Georgia; the University of Alabama in Birmingham (UAB); the University of Alabama at Huntsville (UAH); 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.

First Semester

| ORI | 101 | Survival Skills |
| :--- | :--- | :--- |
| ENG | 101 | Communication Skills I |
| HIS | 101 | World History I |
| CHE | 111 | Applied Chemistry I |
| CHE | 113 L | Applied Chemistry Lab II |
|  | 101 | Art or Music Appreciation |
| BIO | 103L | Principles of Biology |
| BIO | 100 | Careers in Life Science |
| BIO | 103 | Principles of Biology |

Sem. Hrs. Second Semester
1 ENG 102 Communication Skills II 3
3 HIS 102 World History II 3
CHE 112 Applied Chemistry 3
3 CHE 114L Applied Chemistry Lab 1
SOC 210 Social Problems 3
3 PSY 301 Elem. Behavioral Statistics 3
1 MTH 112 Pre-Cal Algebra $\underline{3}$
1 - 19
3
19
3

3
3

Freshman Year

## Sem. Hrs.

Sophomore Year
First Semester

| *PHY 101 | Physical Science |  |
| :--- | :--- | :--- |
| PSY | 201 | General Psychology |
| BIO | 221 | Human A\&P |
| BIO | 221 L | Human A\&P Lab |
| ECO | 323 | Principles of Economics |
| ENG 203 | Humanities I |  |
| SOC | 201 | Intro. to Sociology |


| Sem. Hrs. | Second Seme | ester | Sem. Hrs. |
| :---: | :---: | :---: | :---: |
| 3 | *PHY 102 | Physical Science | 3 |
| 3 | PSY 330 | Social Psychology | 3 |
| 3 | SOC 212 | Marriage \& Family | 3 |
| 1 | BIO 330 | Microbiology | 3 |
| 3 | BIO 330L | Microbiology Lab | 1 |
| 3 | PSC 306 | State \& Local Government or |  |
| $\underline{3}$ | PSC 305 | Federal Government | 3 |
| 19 | BIO 222 | Human A\&P | 1 |
|  | BIO 222L | Human A\&P Lab | $\underline{3}$ |

* If students fail to enter or complete a nursing program and choose to re-enter to get a biology degree, he/she must complete one of the track options.
Required only if students plan to attend Emory University after completing two years at Alabama A\&M University.


## COURSE DESCRIPTIONS

BIO 100 Introduction to Careers in Life Sciences - 1 hr . Familiarization with all careers in life sciences. Required of all majors. Prerequisite: None (Offered Fall)

BIO 101 General Biology - 3 hrs. (Three 1 hr . Lectures). The first part of a full year's course in the biological sciences. The first semester is devoted to an investigation of basic biological concepts and their application to the variety of life. Selected examples from the major groups of animals and plants are used. For non majors. Prerequisite: None Co-requisite: BIO 101L (Offered Fall, Spring, and Summer)

BIO 101L General Biology Lab-1 hr. (One 2 hr Lab) Lab designed to enhance and accommodate BIO 101. For non-majors majors. Prerequisite: None Co-requisite: BIO 101 (Offered Fall, Spring, and Summer)

BIO 102 General Biology - 3 hrs. (Three 1 hr. Lectures). The second semester is devoted to the biology of humans. The problems of support, movement, supply of materials, distribution, waste removal, regulation and reproduction are described in detail. For non-majors majors. Prerequisite: None Co-requisite: BIO 102L (Offered Fall, Spring, and Summer)

BIO 102L General Biology Lab-1 hr. (One 2 hr . Lab) Lab designed to enhance and accommodate BIO 102. For non-majors majors. Prerequisite: None Co-requisite: BIO 102 (Offered Fall, Spring, and Summer)

BIO 103 Principles of Biology - 3 hrs . (Three 1 hr . Lectures). A study of fundamental biological principles with primary emphasis on molecular basis of life and cellular organization: cellular energetics and metabolism; growth and reproduction; and genetics and evolution. Required of all majors. Prerequisite: None (Offered Fall, Spring, and Summer)

BIO 103L Principles of Biology Lab-1 hr. (One 2 hr . Lab) A customized lab to accommodate BIO 103 for majors. Prerequisite: None (Offered Fall, Spring, and Summer)

BIO 200 Environmental Biology - 3 hrs. An introduction to natural biological processes and their impact on man and his environment. Emphasis on problems caused by man's use of the natural world will be made along with an introduction to the principles of applied and environmental microbiology. Specific topics to be discussed include environmental virology, disinfection of water and wastewater, biogeochemical cycles, biology of waste treatment and biological aerosols. Prerequisite: BIO 103 (Offered Spring)

BIO 201 Invertebrate Zoology - 3 hrs. A study of the body plans, physiology, taxonomy and development of the major groups of animals lacking backbones. Life histories of animals that affect the welfare of humans are stressed. Prerequisite: BIO 103 (Offered Spring)

BIO 201L Invertebrate Zoology Lab-1 hr. A companion lab for BIO 201 covering the lecture topics. Prerequisite: BIO 103L (Offered Spring)

BIO 202 Comparative Vertebrate Anatomy - 3 hrs . Morphological study of the vertebrates with a comparative study of the organic systems and their phylogenetic significance. Laboratory techniques in dissection of the frog and cat. Prerequisite: BIO 103. (Offered Fall)

BIO 202L Comparative Vertebrate Anatomy Lab-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 an plants and the composition of various communities. Prerequisite: Consent of instructor. (Offered Spring)

BIO 205L Ecology Lab-1 hr. A companion lab for BIO 205 covering the lecture topics. Co-requisite: BIO 205 (Offered Spring)

BIO 221 Human Anatomy \& Physiology I-3 hrs. A study of cell structure, function and organization, body covering and thermal regulation, skeletal and muscular systems, central, peripheral, sensory nervous system, and cardiovascular systems. Prerequisite: BIO 101, 102 or 103. (Offered Fall and Summer)

BIO 221L Human Anatomy \& Physiology I Lab-1 hr. A companion lab for BIO 221 covering the lecture topics. Prerequisite: BIO 101L, 102L or 103L. (Offered Fall and Summer)

BIO 222 Human Anatomy \& Physiology II - 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 311 Principles of Genetics - 3 hrs. A primary emphasis on classical concepts with an integration of microbial and molecular genetics at crucial points. Laboratory exercise includes use of plants, animals and microbes. Prerequisites: CHE 101, and CHE 101L; CHE 102 and CHE 102L; and BIO 103 and BIO 103L. Co-requisite: BIO 311L(Offered Spring)

BIO 311L Principles of Genetics Lab-1 hr. A companion lab for BIO 311 covering the lecture topics. Prerequisites: CHE 101 and 101L, CHE 102 and 102L, BIO 103 and BIO 103L. Corequisite: BIO 3II. (Offered 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-

SCHOOL OF ARTS AND SCIENCES 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

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. 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 Corequisites: 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 Corequisites: BIO 344 (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. Corequisite: 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 450 Radiation Biology - 3 hrs. An introduction to basic concepts of various forms of radiation and their effects and uses on living systems. Basic tracer techniques using isotopes will be represented in the laboratory. Prerequisites: BIO 101 and 101L; and 102 and 102L or 103 and 103L. (Offered Spring)

BIO 451 Plant Anatomy - 3 hrs. Study of plant cells, tissues and organ systems of vascular plants, their ontogeny, differentiation and maturation. Students will learn modern techniques of preparing plant materials for microscopic study. Prerequisite: BIO 203 and 203L; BIO 204 and BIO 204L Co-requisite: BIO 451L. (Offered Fall)

BIO 451L Plant Anatomy Lab - 1 hr . A companion lab for BIO 451 covering the lecture topics. Prerequisite: BIO 203 and 203L; and BIO 204 and 204L Co-requisite: BIO 451. (Offered Fall)

BIO 454 Plant Pathology - 3 hrs. History, nonparasitic, and parasitic diseases incited by bacteria fungi, plasmodiophorales, nematodes and viruses will be discussed. Disease control through exclusion, eradication, protection and post resistance will be mentioned. Prerequisite: BIO 344 and 344L Co-requisite: BIO 454L. (Offered Fall)

BIO 454L Plant Pathology Lab - 1 hr . A companion lab for BIO 454 covering the lecture topics. Prerequisite: BIO 344 and 344L Co-requisite: BIO 454. (Offered Fall)

BIO 461 Plant Physiology - 3 hrs. The basic physical and chemical organization and metabolism in higher plants with emphasis on various aspects of nutrition and growth. Prerequisite: BIO 203 and 203L; and BIO 204 and 204L Co-requisite: 461L. (Offered Fall)

BIO 461L Plant Physiology Lab-1 hr. A companion lab for BIO 461 covering the lecture topics. Prerequisite: BIO 203 and 203L; BIO 204 and 204L Co-requisite: BIO 461. (Offered Fall)

BIO 471 Biology Seminar - 1 hr. Discussions of biological literature, careers in biology, graduate schools, and specialty schools. Pertinent discussions on current biological topics. Prerequisite: BIO 103 and 103L (Offered Fall, Spring, and Summer)

BIO 481 Research in Biology - Credits arranged. Formation and execution of research projects in biology under supervision of an advisor. Open only to junior and senior students. Prerequisite: BIO 471 (Offered Fall, Spring , and Summer)

BIO 482 Biomedical Research - 1-3hrs. A course designed for students who plan to pursue graduate work in the area of biomedical research. The course consists of performing research under the supervision of a qualified biomedical research faculty member. The results of such research will be presented at a formal scientific meeting and published in a recognized journal when possible. Prerequisites: Open only to junior and seniors with permission of biomedical research faculty. (Offered as needed)

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

Room 230 Chambers
256-851-4912

## 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 as follows:

## GENERAL REQUIREMENTS AND INFORMATION

The curricula outlined on the following pages use as an example a minor in mathematics. This is chosen since the mathematics minor is one of the most popular among majors in chemistry. Other minor options such as physics, computer science, biology, agricultural, forestry and food sciences may be used. To pursue such minors, the sections in the catalog that describe these minor options must be consulted and the details worked out with the student's chemistry advisor. The choice of a minor is left to the student but should be closely related to a career goal. Graduate school aspirants usually elect mathematics or physics as minors, whereas students oriented towards medical and health-related areas will usually select a biology minor. In any event, the department requires that every student majoring in chemistry have a minor option.

Requirements for a major include 50 semester hours of chemistry as indicated in the curriculum. Additional courses in chemistry may be suggested by the advisor. Also required are two semesters of general physics), Calculus I, II and III, one semester of differential equations, and four semesters of foreign language. However, two semester of a programming language or another foreign language may be substituted for German 201 and 202. Students majoring in chemistry must begin their work in the major in the freshman year. Chemistry majors should consult the chemistry faculty members assigned to them with regard to electives. Faculty advisors are listed in the "Student Advisory Handbook" available in the departmental office.

Requirements for a minor consist of 24 semester hours. These must include Chemistry 101 and 102, 201 and 202, 301 and 302 with their accompanying laboratories. With Departmental permission, ( 4 hrs.) may be substituted for CHE 201 and 202 and accompanying laboratories. With this option, 20 CHE 221semester hours are required for the minor.

Approximately 45 hours of general education courses are required. These are incorporated into the curricula that follow and may be found under the General Education Program Information section of the catalog. The chemistry major curriculum automatically satisfies the mathematics and physical science requirements. To complete the 128 total hours required for a chemistry major, the student may select as many as six hours of free electives (any courses offered or accepted by the University).

General, analytical, organic, physical, instrumental methods and biochemistry have separate lecture and laboratory sections. Majors or minors may not combine lecture or laboratory sequences of unrelated courses to
complete requirements for graduation. To receive full credit for a course as a major or minor in chemistry, each lecture course must be taken in conjunction with the corresponding laboratory course.

Students may receive advanced standing in chemistry by submitting a written request to the department chairperson to schedule a departmental examination. Successful completion of this examination may result in waiver of one or both parts of general chemistry and/or the laboratory. A laboratory fee is required for all chemistry courses requiring laboratory activity. Safety goggles and laboratory aprons are strict requirements for all students in all laboratory courses. Consistent violations of laboratory safety rules could result in suspension from the laboratory.

The major sequences listed herein incorporate (but do not require) a minor in mathematics. For other minor requirements (biology, physics, food science, computer science, etc.), see the sections of the catalog where these are described.

## COOPERATIVE EDUCATION PROGRAM IN CHEMISTRY

Cooperative education is a program that combines professional experience with academic study. Cooperative education students alternate terms at school with terms of work in a professional assignment that is related to their field of study. This program enables students to prepare more realistically for their future careers in industry and business.

Students majoring in chemistry have participated in cooperative education assignments at such locations as the 3-M Corporation, Decatur, Alabama; Environmental Protection Agency (EPA), Athens, Georgia; IBM Corporation, East Fishkill, New York; General Electric Company, Mt. Vernon, Indiana; TVA, Muscle Shoals, Alabama; Crane Naval Facility, Crane, Indiana; and the U.S. Army Depot, Anniston, Alabama. The assignments are challenging, provide job experience for the student, and allow the student to earn needed income to help defray university expenses.

There are many choices of work locations. The schedule of alternate work and school terms will vary and will depend on the needs of the student and employing agencies. This schedule is usually worked out to the satisfaction and mutual benefit of both. Any student who is interested in such a program should contact the Chairperson, Department of Natural and Physical Sciences or the Director of Cooperative Education, Alabama A\&M University.

## PROGRAM CURRICULUM

The chemistry curricula, that follow, are divided into a regular major curriculum and honors curriculum. Students with very good high school backgrounds in chemistry will be encouraged to take courses within the honors curriculum, which is patterned after recommendations of the American Chemical Society. The academic advisor for the program selected by the student must be consulted before enrolling in this curriculum. Most students will take courses within the regular major curriculum.

## Chemistry Majors

This sequence of courses is open to all students and may be taken by persons with or without a chemical background from high school. Fifty semester hours are required for the major which include the following courses:

| Course Number | $\frac{\text { Course Title }}{\text { General Chemistry I }}$ | $\quad$ Semester Hours |
| :--- | ---: | :--- |
| CHE 101 |  |  |


| CHE | 101 L |
| :--- | :--- |
| CHE | 102 |
| CHE | 102 L |
| CHE | 201 |
| CHE | 201 L |
| CHE | 202 |
| CHE | 202 L |
|  |  |
| CHE | 221 |
| CHE | 221 L |
| CHE | 301 |
| CHE | 301 L |
| CHE | 302 |
| CHE | 302 L |
| CHE | 308 |
| CHE | 401 |
| CHE | 401 L |
| CHE | 402 |
| CHE | 402 L |
| CHE | 403 |
| CHE | 404 |
| CHE |  |
| CHE |  |
| CHE |  |
| CHE |  |

General Chemistry I Lab 1

General Chemistry II 3
General Chemistry II Lab 1
Analytical Chemistry I 3
Analytical Chemistry I Lab 1
Analytical Chemistry II 3
Analytical Chemistry II Lab 1
OR
Analytical Chemistry I 3
Analytical Chemistry I Lab 1
Organic Chemistry I 3
Organic Chemistry I Lab 1
Organic Chemistry II 3
Organic Chemistry II Lab 1
Special Topics 3
Physical Chemistry I 3
Physical Chemistry I Lab 1
Physical Chemistry II 3
Physical Chemistry II Lab 1
Research I 2
Research II 2
Elective 3
Elective 3
Elective 3
Elective $\underline{3}$

## Chemistry Minors

Twenty-four (or 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 |
|  | Course Title |  |
| Course Number |  | Semester Hours |
| CHE 201 | Analytical Chemistry I | 3 |
| CHE 201L | Analytical Chemistry I Lab | 1 |
| CHE 202 | Analytical Chemistry II | 3 |
| CHE 202L | Analytical Chemistry II Lab | 1 |
|  |  | Analytical Chemistry I |

## Non-Majors

Included in these course offerings are courses in applied chemistry, intended for non-majors who need more of the applied and industrially oriented aspects of chemistry. They are taught using a largely non-mathematical approach. All advisors should consult the program area of chemistry to determine which course best fits a given set of circumstances.

## Applied Courses In Chemistry

| Course Number |
| :--- |
| CHE 111 |
| CHE 111L |
| CHE 112 |
| CHE 112L |
| CHE 311 |
| CHE 312 |

First Semester

| ENG | 101 | Communication Skills I | 3 |
| :--- | :--- | :--- | :--- |
| ORI | 101 | Survival Skills |  |
| MTH | 125 | Calculus I | 4 |
| CHE | 101 | General Chemistry I | 3 |
| CHE | 101 L | General Chemistry I Lab | 1 |
| ${ }^{1}$ HIS |  | World History I | 3 |
| ${ }^{2}$ HED |  | Personal \& Comm. Health | $\underline{2}$ |

Semester Hours
Applied Chemistry I 3
Applied Chemistry I Lab 1
Applied Chemistry II 3
Applied Chemistry II Lab 1
Applied Organic Chemistry I 4 (6 clock hours)
Applied Organic Chemistry II 4 ( 6 clock hours)

DEGREE IN CHEMISTRY
Chemistry Major, Mathematics Minor
128 Credit Hours
Freshman Year
Sem. Hrs. Second Semester Sem. Hrs.

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## Junior Year

## First Semester

ENG 304 Advanced Composition
${ }^{4}$ GER 201 Intermediate German I
CHE 301 Organic Chemistry I
CHE 301L Organic Chemistry I Lab
MUS 101 Music Appreciation
CHE 403 Research I
${ }^{5} \mathrm{CHE} \quad$ Elective

Sem. Hrs. Second Semester
3 ART 101 Art Appreciation
3 GER 202 Intermediate German II 3
3 CHE 302 Organic Chemistry II 3
1 CHE 302L Organic Chemistry II Lab 1
3 CHE 308 Special Topics 3
2 CHE 404 Research II
Sem. Hrs.
3
3

2
15
${ }^{4}$ Two semesters of a programming language or another foreign language may be substituted for German 201 and 202.
${ }^{5}$ Chemistry majors should consult the chemistry faculty assigned to them with regards to the selection of electives.

## Senior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| PSY | 201 | General Psychology | 3 | PHL | 201 | Intro. to Philosophy | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| CHE | 401 | Physical Chemistry I | 3 | CHE | 402 | Physical Chemistry II | 3 |
| CHE | 401L | Physical Chemistry I Lab. | 1 | CHE | 402L | Physical Chemistry II Lab, | 1 |
| CHE | 409 | Instrumental Methods | 3 | CHE | Elective | 3 or 4 |  |
| CHE | Elective | $\underline{3}$ |  |  | ${ }^{6}$ Free Electives | $\underline{3}$ |  |
|  |  |  | 13 |  |  |  | $13 / 14$ |

${ }^{6}$ To complete the 128 total hours required for a chemistry major, the student may select as many as six hours of free electives (any courses offered or accepted by the University).

## Chemistry Major --- Mathematics Minor Electives:

| Course Number | Course Title | Semester Hours |
| :--- | :--- | :---: |
| 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 |
|  | Course Title | Semester Hours |
| Course Number | Biochemistry II | 3 |
| CHE 408 | Biochemistry II Lab | 1 |
| CHE 408L | Instrumental Methods and Materials Evaluation | 3 |
| CHE 409 | Instrumental Methods and Materials Evaluation Laboratory | 1 |

# DEGREE IN CHEMISTRY --- HONORS OPTION 

Chemistry Major, Mathematics Minor<br>128 Credit Hours

Freshman Year
First Semester

Sem. Hrs. Second Semester

## Sem. Hrs.

$\left.\begin{array}{lllllll}\text { ENG } & 101 & \text { Communication Skills I } & 3 & \text { ENG } 102 & \text { Communication Skills II } & 3 \\ \text { ORI } & 101 & \text { Survival Skills } & 1 & \text { ECO 200 } & \text { Basic Economics } & 3 \\ \text { MTH } & 125 & \text { Calculus I } & 4 & \text { MTH 126 } & \text { Calculus II } & 4 \\ \text { CHE } & 121 & \text { Chemical Principles I } & 3 & \text { CHE 122 } & \text { Chemical Principles II } & 3 \\ \text { CHE } & \text { 121L } & \text { Chemical Principles I Lab } & 1 & \text { CHE } & \text { 122L } & \text { Chemical Principles II Lab }\end{array}\right] 1$
${ }^{1}$ All students, except teacher education majors must take a six-semester credit hours sequence in history or literature.
${ }^{2}$ Two semesters of Physical Education Activities (PED) or one semester of Military Sciences (MSC) may be substituted for Personal \& Community Health

## Sophomore Year

First Semester
ENG 203 Humanities I
MTH 227 Calculus III
CHE 221 Analytical Chemistry I
CHE 221 L Analytical Chemistry I Lab
GER 101 Elem. German I
${ }^{3}$ PHY 105 General Physics I
${ }^{3}$ With departmental permission, two semesters of general biology (plus related laboratories) may be substituted for the two semes physics.

## Junior Year

First Semester
ENG 304 Advanced Composition
${ }^{4}$ GER 201 Intermed. German I
CHE 301 Organic Chemistry I
CHE 301L Organic Chemistry I Lab

Sem. Hrs. Second Semester
3 ART 101 Art Appreciation
3 GER 202 Intermed. German II 3
3 CHE 302 Organic Chemistry II 3
1 CHE 302L Organic Chemistry II Lab 1

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| MUS 101 | Music Appreciation | 3 | CHE 308 | Special Topics | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| CHE 403 | Research I | 2 | CHE 404 | Research II | $\underline{2}$ |
| ${ }^{5} \mathrm{CHE}$ | Elective | $\underline{3}$ |  |  | 15 |
|  |  | 18 |  |  |  |

${ }^{4}$ Two semesters of a programming language or another foreign language may be substituted for German 201 and 202.
${ }^{5}$ Chemistry majors should consult the chemistry faculty assigned to them with regards to the selection of electives.

## Senior Year

| First Semester |  |
| :---: | :---: |
| PSY 201 | General Psychology |
| CHE 401 | Physical Chemistry I |
| CHE 401L | Physical Chemistry I Lab. |
| CHE 409 | Instrumental Methods |
| CHE 409 | Instrumental Methods L |
| ${ }^{6} \mathrm{CHE}$ | Elective |
| ${ }^{7} \mathrm{MTH}$ | Elective |


| Sem. Hrs. | Second Semester |  |  |
| :---: | :--- | :--- | :---: |$c$ Sem. Hrs.

${ }^{6}$ To complete the 128 total hours required for a chemistry major, the student may select as many as six hours of free electives (any courses offered or accepted by the University).
${ }^{7}$ To complete the required 18 hours for the mathematics minor, the student may select a 3 hour course from the list of 300 level elective in mathematics. The elective must have Departmental approval.

## Honors Chemistry Major, Mathematics Minor Electives:

| Course Number | Course Title | Semester Hours. |
| :--- | :--- | :---: |
| CHE 306 | Chemical Synthesis | 3 |
| CHE 405 | Advanced Organic Chemistry | 3 |
| CHE 406 | Advanced Inorganic Chemistry | 3 |
| CHE 407 | Biochemistry I | 3 |
| CHE 407L | Biochemistry I Lab | 1 |
| CHE 408 | Biochemistry II | 3 |
| CHE 408L | Biochemistry II Lab | 1 |
| CHE 409 | Instrumental Methods and Materials Evaluation | 3 |
| CHE 409 L | Instrumental Methods and Materials Evaluation Laboratory | 1 |
| CHE 411 | Organic Qualitative Analysis | 3 |

## COURSE DESCRIPTIONS

CHE 101 General Chemistry I-3 hrs. A study of the fundamental laws of matter that govern physical and chemical changes. Atomic and molecular theories, atomic structure, periodic functions and clas-
sification of the elements are addressed. Required of all majors in chemistry. (Regular) Prerequisite: None Co-requisite: CHE 101 (Offered Fall, Spring and Summer)

CHE 101L General Chemistry I Lab - 1 hr. (3 clock hrs.) Laboratory to accompany CHE 101. Basic exercises in general chemistry, to include fundamental operations used in making scientific measurements; properties of gases, liquids and solids, chemical elements and compounds are included. (Regular) Prerequisite: None Co-requisite: CHE 101 (Offered Fall, Spring and Summer)

CHE 102 General Chemistry II - 3 hrs. A study of radioactivity, solutions and electrolytes, ionization; properties, and reactions and uses of important metallic and non-metallic elements. An introduction to qualitative analysis. Prerequisites: CHE 101 and CHE 101L Co-requisite: CHE 102L (Offered Fall, Spring and Summer)

CHE 102L General Chemistry II Lab - 1 hr. (3 clock hrs.) Laboratory to accompany CHE 102. An introduction to quantitative and qualitative analyses. Acid-base titrations, reaction kinetics, qualitative analyses of the elements are covered. Prerequisites: CHE 101 and CHE 101L Corequisite: CHE 102 (Offered Fall, Spring and Summer)

CHE 111 Applied Chemistry I-3 hrs. A course designed to explore historical and modern day applications of chemical principles to the solution of problems and the contribution of chemistry to modern technological achievements. Some field trips to manufacturing facilities and other appropriate chemically-oriented facilities may be scheduled. Not open to chemistry majors and minors as a substitute for CHE 101 or CHE 121. Prerequisite: None Co-requisite: CHE 111L (Offered Fall, and Summer)

CHE 111L Applied Chemistry I lab-1 hr. A laboratory course to accompany CHE 111. Basic exercises in general chemistry, to include fundamental operations used in making scientific measurements; properties of gases, liquids, solids, chemical elements and compounds. Not open to chemistry majors and minors as a substitute for CHE 101 or CHE 121. Prerequisite: None Corequisite: 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 Corequisite: CHE 112L (Offered Spring and Summer)

CHE 112L Applied Chemistry II Lab-1 hr. A laboratory course to accompany CHE 112. A continuation of CHE 111L, to include polymer and dye synthesis, recycling of wastes and other selected experiments. Not open to chemistry majors and minors as a substitute for CHE 102 or CHE 122. Prerequisite: None Co-requisite: CHE 112 (Offered Spring and Summer)

CHE 121 Chemical Principles $I$ - 3 hrs. Recommended for all majors in chemistry, physics, mathematics, and some areas of engineering. Other students admitted upon recommendation of their advisors. Topics covered are the same as in CHE 101 but in more depth and with more rigor. Lecture: atomic theory; atomic structure and the periodic table; molecular structure and chemical properties; kinetic molecular theory of gases and gas laws; solutions and colligative properties; and volumetric analysis. Prerequisite: One year of high school chemistry Co-requisite: CHE 121L (Offered Fall)

CHE 121L Chemical Principles 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: Solutions, liquid and solid state chemical and phase equilibria, thermochemistry, and thermodynamics. Prerequisites: CHE 121 and CHE 121L; students having a "B" or higher grade in CHE 101 and CHE 101L; and CHE 102 and CHE 102L may, with departmental permission, register for this course. Co-requisite: CHE 122L (Offered Spring)

CHE 122L Chemical Principles II Lab-1 hr. Precise volumetric and gravimetric analysis, and qualitative analysis are covered. Prerequisite: "B" or higher grade in CHE 101L Co-requisite: CHE 122 (Offered Spring)

CHE 201 Analytical Chemistry I-3 hrs. A detailed study of the principles of acid-base, complex ion, and slightly soluble salt equilibria in aqueous solution; volumetric and gravimetric analysis of
inorganic substances. Prerequisites: CHE 101 and CHE 101L; and CHE 102 and CHE 102L. Co-requisite: CHE 201L (Offered Fall and Summer)

CHE 201L Analytical Chemistry 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

CHE 202L Analytical Chemistry II Lab-1 hr. Laboratory to accompany CHE 202. A study of electrometric, spectrometric and chromatographic methods of analysis. Prerequisites: CHE 201 and CHE 201L Co-requisite; CHE 202 (Offered Spring and Summer)

CHE 221 Analytical Chemistry - 4 hrs. Three lectures, one three-hour laboratory per week. A detailed study of the principles of acid-base, complex ions, slightly soluble salt equilibria, electrometric, and spectrophotometric methods and an introduction to special instrumental methods in analytical chemistry. Prerequisites: CHE 101 and CHE 101L; and CHE 102 and CHE 102L; or CHE 121 and CHE 121L; and CHE 122, 122L: Co-requisite: CHE 221L (Offered Fall)

CHE 221 L Analytical Chemistry 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 includes basic techniques, and experiments in synthesis and kinetics. Modern instrumental methods will be used in some experiments. Prerequisites: CHE 102 and CHE 102L; or CHE 122 and CHE 122L: Co-requisite: CHE 301L (Offered Fall, Spring, and Summer)

CHE 302 Organic Chemistry II - 3 hrs. A continuation of the first semester. Lecture topics will include ethers, carboxylic acids, sulfonic acids, amines, aldehydes and ketones, diazo compounds, glycols, carbohydrates, and amino acids. Prerequisites: CHE 301 and CHE 301L: Corequisite: CHE 302L (Offered Fall, Spring, and Summer)

CHE 302L Organic Chemistry II Lab-1 hr. Laboratory to accompany CHE 302. The laboratory work will emphasize qualitative organic analysis by chemical reactions. Prerequisite: CHE 301 and CHE
301L: Co-requisite: CHE 302L (Offered Fall, Spring, and Summer)
CHE 306 Chemical Synthesis - 3 hrs. - Designed to give the student experience beyond the introductory level in laboratory preparative techniques, in both organic and inorganic chemistry (approximately equal emphasis on each). Procedures will be taken from the original literature and will emphasize a variety of the more important types of preparative techniques. Prerequisite: CHE 302, CHE 302L; CHE 202, CHE 202L; or CHE 222; CHE 222 L (Offered as Needed)

CHE 308 Special Topics - 3 hrs . A course designed to help the chemistry major begin to fully grasp the fundamental concepts which undergird the understanding and practice of chemistry. Topics will vary according to student need but will usually embrace such subjects as atomic theory (from the Bohr atom to atomic and molecular orbitals), reaction mechanisms, equilibria, kinetics, electrochemistry, thermodynamics, nuclear and radiochemistry, molecular spectroscopy and chromatography. Prerequisites: CHE 202 and CHE 202L; or CHE 221, CHE 221 L; CHE 302 and CHE 302L (Offered Spring)

CHE 311 Applied Organic Chemistry I-4 hrs. A course designed to show the relationship of organic chemistry to everyday life. Topics for discussion will embrace the effect of selected discoveries and innovations in organic chemistry upon the development of present-day technology. Laboratory exercises will include the production of nylon, aspirin, certain dyes, and other technologically important substances. Prerequisites: CHE 102 and CHE 102L; or CHE 112 and CHE 112L; not open to chemistry majors and minors as a substitute for 301 (Offered as needed)

CHE 312 Applied Organic Chemistry II - 4 hrs. (Three, 1-hour lectures and one, 3-hour lab). A continuation of CHE 311 with further emphasis on technological aspects of organic chemistry. Laboratory exercises will involve additional experiments as described for CHE 311. Prerequisite: CHE 311; not open to chemistry majors and minors as a substitute for CHE 302 (Offered as needed)

CHE 401 Physical Chemistry I - 3 hrs. A study of the gas laws; classical thermodynamics, thermochemistry, single and multicomponent phase equilibria, properties of solutions, and chemical equilibria. Prerequisites: CHE 202 and CHE 202L or CHE 221 and CHE 221 L; CHE 302 and CHE 302L (Offered Fall)

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

CHE 402

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; and CHE 302 and CHE 302L and CHE 401. Co-requisite: CHE 402 (Offered Spring)

CHE 403 Research I-2 hrs. Laboratory and library work that involves the solution of a suitable problem in an area of the student's interest. To culminate in an investigative paper required of all majors. Prerequisite: By consent of instructor (Offered Fall, Spring and Summer)

CHE 407L Biochemistry I Lab-1 hrs. Laboratory to accompany CHE 407. The course will include the

CHE 404

CHE 405

CHE 406

CHE 407

CHE 408

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)

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)

Advanced Organic Chemistry I-3 hrs. This course is designed to emphasize the mechanisms of the more important organic reactions and the various molecular rearrangements involved. Prerequisites: CHE 301 and CHE 301L; and CHE 302 and CHE 302L (Offered as needed)

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)

Biochemistry I-3 hrs. This course is designed to provide a study of the molecular basis of life: chemical compositions of living cells, the relation between the structure and the function of proteins in biological systems, the isolation and purification of proteins, enzymatic kinetics and reaction mechanisms, coenzymes, and carbohydrate catabolism for generation of energy. Prerequisites: CHE 201 and CHE 201L; CHE 301 and CHE 301L; CHE 302 and CHE 302L (Offered Fall) 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)

Biochemistry II - 3 hrs. 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 221 L; and CHE 301 and CHE 301L (Offered Fall)

CHE $409 \mathrm{~L} \quad$ 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 221 L; and CHE 302 and CHE 302L (Offered as needed)

# DEPARTMENT OF PHYSICS 

133 V. Chambers Hall 256-851-5305

The primary objectives of the physics department are to provide sound training in physics leading to a B.S. degree in physics and applied physics and to provide service courses which are required by other disciplines. In addition to the following undergraduate programs, the department also offers the M.S. and Ph.D. degrees in applied physics with specializations in optics/lasers and materials science, the details of which are described in the graduate catalog.

There are seven options in physics undergraduate program as listed below. The graduation requirements are: (1) 45 credit hours of general education as required by the university, (2) 20 credit hours of support courses which are: CMP 102, 109, 305; and MTH 126, 227, 238; (3) 45 Credit hours of physics: PHY 105, 106, 201, 203, $252 \mathrm{~L}, 303,321,331,341,401,421,451$ and elect two courses from PHY 322, 332, 431, 453; and (4) specified number of credit hours from option area as listed below:
a. Mechanical Option: ME 101, 101L, 231, 301, 360, 360L 312 \& 312L. (16 hrs.)
b. Electrical Option: EE 201, 201L, 202, 203, 203L, 301, and 3 credit hour of EE free elective. (17 hrs.)
c. Civil Option:
(1) Structural Concentration: EGC 101, 207, CE 306, 308 and elect one course 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 hour of free CE elective. (18 hrs.)
d. Computer Science Option: CMP 309, 311, 329, 485, 490, and 3 credit hours of free CMP elective. (18 hrs.)
e. Mathematics Option: MTH 237, 453, 6 elective credit hours of MTH above 300 level, and 6 credit hour of MTH free elective. (18 hrs.)
f. Chemistry Option: CHE 201, 201L, 202, 202L, 301, 301L 302 and 302L, 401. (19 hrs)
g. Space Science Option: PHY 440, 441, 442, 443, 444. (18 Hrs.)

## ELECTIVES

```
Course Number
PHY 322
PHY 332
PHY 431
PHY 453
PHY 460
```

| Course Title | Se |
| :--- | :---: |
| Mechanics II | 3 |
| Elec. \& Magnetism II | 3 |
| Intro to Statistical Mech. | 3 |
| Nuclear Physics | 3 |
| Selected Topics in Physics | 3 |
| only from University of Alabama in Hun |  |
|  | 3 |
|  | 3 |
| hys. | 3 |

Sem. Hrs.
3
3
3
3
3
**Extra electives for space science option only from University of Alabama in Huntsville catalog.
PHY/AST 371 Int. to Astrophysics 3
PHY/AST 471 Steller Atmospheres and 3
Interiors
PHY 531 Int. to Plasma Phys. 3

Eighteen credit hours in physics courses are required for a physics minor. The courses. PHY 105, PHY 106, PHY 201, and PHY 303 are recommended for a minor in physics.

## 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 |  | $\begin{array}{cc}\text { Survival Skills } & \text { Sem. Hrs. } \\ \text { S }\end{array}$ | Second Semester |  | Communication Skills II 3 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ORI | 101 |  | ${ }^{2}$ ENG | 102 |  |  |
| ${ }^{1}$ ENG | 101 | Communication Skills I 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 $\frac{3}{19}$ |  |  |  | 18 |

## Sophomore Year

| First Semester |  | Sem. Hrs. |  |  |  | Second Semester |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :---: | Sem. Hrs.

${ }^{3}$ PED 103 MSC 101 may be taken
(Junior and Senior Years Choose Appropriate Option A/B/C/D/EF Below.

## A. MECHANICAL OPTION <br> 127 Credit Hours

## 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 | PSY | 201 | Intro to Psychology or |  |
| ME | 101 | Intro to Mech Engr | 1 | SOC | 201 | Intro to Sociology | 3 |
| ME |  | 101L Intro to Mech Engr Lab | 1 | ME | 301 Anal \& Instru \& Phys. Sys. 3 |  |  |
| ME | 231 | Strength of Mat. | 3 | ME | 301 L | Anal \& Instru \& Phys Sys 1 |  |
| PHY |  | Elective | 3 | PHY |  | Elective | 3 |
| PHY | 321 | Mechanics I | $\underline{3}$ | PHY | 331 | Elec. \& Magnetism I | $\underline{3}$ |
|  |  |  | $\mathbf{1 7}$ |  |  |  | $\mathbf{1 6}$ |

## Senior Year

| First Semester |  | Sem. Hrs. |  | Second Semester |  |  | Sem. Hrs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PHY | 341 | Heat \& Thermodynamics | 3 | PHY | 421 | Intro to Quantum Mech. |  |
| PHY | 401 | Optics | 3 | PHY | 451 | Intro to Solid State Phys | S 3 |
| ME | 360 | Fluid Mechanics | 3 | ECO | 200 | Basic Economics | 3 |
| ME | 360L | Fluid Mechanics L | $\underline{1}$ | ME | 312L | Heat \& Mass Trans Lab | - 1 |
|  |  |  | 10 | ME | 312 | Heat \& Mass Transfer | $\underline{3}$ |
|  |  |  |  |  |  |  | 13 |
| B. ELECTRICAL OPTION <br> 127 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 |  |
| EE | 201 | Linear Circuit Analysis I | 3 | SOC | 201 | Intro to Sociology | 3 |
| EE | 201L | Linear Cir Anal I Lab | 1 | EE | 203 | Analog Cir. Des \& Anal | l 3 |
| PHY | 321 | Mechanics I | 3 | EE | 203L | Analog Cir. Des \& Anal | 1 |
| PHY |  | Elective | $\underline{3}$ | PHY | 331 | Elec. \& Magnetism I | 3 |
|  |  |  | 16 | PHY |  | Elective | 3 |
|  |  |  |  |  |  |  | 16 |

## Senior Year

| First Semester |  | Sem. Hrs. |  | Second Semester |  |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PHY | 341 |  |  | PHY | 421 | Intro to Quantum Mech | 3 |
| PHY | 401 | Optics | 3 | PHY | 451 | Intro to Solid State Phys | 3 |
| ECO | 200 | Basic Economics | 3 | EE | 301 | Signal and System | 3 |
| EE | 202 | Linear Circuit Analysis I | $\underline{3}_{12}$ | EE |  | Free Elective | $\frac{3}{12}$ |
| C. CIVIL OPTION 128 Credit Hours |  |  |  |  |  |  |  |

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 |  | Elective | 3 |
|  |  |  |  |  |  |  |  |
| PHY |  | Elective | $\underline{3}$ | PHY | 331 | Elec. \& Magnetism I | 3 |
|  |  |  | $\mathbf{1 5}$ | EGC | 207 | Strength of Materials | 3 |
|  |  |  |  | CE | 308 | Soil Mechanics | $\underline{3}$ |
|  |  |  |  |  |  |  | $\mathbf{1 8}$ |

## Senior Year

| First Semester |  |  |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| PHY | 341 | Heat \& Thermodynamics | 3 | PHY 421 | Intro to Quantum Mech | 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 | $\underline{3}$ | CE |  | Free Elective | $\underline{3}$ |
|  |  |  | $\mathbf{1 2}$ |  |  |  | $\mathbf{1 2}$ |

## 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 Drawing \& Graphics 3 | PHY |  | Elective | 3 |  |
| EGC | 305 | Fluid Mechanics | $\underline{3}$ | PHY | 331 | Elec. \& Magnetism I | 3 |
|  |  |  | $\mathbf{1 5}$ | CE | 304 | Environmental Enginr | 3 |
|  |  |  |  |  |  | $\mathbf{1 5}$ |  |

## Senior Year

| First Semester |  |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |
| :--- | :---: | :--- | :---: | :--- | :--- | :--- | :--- |
| PHY | 341 | Heat \& Thermo | 3 | PHY | 421 | Intro to Quan Mech | 3 |
| PHY | 401 | Optics | 3 | PHY | 451 | Intro to Solid State Phys | 3 |
| CE | 404 | Hydrau Enginr \& Design | 3 | CE | 305 | Hydrogeology | 3 |
| ECO | 200 | Basic Economics | $\underline{3}$ | PHY |  | Elective | 3 |
|  |  |  | $\mathbf{1 2}$ | CE |  | Free Elective | $\underline{3}$ |
|  |  |  |  |  |  | $\mathbf{1 5}$ |  |

## D. COMPUTER SCIENCE OPTION <br> 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 |
| CMP | 329 | Object Oriented Design | 3 | PHY |  | Elective | 3 |
| CMP | 309 | Computer Graphics | 3 | PHY | 331 | Elec. \& Magnetism I | 3 |
| PHY |  | Elective | $\underline{3}$ | CMP | 311 | Intro to Simulation | $\underline{3}$ |
|  |  |  | $\mathbf{1 8}$ |  |  |  | $\mathbf{1 5}$ |

## Senior Year

| First Semester |  | Sem. Hrs. | Second Semester | Sem. Hrs. |
| :--- | :--- | :--- | :--- | :--- |
| PHY 341 | Heat \& Thermodynamics 3 | PHY $421 \quad$ Intro to Quan Mechanics 3 |  |  |


| PHY | 401 | Optics | 3 | PHY | 451 | Intro to Solid State Phys | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ECO | 200 | Basic Economics | 3 | CMP | 485 | Intro to Data Comm.\& Net | 3 |
| CMP | 490 | High Perform Computing | $\underline{3}$ | CMP |  | Free Elective | $\underline{3}$ |
|  |  |  | $\mathbf{1 2}$ |  |  |  | $\mathbf{1 2}$ |

E. MATHEMATICS (MINOR) 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 |
| 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 |  | Elective | 3 |
| MTH |  | Elective | $\underline{3}$ | MTH | 237 | Intro to Linear Algebra | 3 |
|  |  |  | $\mathbf{1 5}$ | PHY | 331 | Elec \& Magnetism I | $\underline{3}$ |
|  |  |  |  |  |  |  | $\mathbf{1 5}$ |

## Senior Year

First Semester

|  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |
| :--- | :---: | :--- | :--- | :--- | :--- |
| Heat \& Thermo | 3 | PHY | 421 | Intro to Quan Mechanics | 3 |
| Optics | 3 | PHY | 451 | Intro to Solid State Phys | 3 |
| Probability and Statistics | 3 | MTH | Elective | 3 |  |
| Basic Economics | $\underline{3}$ | MTH | Elective | 3 |  |
|  | $\mathbf{1 2}$ | MTH | Elective | $\underline{3}$ |  |
|  |  |  |  |  | $\mathbf{1 5}$ |

## F. CHEMISTRY OPTION <br> 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 |  | Elective | 3 |
| CHE | 201 | Analytical Chemistry I | 3 | CHE | 202 | Analytical Chemistry II | 3 |
| CHE | $201 L$ | Analytical Chem I Lab | $\underline{1}$ | CHE | 202 L | Analytical Chem II Lab | 1 |
|  |  |  | $\mathbf{1 6}$ | PHY | 331 | Elec. \& Magnetism I | $\underline{3}$ |
|  |  |  |  |  |  |  | $\mathbf{1 6}$ |

## Senior Year

| First Semester |  |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |  |
| :--- | :--- | :--- | :---: | :--- | :--- | :--- | :--- | :---: |
| PHY | 341 | Heat \& Thermo | 3 | PHY | 421 | Intro to Quan Mechanics | 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 | $\frac{1}{10}$ | CHE | 302L | Organic Chemistry II Lab 1 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  | ECO | 200 | Basic Economics | $\frac{3}{13}$ |

## G. 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 |  |
|  |  | 3 | SOC 201 Intro to Sociology |
| PHY 321 Mechanics I | 3 | PHY 331 Electricity \& Magnetism I | 3 |
| PHY 341 Heat \& Thermodynamics | $\underline{3}$ | *PHY Intro to Quantum Mech | 3 |
| ART 101 Art Appreciation | $\mathbf{1 5}$ |  | $\underline{3}$ |
|  |  |  | $\mathbf{1 5}$ |

## 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 $\quad$ Elective | 3 | PHY 440 | Undergrad Res Opp Proj | 4 |
| CMP 204 Visual Programming | $\underline{3}$ | PHY | Elective | $3 \mathbf{N}^{-}$ |

*Physics Electives can also be taken from the following courses at the University of Alabama in Huntsville (UAH).
PHY/AST 371 Int. to Astrophysics 3

PHY/AST 471
PHY 531
Steller Atmospheres and Interiors 3
Int. to Plasma Physics
3

## COURSE DESCRIPTIONS

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

PHY 101 Physical Science $I-3$ hrs. This course covers 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. This is the laboratory course to accompany PHY 101, Survey of Physical Sciences I. This hands-on experience illustrates basic principles of measurements, kinematics \& dynamics of motion, fluids, heat \& thermodynamics, electricity and magnetism, optics, and matter. (Offered Fall, Spring and Summer)

PHY 102 Physical Science II - 3 hr . This course encompasses selected topics in the field of chemistry, geology, meteorology, and astronomy. Topics to be covered include: the periodic law, crystals, ions, solutions, chemical reactions, the atmosphere and hydrosphere, earth materials, the changing crust, earth and the sky, the solar system, the stars, and the structure and evolution of the universe. Prerequisites: PHY 101, MTH 101, (Offered Fall, Spring, and Summer).

PHY 102 L Physical Sciences Lab II - 1 hr. This is the laboratory course to accompany PHY 102 Survey of Physical Sciences. This hands-on experience illustrates basic principles of Chemistry, Geology, Astronomy, and Weather. (Offered Fall, Spring and Summer)

PHY 103 General Physics I-4 hrs. This is an Algebra based Physics course designed for majors in agriculture, family and consumer sciences, food science, and environmental science. Its emphasis is on particle motion with uniform acceleration, Newtons's Laws of motion, force, work, power and energy, mechanical energy, collision, laws of conservation of energy, circular motion, angular velocity, angular momentum, centripetal force, Hook's law, simple harmonic motion, fluid statics, pressure, law of flotation, heat, concept of temperature and heat transfer, specific heat, and gas laws. There will be at least ten experiments to be performed in the laboratory. Prerequisites: MTH 112 and MTH 113 (Offered Fall and Summer)

PHY 104 General Physics II - 4 hrs. This is the second part of an algebra based physics course and covers static electricity, Coulomb's law, potential, electrical field, Gauss's law, current electricity, Ohm's law, simple circuits, Kirchoff's law, heating effect, Joule's law, magnetic effect, Ampere's law, induction, magnetic properties of materials, electrolysis, geometrical optics, reflection at plane and spherical boundaries, thin lenses, lens maker's equation, opticla instruments, speed of light, and light as a wave. There will be at least ten experiments to be performed in the laboratory. Prerequisite: PHY 103 (Offered in the Spring)

PHY 105 Physics $I-4$ hrs. This is the first part of a calculus-based physics course designed for sciences, engineering and technical majors. The goal is to acquaint students with the language, notation, and nature of physics. The approach to the mathematical solution of physics problems is strongly emphasized throughout the course. Topics to be covered will include mechanics, fluid heat, and thermodynamics. At least ten experiments will be performed by the student. Prerequisite: MTH 125 (Offered Fall, Spring, and Summer)

PHY 106 Physics II - 4 hrs. This is the second part of a calculus - based physics course designed for sciences, engineering and technical majors. The goal is the same as for Physics 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. This is a study of space and time; conservation laws; classical relativity; Galilean and Lorentz Transformation; Michelson-Morley Experiment; relativistic mechanics; black-body radiation; photoelectric effect; x-rays; Bragg's Law and Compton effect ; atomic structure; atomic spectra; Bohr model; hydrogen atom and singly ionized helium atom; Stark effect; and Zeeman effect. Prerequisites: PHY 105, and PHY 106. (Offered Fall)

PHY 252L Modern Physics Lab - 3 hrs. This is an experimental course consisting of at least ten experiments selected from advanced topics in physics. The purpose of this course is to provide general insight into advanced experimental techniques involving refined electronic equipment and other sensitive apparatus. The experiments chosen each time the course is offered will be announced in advance. Prerequisite: PHY 201 (Offered Spring)

PHY 303 (MTH 303) Methods of Mathematical Physics - 4 hrs. This course consists 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 203 (Offered Spring)

PHY 321 Mechanics $I-3 \mathrm{hrs}$. The first part of the course will cover Galilean invariance, absolute and relative velocity, simple problems in non-realistic dynamics, energy conservation, momentum conservation, rigid body dynamics, rotational and transitional motion, Coriolis force, harmonic oscillator, force oscillations, combinations of harmonic oscillators, central force problems, and gravitation. Prerequisites: PHY 105, PHY 106 (Offered Fall)

PHY 322 Mechanics II - 3 hrs. This course is a continuation of PHY 321. It will generally start with general motion of a rigid body and will include matrices for solving rigid body dynamics, inertia tensor, theory of vibrations, Lagrange's equations, generalized co-ordinates an dignorable coordinates, applications of Lagrange's equations to simple systems, Hamilton's functions, Hamilton's variational principle, Hamiltonian and Hamilton's equations, Special Theory of relativity, Einstein's postulates, Lorentz transformation, length contraction and time dilation, and elementary relativistic kinematics. Prerequisite: PHY 321 (Offered Spring)

PHY 331 Electricity and Magnetism I-3 hrs. This is an intermediate level course and will cover electric force (Coulomb's Law), electric field (Gauss' Law), electrical potential (Poisson's and Laplace's equation and method of images), electric field in dielectrics, capacitors, electrostatic energy, and electric current (Ohm's Law and Kirchoff Law). Prerequisites: PHY 105, PHY 106 (Offered Spring)

PHY 332 Electricity and Magnetism II - 3 hrs. This is the study of magnetic field (Biot's and Savart's Law, Ampere's law), Faraday's Law of Induction, Inductance, and magnetic Energy, A. C. circuit. Maxwell's equations, electromagnetic waves, and electrodynamics. Prerequisites: PHY 331 (Offered Fall)

PHY 401 Optics -3 hrs. This is a brief review of geometrical optics; physical optics; introduction to optics and spectroscopy. Prerequisites: PHY 105, PHY 106 (Offered Fall)

PHY 421 Introduction to Quantum Mechanics - 3 hrs. This course covers Thomson's electron diffraction experiment; postulates of quantum mechanics; operator concept; expectation values; particle in a box; uncertainty principle; Schrodinger equation and eigenvalue problems: harmonic oscillator; square well potential; and elements of matrix mechanics. Prerequisites: PHY 201 and PHY 303 (Offered Fall).

PHY 442

Heat and Thermodynamics -3 hrs . This is an intermediate course which deals with reversible heat processes accompanying physical and chemical reactions involving gases, liquids, and solids.
Topics include calorimetry, thermometry, heat transfer and expansion, specific heat, laws of thermodynamics and applications, and introduction to kinetic theory. Prerequisites: PHY 105, PHY 106 (Offered Fall)

Statistical Physics - 3 hrs. This is a fundamental course to describe macroscopic systems from microscopic point of view. Topics to be covered include characteristic features of macroscopic systems, concepts of probability, postulates of the statistical theory, fundamental concepts of entropy, of absolute temperature, and of the canonical distribution. Relations between microscopic theory and macrascopic 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 BoseEinstein statistics. Prerequisites: PHY 105, PHY 106, PHY 341 (Offered as needed)

Undergraduate Research Opportunity Program. (UROP) - 4 hrs. invites undergraduates to participate with AAMU Physics faculty and staff members in a wide variety of research activities and many interdisciplinary laboratories and research centers. UROP will cultivate and support research partnerships between undergraduates and AAMU faculty members. Prerequisites: PHY 105 \& PHY 106

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

Introduction to Aeronomy. 3 hrs . The neutral atmosphere and its layers. The hydrostatic equation and the perfect gas law. Diffusive separation. Thermosphere and exosphere. Atmospheric drag and orbital decay of satellites. Atmospheric models. Formation of the ionosphere by solar extreme ultraviolet radiation. The Chapman layer. Morphology of the ionosphere. Ionospheric measurements. Ground based measurements and measurements using rockets and satellites. Far ultraviolet remote sensing techniques. Transport processes in the ionosphere. Geomagnetic control of the ionosphere. The "fountain effect" and equatorial anomaly. Solar flare effects on the ionosphere. Prerequisite: PHY 105

PHY 443 Introduction to the Solar System . 4 hrs. Historical perspective. Bode's law. General description of the members of the solar system: The sun, the planets, satellites, asteroids and comets. Detailed description of the physical properties of the planets and planetary orbits. Terrestrial and Jovian planets. Planetary satellites. Origin of the moon. Asteroids and comets. The sun and its stellar classification. Features of the Sun's surface. The sunspot cycle. The solar wind. Filament eruptions and coronal mass ejections. Prerequisite: PHY 105
PHY 444 Introduction to Orbital Mechanics . 4 hrs. Historical perspective. Kepler's laws of planetary motion. Minimum launch velocity to orbit, escape velocity and time to reach the moon. Low Earth orbit; Geo-synchronous orbit; Geo-stationary orbit; and Sun-synchronous orbit. The central force problem. The two-body problem and reduced mass. Orbital maneuvers: In-plane and out-of-plane orbital changes. Perturbations of orbits. The orbital elements. Orbit determination. The three-body problem and Lagrange libration points. Orbital decay due to atmospheric drag. Prerequisite: PHY 321 or PHY 105

PHY 451 Introduction to Solid State Physics - 3 hrs. This course includes crystal structure; lattice dynamics; electron states in periodic potential; semiconductor; magnetism; magnetic resonance; superconductivity; and point defects in solids. Prerequisites: PHY 421 (Offered as needed)

PHY 453 Introduction to Nuclear Physics - 3 hrs . This course includes radioactivity; half life, passage of radiation through matter; isotopes; chart of nuclides; nucleus; mass charge; radii; alpha emission; beta decay theory; Fermi's theory; internal conversion; Electron capture; Deuteron problem; neutron; slowing down; chain reacting pile; and elementary particles. Prerequisites: PHY 201 and PHY 421 (Offered as needed)

PHY 460 Selected Topics in Physics -3 hrs. This course is designed to provide students an opportunity to study applied courses that are not offered in other existing physics courses. When it is offered, the particular topic to be studied will be reflected in the course title. Prerequisites: PHY 105, 106 \& 201 (Offered as needed)

PHY 490 The Physics of Sports . 3 hrs. The subject area covers many popular sports events in the Olympics including Track and Field events and popular American ball games. Special topics: Kinematics of sports projectiles; Kinematics of the 100 m and 200 m dash; Physics of the long jump; high jump; pole vault; triple jump; shot put; discuss and javelin. Physics of Basketball shooting, dribbling, passing and rebounding. Baseball pitching and hitting; the fly ball trajectory. Throwing the football. Athletic performance trends in the Olympics. Probability and statistics in sports. Other topics may be covered depending on demand. Prerequisites: PHY 321 Mechanics I; or PHY 105 and a Mechanics course such as ME 206 Dynamics; or approval of the Instructor for special cases.

# SCHOOL OF BUSINESS 

Dr. Barbara A. P. Jones, Dean<br>309 New School of Business Building<br>256-851-5092

## MISSION STATEMENT

The mission of the Alabama A\&M University School of Business is to provide a high quality management education that promotes the development of students' potentials as managers, entrepreneurs, leaders, as well as productive employees and socially responsible individuals. Consistent with the University's history and contemporary mission, the School concentrates on instruction while seeking to combine the classic goal of intellectual development with the land-grant tradition of service. Applied and interactive educational experiences are emphasized in both the graduate and undergraduate programs. While the School of Business and the University are committed to graduate education, the School emphasizes undergraduate education as its first responsibility. In addition to the coverage of basic business principles, all programs develop students' computer, communications, interpersonal relations, and leadership skills, thereby, preparing graduates for success in local, state, national, and global business environments. The AAMU School of Business builds on its historic mission of providing education for African-Americans to an expanded mission of educating a student body that is diverse in terms of ethnicity, national origin, and socio-economic background.

## OBJECTIVES

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


## PROGRAMS

The School of Business has three departments-Accounting; Economics, Finance and Office Systems Management; and Management and Marketing. They offer the bachelor of science degree in accounting, economics, finance, management, and marketing. They also offer the bachelor of science degree in business administration with concentrations in international business, logistics, management information systems and office systems management. The School offers minors in accounting, business administration, economics, management and marketing.

Information about our two graduate programs in business, the master of business administration (MBA) degree and the master of science degree with a major in economics, is in the AAMU Graduate Bulletin.

## STUDENT ORGANIZATIONS

Discipline specific student organizations are available for students in each department in the School of Business. In addition, business students from all programs can be considered for membership in Phi Beta Lambda Business Fraternity and Delta Mu Delta Honor Society in Business. The discipline specific organizations are discussed in the department sections of the Bulletin.


Phi Beta Lambda, Inc. is an organization with chapters on more than 600 college campuses across the United States. Its mission is to bring business and education together in a positive working relationship through innovative leadership and career development programs. Business students who have completed 30 semester credit hours or more with a 2.5 grade point average or higher are encouraged to seek membership in this organization.

Delta Mu Delta is a national honor society in business open to all business majors at both the graduate and undergraduate levels. Undergraduate members must

- Be candidates for the baccalaureate degree,
- Have completed at least half of the work required for the degree,
- Have a cumulative grade point of 3.2 or above,
- Be in the top 20 percent of their class, and
- Be of good character.


## REQUIREMENTS FOR GRADUATION

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 |  | Social Science Elective |
| ENG | Literature sequence II |  | Science Elective with Lab |
| ENG 205 | General Speech | Science Elective with Lab |  |
|  | Fine Arts Elective | ORI 101 | Survival Skills |
| MTH 112 | Pre-Calculus Algebra* |  | Physical Education (2) or |
| HIS | History Elective |  | Health or Military Science |

*Must earn grade of C or better.

- Complete the School of Business Core Curriculum (42 semester credit hours)

| ACC 203 | Introduction to Accounting I | MGT 315 | Principles of Management |
| :--- | :--- | :--- | :--- |
| ACC 204 | Introduction to Accounting II | MGT 413 | Production Operation Management |
| ECO 271 | Business Statistics I | MGT 442 | Strategic Management/Policy |
| FIN 315 | Principles of Finance | MKT 315 | Principles of Marketing |
| MGT 207 | Legal Environment and Ethics | OSM 310 | Business Communications |
| MGT 213 | Computer Applications in Business | OSM 315 | Business and Professional Writing |
| MGT 308 | Management Information Systems |  | International business course |

- Complete all major requirements
(Listed for each major program in the department sections of the Bulletin)
- Complete the minimum number of semester credit hours required for graduation

| Accounting |  | Economics | 122 |
| :--- | :--- | :--- | :--- |
| Financial Track | 125 | Finance | 122 |
| Managerial Track | 124 | Management | 122 |
| Business Administration |  | Marketing | 122 |

International Business 122
Logistics 125
Management Information Systems 122
Office System Management 122

- Maintain a cumulative grade point average of 2.0 or above for all courses attempted at Alabama A\&M University
- Maintain a cumulative grade point average of 2.0 or above for all business courses attempted at Alabama A\&M University
- Maintain a cumulative grade point average of 2.0 or above for all courses in major attempted at Alabama A\&M University

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.

## 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 Business must earn at least 50 percent of the business credit hours required for the degree at Alabama A\&M University.

## DEPARTMENT OF ACCOUNTING

## 201 New School of Business

256-851-4775
The Department of Accounting offers a four-year accounting program leading to the bachelor of science (B. S.) degree. The department also offers graduate level courses in accounting for students pursuing a master of business administration (MBA) degree. An accounting concentration is available with the MBA program and a minor in accounting with the MS in economics program.

The role of the accountant has been transformed in recent years. Technological advances have created an environment of rapid growth, and in response, accounting has evolved in complexity. Contemporary accountants are more than financial historians who record and communicate financial data; they are a critical part of management. 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. To meet the increasing demand for accountants, the curriculum provides a thorough education in the accounting discipline. The program develops and enhances students' critical thinking, judgment, and communications skills, while providing a sound technical foundation. This specialized accounting knowledge, along with the 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 growth and development within the accounting profession
- For advanced studies in accounting and other business disciplines
- For advancement to administrative and leadership positions

Students who wish to sit for the Certified Public Accountant (CPA) examination in Alabama and 44 other jurisdictions must meet a 150 -hour requirement. If you have questions regarding this requirement or need additional information about the CPA examination, please call the Alabama State Board of Accountancy at (800) 435-9743 or visit the American Institute of Certified Public Accountants (AICPA) web page. At AAMU, the 150hour requirement can be accomplished through taking additional coursework at the undergraduate level or by pursuing a master's degree through our MBA program with an accounting concentration.

## STUDENT ORGANIZATION

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.

## REQUIREMENTS FOR GRADUATION

- University General Education Curriculum (44 semester credit hours): ENG 101, ENG 102, ENG 205, ECO 231, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs, physical education (2) or health or military science.
- School of Business Core Requirements (45 semester credit hours): ACC 203, ACC 204, ACC 461, ECO 271, FIN 313, MGT 207, MGT 213, MGT 308, MGT 315, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315.
- Major Requirements for Accounting, Financial Track (39 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, ACC 351, ACC 421, ACC 441, ACC 450, ACC 460, ACC 461, MGT 318, six SCH of free electives all of which must be outside of business.
- Major Requirements for Accounting, Managerial Track (38 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, ACC 351, ACC 403, ACC 441, ACC 460, ACC 461, ACC 466, eight SCH of free electives of which six must be outside of business.
- Requirements for Minor in Accounting, Financial Track, Business Majors (18 semester credit hours): ACC 301, ACC 302, ACC 306, ACC 351, ACC 441, one of the following: ACC 421, ACC 442, ACC 450, ACC 451, ACC 461, ACC 472.
- Requirements for Minor in Accounting, Financial Track, Non-Business Majors (18 semester credit hours): ACC 301, ACC 302, ACC 306, ACC 351, ACC 441, and a non-accounting business elective approved by the accounting department chair. Students pursuing the accounting minor will have to complete the prerequisites for ACC 301, viz., ACC 203, ACC 204.
- Requirements for Minor in Accounting, Managerial Track, Business Majors (18 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, ACC 466, and any one of the following courses: ACC 403 or ACC 461 or ACC 472.
- Requirements for Minor in Accounting, Managerial Track, Non-Business Majors (18 semester credit hours): ACC 301, ACC 302, ACC 303, ACC 306, ACC 466, and a non-accounting business elective approved by the accounting department chair. Students pursuing the accounting minor will have to complete the prerequisites for ACC 301, viz., ACC 203, ACC 204.


## MAJOR IN ACCOUNTING - FINANCIAL TRACK <br> 125 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 120 | Calculus and its Applications ${ }^{2}$ | 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 | MGT 213 | Computer Appl. in Business | 3 |
| PED/HED | Physical Education ${ }^{3}$ | 1 |  |  | 16 |
|  |  | 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. |  |  |  |  |  |

First Semester

| ENG | Literature Sequence I | 3 |
| :--- | :--- | :--- |
| ACC 203 | Introduction to Accounting I | 3 |
| ENG 205 | General Speech | 3 |
|  | Social Science Elective | 3 |
| ECO 231 | Principles of Macroeconomics | 3 |
| PED/HED | Physical Education |  |
|  |  | $\underline{1}$ |
|  |  | 16 |

Second Semester
Sem. Hrs.

| ENG | Literature Sequence II | 3 |
| :--- | :--- | :--- |
| ACC 204 | Introduction to Accounting II | 3 |
| MGT 207 | Legal Environment and Ethics | 3 |
| ECO 217 | Business Statistics I | 3 |
| ECO 232 | Principles of Microeconomics | $\underline{3}$ |

## Junior Year

First Semester
ACC 301 Intermediate Accounting I
ACC 303 Cost Accounting
ACC 351 Federl T
MGT 315 Principles of Management 3
FIN $315 \quad$ Principles of Finance $\quad \underline{3}$

Sem. Hrs.
3
3
3
3

Second Semester
Sem. Hrs.
MGT 318 Business Law 3

ACC 302 Intermediate Accounting II 3
MKT 315 Principles of Marketing 3
MGT 413 Production/Operations Mgmt. 3
OSM 310 Business Communication $\underline{3}$
18

## Senior Year

First Semester
Sem. Hrs.

|  | Non Business Free Elective | 3 |
| :--- | :--- | :--- |
| ACC 306 | Intermediate Accounting III | 3 |
| OSM 315 | Professional Writing | 3 |
| ACC 441 | Auditing I | 3 |
|  |  |  |
| ACC 460 | Seminar in Accounting Theory | $\underline{3}$ |

15
Second Semester
Sem. Hrs.
ACC 421 Advanced Accounting 3
MGT 442 Strategic Management Policy 3
ACC 450 Governmental Accounting 3
ACC 461 Sem. in International 3
Accounting
ACC 472 Accounting Information $\underline{3}$
Systems
${ }^{3}$ Health or military science may be taken instead of physical education.

## MAJOR IN ACCOUNTING - MANAGERIAL TRACK 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 $^{1}$ | 3 | MTH 120 | Calculus and its Applications $^{2}$ | 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 | MGT 213 | Computer Appl. In Business | $\underline{3}$ |
| PED/HED | Physical Education $^{3}$ | $\underline{1}$ |  |  | 16 |

${ }^{1}$ 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.
${ }^{3}$ Health or military science may be taken instead of physical education.

## Sophomore Year

First Semester
Sem. Hrs.
Second Semester
Sem. 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 217 | Business Statistics I | 3 |
| ECO 231 | Principles of Macroeconomics | 3 | ECO 232 | Principles of Microeconomics | $\underline{3}$ |
| PED/HED | Physical Education |  |  | 15 |  |

## Junior Year

First Semester

ACC 301 Intermediate Accounting I
ACC 303
ACC 351 Federal Tax Accounting I
MGT 315 Principles of Management
FIN 315 Principles of Finance

Sem. Hrs.

3
3
3
3
$\underline{3}$
15

Second Semester
Sem. Hrs.

ACC 302 Intermediate Accounting II 3
MKT 315 Principles of Marketing 3
ACC 403 Advanced Cost Accounting 3
MGT 413 Production/Operations Mgmt. 3
OSM 310 Business Communication 3
Free Elective
17

## Senior Year

First Semester

ACC 306 Intermediate Accounting III

Sem. Hrs.

3

3

Second Semester
Sem. Hrs.

|  | Non-Business Free Elective | 3 |
| :--- | :--- | :--- |
| MGT 442 | Strat. Management and Policy | 3 |


| OSM 315 | Professional Writing | 3 | ACC 461 | Sem. in International | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  | Accounting |  |  |
| ACC 441 | Auditing I | 3 | ACC 466 | Controllership | 3 |
| ACC 460 | Seminar in Accounting Theory | $\underline{3}$ | ACC 472 | Accounting | Information |
|  |  | 15 | Systems | 15 |  |

${ }^{3}$ Health or military science may be taken instead of physical education.

## COURSE DESCRIPTIONS

ACC 203 Introduction to Accounting I-3 hrs. Basic concepts with a focus on how accounting events affect financial statements. Emphasizes both preparation and use of external financial reports. Topics include accrual versus cash, receivables, payables, inventory, long-term operational assets, longterm liabilities, stockholder's equity, recording procedures, and financial statement analysis. Prerequisite: None (Offered Fall, Spring, and Summer)

ACC 204 Introduction to Accounting II -3 hrs. Accounting II is a continuation of ACC 203. Basic concepts associated with managerial accounting. Emphasizes the use of relevant information for planning, control and decision-making. Topics include cost behavior, cost allocation, product costing, budgeting, responsibility accounting, and capital budgeting. Prerequisite: ACC 203 (Offered Fall, Spring, and Summer)

ACC 219 Managerial Accounting -3 hrs. A study of the uses of accounting information for planning and control in an enterprise area of study, including budgeting, financial analysis, basic cost accounting reports, and capital budgeting. Not for accounting majors. Prerequisite: ACC 204 (Offered Fall, Spring and Summer)

ACC 301 Intermediate Accounting I-3 hrs. A study of financial reporting theory and process. Each major asset category is analyzed in balance sheet order. Prerequisite: ACC 204 (Offered Fall, Spring and Summer)

ACC 302 Intermediate Accounting II-3 hrs. A continuation of accounting financial theory through more balance sheet analysis, and study of special-purpose statements. Prerequisite: ACC 301 (Offered Fall, Spring, and Summer)

ACC 303 Cost Accounting---3 hrs. Cost accounting is an analysis of the principles of cost accounting for various manufacturing and /or service businesses, especially the use of cost data under job order, process, and standard -cost systems. Prerequisite: ACC 204 ( Offered Fall and Spring)

ACC 306 Intermediate Accounting 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 which is accomplished under the supervision of a member of the accounting faculty. Such 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

ACC 421

ACC 431

ACC 441

ACC 442

ACC 450

ACC 451

ACC $460 \quad$ Seminar in Accounting Theory---3 hrs. An analysis of the body of generally accepted accounting principles as interpreted by decisions of the Accounting Principles 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 Fall or Spring)

ACC 461 Seminar in International Aspects of Accounting----3 hrs. This course will emphasize an understanding of a global economy, multinational business activity on accounting. Emphasis will be placed on comparative accounting and reporting activities, as well as regulatory requirements of various countries. Recommended for accounting majors. Prerequisite: Senior standing (Offered Fall or Spring)

ACC 466
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 Fall or Spring)

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 306 (Offered Fall)

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 or Spring)

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)

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)

Governmental Accounting-3 hrs. A study of the systems of fund accounting used by government units, charitable organizations, and educational institutions. Special emphasis will be placed on the accountability/stewardship function accomplished by the accounting system of a non-profit organization. Prerequisite: ACC 302 (Offered Spring)

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)

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 306 (Offered Fall or Spring)

Accounting Information Systems- 3 hrs. This course covers the subject matter of information systems such as feasibility study, systems design and implementation. Modern accounting information systems are computer-based; hence, more emphasis is placed on computer based systems and their control. Prerequisite: ACC 302 (Offered Spring)

## DEPARTMENT OF ECONOMICS, FINANCE AND OFFICE SYSTEMS MANAGEMENT <br> 215 School of Business <br> 256-851-5084

The department offers two majors, a bachelor's of science degree in economics and a bachelor's of science degree in finance; a concentration in office systems management for the bachelor of science degree in business administration; and minors in economics and in finance. While majors, concentration and minors are designed for students who aim toward careers in the respective or related fields, knowledge of economics, finance and office systems management is essential to every educated person. Therefore, the Department offers a variety of courses that are designed to meet the needs of students majoring in business education and other fields inside and outside of the School of Business. In particular, ECO 200, Basic Economics, a one semester introductory course covers general economic concepts and theory. It is an extraction from the two-semester sequence ECO 231 and ECO 232, that emphasizes macro- and micro-economics. ECO 300, Engineering Economics, is a required course for some programs in the School of Engineering and Technology. It covers economic and mathematical concepts designed for economic evaluation of projects.

The objective of the Department is to provide sound knowledge of economics, finance and office systems management taking into consideration the changing nature of the economy and business operations in the U. S. and other countries. Understanding of the business and economic environment requires a foundation in the analytical techniques used in the field. The daily operation of the business offices requires knowledge of office systems management. The required techniques as well as skills to run daily operations of a business are taught in courses designed for majors and minors as well as in service courses.

The analytical and general knowledge acquired through programs in economics, finance and office systems management prepares students for careers in public and private organizations. Studies in economics and finance are particularly relevant for policy analysis and policy making. Students who graduate from these programs are prepared to pursue graduate studies in economics, business, law, public policy, public administration, urban planning and other fields. The concentration in office systems management with a bachelor of science in business administration provides the practical knowledge of running daily activities of a business.

## STUDENT ORGANIZATION

Economics and Finance Club promotes and encourages students' achievement through academic and extra-curricular activities. Particularly, through visiting different 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.

## REQUIREMENTS FOR GRADUATION

- University General Education Curriculum (44 semester credit hours): ORI 101, ENG 101, ENG 102, ENG 205, ECO 231, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs, physical education (2) or health or military science.
- School of Business Core Requirements (45 semester credit hours): ACC 203, ACC 204, ECO 271, ECO 446, FIN 315, MGT 207, MGT 213, MGT 308, MGT 315, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315. International business course is listed with major requirements.
- Major Requirements for Economics (36 semester credit hours): ECO 272, ECO 401, ECO 402, ECO 411, ECO 413, ECO 414, ECO 444, ECO 446, six SCH of upper division economics courses, six SCH of free electives of which three must be outside of business.
- Major Requirements for Finance ( 36 semester credit hours): ECO 272, ECO 446, FIN 316, FIN 317, FIN 432, FIN 449, FIN 487, FIN 489, six SCH of upper division finance courses, six SCH of free electives of which three must be outside of business.
- Major Requirements for Business Administration, Office Systems Management Concentration (36 semester credit hours): OSM 202, OSM 204, OSM 215, OSM 302, OSM 309, OSM 312, OSM 406, MKT 464, twelve SCH of free electives including at least three SCH outside School of Business.
- Requirements for Minor in Economics, Business Majors (18 semester credit ours): ECO 272, ECO 401 or ECO 402, and 12 semester credit hours of approved economics electives, excluding ECO 200, ECO 231, and ECO 232.
- Requirements for Minor in Economics, Non-Business Majors (18 semester credit hours): ECO 231, ECO 232 (ECO 200 may be taken instead of ECO 231 and ECO 232 sequence), ECO 271, ECO 401 or ECO 402 and 6 to 9 SCH of approved economics or business electives, to complete 18 semester credit hours.
- Requirements for Minor in Finance, Business Majors (18 semester credit hours): FIN 316 and 15 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.


## ECONOMICS <br> 122 Credit Hours

## Freshman Year

| First semester |  |  | Sem. Hrs. | Second semester S |  |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ORI | 101 | Survival Skills | 1 | ENG | 102 | Composition II ${ }^{1}$ | 3 |
| ENG | 101 | Composition I ${ }^{1}$ | 3 | MTH | 120 | Calculus and its Applications ${ }^{2}$ | $2 \quad 3$ |
| MTH | 112 | Pre-Calculus Algebra ${ }^{1,2}$ | 3 |  |  | Science Elective with lab | 4 |
|  |  | History Elective | 3 |  |  | Fine Arts Elective | 3 |
|  |  | Science Elective with lab | 4 |  |  | Social Science Elective | 3 |
| PED |  | Physical Education ${ }^{3}$ | 1 |  |  |  | 16 |
|  |  |  | 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.
${ }^{3}$ Health or military science may be taken instead of physical education.

## Sophomore Year

First semester
Sem. Hrs. Second semester
Sem. 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 |
| MGT | 213 | Computer Appls. in Business | 3 | ECO | 271 | Business Statistics I | $\frac{3}{15}$ |
| PED |  | Physical Education $^{3}$ | $\underline{1}$ |  |  |  |  |


| Junior Year |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| First semester |  | Sem. | Hrs. | Second semester |  | Sem. Hrs. |  |
| ECO | 272 | Business Statistics II | 3 | MGT | 308 | Management Info. Systems | 3 |
| FIN | 315 | Principles of Finance | 3 | OSM | 315 | Professional Writing | 3 |
| MGT | 315 | Principles of Management | 3 | ECO | 402 | Intermediate Microeconomics | 3 |
| OSM | 310 | Business Communications | 3 | ECO | 413 | Money and Banking | 3 |
| ECO | 401 | Intermediate Macroeconomics | $\underline{3}$ | MKT | 315 | Principles of Marketing | $\underline{3}$ |
|  |  |  | 15 |  |  |  | 15 |


| Senior Year |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| First semester |  | Sem. Hrs. |  | Second semester |  | ( Sem. 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 |
|  |  | Economics Elective | 3 |  |  | Economics Elective | 3 |
|  |  | Free Elective ${ }^{4}$ | 3 |  |  | Free Elective ${ }^{4}$ | 3 |
|  |  |  | 15 |  |  |  | 15 |

${ }^{3}$ Health or military science may be taken instead of physical education.
${ }^{4}$ At least 3 hours of electives outside of School of Business.

## COURSE DESCRIPTIONS

ECO 200
Basic Economics - 3 hrs. A study of the fundamentals of macro- and microeconomics in a market economy; economic systems; money and banking, economic conditions and government policies. Prerequisite: none (Offered Fall, Spring, and Summer)

SCHOOL OF BUSINESS
ECO 231 Principles of Macroeconomics - 3 hrs . A study of the measurement and determination of GNP and related measures; money and banking; inflation; unemployment; Keynesian, monetarist and other macroeconomics theories; the economic role of the government; the U.S. economy; monetary and fiscal policies; economic growth; and international issues. Prerequisite: MTH 112 (Offered Fall, Spring, and Summer)

ECO 232 Principles of Microeconomics - 3 hrs . Elements of supply and demand; elasticity; consumer behavior; theory of the firm; production, cost analysis and profit optimization; product markets and market structures; resource markets and resource allocation; and taxation and government expenditures. Prerequisite: MTH 112 (Offered Fall, Spring, and Summer)

ECO 271 Business Statistics $I-3$ hrs. An introduction to descriptive and analytical statistical techniques; collection, organization and graphical presentation of data; probability theory and probability distributions; elementary estimation and hypothesis testing; simple linear regression and correlation; time series; and index numbers. Prerequisite: MTH 112. (Offered Fall, Spring, and Summer)

ECO 272 Business Statistics II - 3 hrs. Review of probability; normal and t distributions; statistical inference about means and proportions; inferences about population variances; test of goodness of fit and independence; analysis of variance and experimental design; time series and index numbers; regression and correlation analysis. Prerequisite: ECO 271 or equivalent. (Offered Fall, Spring, and Summer)

ECO 300 Engineering Economics - 3 hrs. Economic evaluation of private and public projects; time value of money; compound interest; present and future values; uniform series of costs and benefits; effects of depreciation, inflation and taxes on the valuation of projects; risk and uncertainty; investment criteria; internal rate of return, net present value and cost-benefit analysis. Prerequisite: One MATH course or sophomore/junior standing in engineering or technology. (Offered Fall and Summer)

ECO 301/FIN 301 Consumer Finance and Economics - 3 hrs. Managing personal finances in a market economy, including cash and credit management, income and asset protection, and investment planning. Major topics of consumer economics such as purchasing decisions, consumer income and welfare, and the mass consumption effect on the environment. Prerequisite: None (Offered as needed)

ECO 326 Labor Management Relation - 3 hrs. Study of the labor union movement, labor management relations, collective bargaining, and labor legislation. Prerequisite: ECO 200, ECO 231 or ECO 232 (Offered Fall)

ECO 401 Intermediate Macroeconomics - 3 hrs. Aggregate economic analyses; measurement and determination of national income, including the price level, unemployment and economic growth; international aspects of macroeconomics; fiscal and monetary policies; classical, Keynesian and post-Keynesian theories. Prerequisite: ECO 231 (Offered Fall)

ECO 402 Intermediate Microeconomics - 3 hrs. The theories of consumer behavior; production and cost theories; behavior of the firm in the product and resource markets under different types market structures; supply and demand; elasticity; resource allocation; analysis of the impact of economic policies on firms and industries, including taxation, quotas and price fixing; welfare 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 macroeconomy; monetary policy. Prerequisite ECO 231 (Offered Fall, Spring, and Summer)

ECO 414 Managerial Economics - 3 hrs. Application of economic concepts to business decision making; analysis and forecasting of demand; cost analysis; pricing behavior; and optimizing techniques. Prerequisite: ECO 232. (Offered Fall)

ECO 415 Environmental Economics - 3 hrs. Economic analysis of environmental issues, problem, and solution; analysis of benefits and costs of improving the environment; the global dimensions of the environmental problems resulting from resource extraction and utilization and industrial production. Prerequisite: ECO 200 or ECO 232 (Offered Fall)

ECO444/FIN $444 \quad$ Public Sector Economics - 3 hrs. Effects of spending public funds, collecting taxes and other revenues; government borrowing and debt payment; government expenditures, revenues, and public credit. Prerequisite: ECO 200 or ECO 231 (Offered Spring)

ECO 445 History of Economic Thought - 3 hrs. A study of the historical development of economic thought from ancient times to the present. Prerequisite: ECO 200, ECO 231 or ECO 232 (Offered as needed, consult your advisor)

ECO 446 International Trade and Policy - 3 hrs . Principles underlying international trade; free trade and the effects of barriers to trade; the effects of mobility of factors of production; macroeconomics of international exchange of goods, services, and financial assets. Prerequisite: ECO 231 (Offered Fall)

## FINANCE 122 Credit Hours

First semester
Sem. Hrs. Second semester
Sem. Hrs.

| ORI | 101 | Survival Skills | 1 | ENG | 102 | Composition II ${ }^{1}$ | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ENG | 101 | Composition ${ }^{1}$ | 3 | MTH | 120 | Calculus and its Applications ${ }^{2}$ | 3 |
| MTH | 112 | Pre-Calculus Algebra ${ }^{1,2}$ | 3 |  |  | Science Elective with lab | 4 |
|  |  | History Elective | 3 |  |  | Fine Arts Elective | 3 |
|  |  | Science Elective with lab | 4 |  |  | Social Science Elective | 3 |
| PED |  | Physical Education ${ }^{3}$ | 1 |  |  |  | 16 |

## Sophomore Year

| First semester |  | Sem. |  | Second semeste |  | Sem. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Hrs. |  |  |  | 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 |
| MGT | 213 | Computer Appls. in Business | 3 | ECO | 271 | Business Statistics I | 3 |
| PED |  | Physical Education ${ }^{3}$ | 1 |  |  |  | 15 |
|  |  |  | 16 |  |  |  |  |

Junior Year

| First semester |  | Sem. |  | Second semester |  | Sem. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Hrs. |  |  |  | Hrs. |  |
| ECO | 272 | Business Statistics II | 3 | MGT | 308 | Mgt. Information 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 Communications | 3 | FIN | 317 | Comp. Applications in Finance | 3 |
| MKT | 315 | Principles of Marketing | 3 | FIN | 432 | Investment | 3 |
|  |  |  | 15 |  |  |  | 15 |

## Senior Year

| First semester |  | Sem. Hrs. |  | Second semester |  | $r$ Sem. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Hrs. |  |
| FIN | 449 | Money and Capital Market | 3 | MGT | 442 | Strategic Mgt and Policy | 3 |
| ECO | 446 | International Trade \& Policy | 3 | FIN | 487 | International Financial Mgt. | 3 |
| MGT | 413 | Production/Operations Mgt. | 3 | FIN | 489 | Special Topics in Finance | 3 |
|  |  | Finance Elective | 3 |  |  | Finance Elective | 3 |
|  |  | Free Elective ${ }^{4}$ | $\underline{3}$ |  |  | Free Elective ${ }^{4}$ | $\underline{3}$ |
|  |  |  | 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.
${ }^{3}$ Health or military science may be taken instead of physical education.
${ }^{4}$ At least 3 hours of electives outside of School of Business.

## COURSE DESCRIPTIONS

FIN 301/ECO 301 Consumer Finance and Economics - 3 hrs. Managing personal finances in a market economy, including cash and credit management, income and asset protection, and investment planning. Major topics in consumer economics include purchasing decisions, consumer income and welfare, and the mass consumption effect on the environment. Prerequisite: None

FIN $315 \quad$ 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 modernday 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 Spring)

FIN 444/ECO 444 Public Sector Finance- 3 hrs. Effects of spending public funds, collecting taxes and other revenues; government borrowing and debt payment; government expenditures, revenues, and public credit. Prerequisite: ECO 200 or ECO 231. (Offered Spring)

FIN 449 Money and Capital Market - 3 hrs. Financing process and the role of the financial markets, aggregate investment and savings, money and capital markets, and the flow of funds; determination of asset prices and interrelationships among them; role of financial intermediaries and the impact of their portfolio policy. Prerequisite: FIN 315. (Offered Fall)

FIN 479 Derivative Markets- 3 hrs. Functions, techniques, and the valuation of derivative securities, such as futures, forward and options markets. Primary emphasis is on pricing and methods of trading. Prerequisite: FIN 316. (Offered Spring)

FIN 484 Bank Management - 3 hrs. The financial management of banks. Emphasis is placed on deposits, loans, bond portfolios, credit analysis, analysis and interpretation of federal reserve regulations and publications. Prerequisite: FIN 316. (Offered Fall and Summer, if needed)

FIN 487 International Financial Management - 3 hrs. Optimum decision making in a global business environment. The course is multidimensional, requiring considerations of social, economic and political factors in addition to traditional (intrafirm) managerial concerns. Prerequisite: FIN 316 (Offered Fall)

FIN 489 Special Topics in Finance - 3 hrs. Current issues and problem relating to corporate finance along with computer-assisted techniques and methods used to select, administer and change the financial decisions. Prerequisite: FIN 316 (Offered Spring)

The program in office systems management (OSM) has two basic objectives:

- To prepare competent office personnel for careers in today's high technology office as administrative assistants, office managers, and other related occupations in business, industry, and government, and
- To prepare business education teachers at the secondary and post-secondary levels through courses taught in the major area that support the teaching fields. The curriculum in business and office education are listed under the Department of Secondary Education, School of Education.

Graduates who earn the bachelor of science degree in business administration with a concentration in office systems management are prepared to assume major administrative and supervisory duties in the electronic office and function successfully as part of an effective office team. Because they have a genera business background they qualify for a large array of entry level positions in the private, public and not-for-profit sectors.

## STUDENT ORGANIZATION

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 interests; to provide opportunities for interaction among students, educators, 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.

## BUSINESS ADMINISTRATION <br> Office Systems Management Concentration <br> 122 Credit Hours

First Semester

| ORI 101 | Survival Skills |
| :--- | :--- |
| ENG 101 | Composition I $^{1}$ |
| MTH 112 | Pre-Calculus Algebra ${ }^{1,2}$ |
|  | Fine Arts Elective |
|  | Science Elective with lab <br> PED <br>  <br> Physical Education |

## Freshman Year

Sem. Hrs. Second Semester

Sem. Hrs.13334$\frac{1}{15}$
ENG 102 Composition II $^{1} \quad 3$

MTH 120 Calculus and its Application ${ }^{2} \quad 3$
Science Elective with Lab 4
ENG Literature Sequence II 3
HIS History Elective $\underline{3}$

## Sophomore Year

First Semester
Sem. Hrs.
Second Semester
Sem. 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 | MGT 213 | Computer Appls. in Business | $\frac{3}{3}$ |
| PED | Physical Education |  |  | 15 |  |
|  |  | 16 |  |  |  |
| ${ }^{1}$ 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. |  |  |  |  |  |
| ${ }^{3}$ Health or military science may be taken instead of physical education. |  |  |  |  |  |


${ }^{4}$ At least 3 hours of electives outside of School of Business.

## COURSE DESCRIPTIONS

BED 305 Office Practicum - 3 hrs. This course is designed to give the prospective business education teacher coordinated and supervised office work experience. (Offered Spring).
Prerequisites: OSM 202, OSM 204, OSM 302

BED 425 Materials and Methods of Teaching Business Subjects - 3 hrs. This course includes a study of the basic methods, strategies, instructional materials, and media that relate to the effective teaching of business education subjects. Prerequisites: OSM 202, OSM 204, ACC 204, OSM 302, EDU 102, EDU 307, and senior classification (Offered Fall). and teaching in cooperating public secondary schools. Also, included are conferences with cooperating teachers, and one class hour per week at the University for twelve weeks.
Prerequisites: BED 425, and all courses prescribed for BS in business education up to the second semester of the senior year (Offered Fall and Spring).

OSM 202 Word Processing - 3 hrs. This course is an introduction to word processing and information concepts. It includes the fundamentals of word processing and microcomputers and the study of word processing applications in business (Offered Fall).

OSM 204 Office Procedures - 3 hrs. This course will focus on the changing nature of work in the $21^{\text {st }}$ Century. It will emphasize 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 as needed).

OSM 302 Desktop Publishing and Information Technology - 3 hrs. This course is designed to provide hands-on experience in using advanced formatting features to produce brochures, newsletters, and reports. The latest information technology will be covered including scanners, printers, and LCD
panels and/or projectors, as well as configuring the desktop, managing files, and using the Internet. (Offered Spring).

OSM 309 Records Management - 3 hrs. This course is designed to provide study in the functions and analysis of records management in organizations. Emphasis is placed on filing procedures and systems design. Manual filing and basic computer database management applications are included. (Offered Spring-even numbered years).

OSM 310 Business Communications -3 hrs. This course is designed to help students perfect their ability to communicate accurately and effectively in both oral and written business communications. Special emphasis is placed on writing business documents and communication for seeking employment. (Offered Fall, Spring and Summer)

OSM 312 Office Management - 3 hrs . Emphasis in this course is given to planning and scheduling work; employment procedures; supervision of employees, including training and promotion; and maintaining office equipment. (Offered Spring-odd numbered years).

OSM 315 Professional Writing - 3 hrs . This course is specifically designed to meet the needs of students who will perform research and write business and technical reports and proposals pertinent to any area of business, industry, or government. (Offered Fall and Spring)

OSM 406 Office Internship and Seminar - 3 hrs . This course is designed to give the student work-related experiences in office management. Work experiences, guided observations, participation, and conferences will be arranged with cooperative enterprises for ten weeks. (Offered Spring)

## DEPARTMENT OF MANAGEMENT AND MARKETING

316 New School of Business Building

The Department of Management and Marketing offers programs to prepare students for leadership positions in their chosen professions and to meet the challenges of personal development. The department offers majors in management and marketing, and concentrations in international business, logistics, and management information systems within the business administration program. The department also offers minors in management and marketing. These programs are designed to develop students' understanding and application of knowledge in accounting, economics, information systems, finance, international business, logistics, legal environment and ethics, management, marketing, and quantitative methods. To meet the objectives of a broadbased liberal arts education, at least 50 percent of the credits for graduation in these programs must be in areas of study other than business. This broad-based education prepares students for excellent employment opportunities in business, industry, government and the not-for-profit sector.

## PROFESSIONAL ORGANIZATIONS AND HONOR SOCIETIES

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 industries. 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 overall GPA of 3.25 and above. In addition to promoting and stimulating interest in the area of Marketing, the organization fosters a relationship among its honor students, marketing faculty, and marketing professionals.

Society for Human Resource Management (SHRM) - The Society for Human Resource Management is the leading voice of the human resource profession, representing the interests of over 65,000 professional and 6,000 student members from around the world. SHRM provides its membership with services that equip human resource professionals to become leaders and decision-makers within their organizations. The society is a founding member and Secretariat of the World Federation of Personnel Management Association (WFPMA) which links human resource associations in 55 nations.

Society of Logistics Engineers is an international organization dedicated to the development and maintenance of professional personnel in the field of logistics. This organization is open to all majors without regard to grade point average. Through this organization, student members are introduced to business leaders in a variety of disciplines prior to graduation.

## REQUIREMENTS FOR GRADUATION

- University General Education Curriculum (44 semester credit hours): ENG 101, ENG 102, ENG 205, ECO 231, ECO 232, MTH 112, history elective, literature sequence, fine arts elective, social science elective, two science electives with labs, physical education (2) or health or military science.
- School of Business Core Requirements (42 semester credit hours): ACC 203, ACC 204, ECO 271, FIN 315, MGT 207, MGT 213, MGT 308, MGT 315, MGT 413, MGT 442, MKT 315, MTH 120, OSM 310, OSM 315. International business course is listed with major requirements.
- Major Requirements for Business Administration, International Business Concentration (36 semester credit hours): ACC 219, MGT 332, MGT 458, four of the following six courses: ACC 461, ECO 446, FIN 487, LOG 409, MGT 465, MKT 464, three hours of business elective, three hours of non-business electives and nine hours of foreign language.
- Major Requirements for Business Administration, Logistics Concentration (36 semester credit hours): LOG 201, LOG 305, LOG 323, LOG 335, LOG 409, LOG 427, two of the following six courses: LOG 407, LOG 422, LOG 424, LOG 426, LOG 428, MGT 397, six hours of business electives, and six hours of nonbusiness electives.
- Major Requirements for Business Administration, Management Information Systems Concentration (36 semester credit hours): ACC 219, MGT 331, MGT 332, MGT 345, MGT 356, MGT 458, MGT 479, two management information systems electives, three hours of business elective and six hours of free electives outside of business.
- Major Requirements for Management ( 36 semester credit hours): ACC 219, MGT 332, MGT 352, MGT 397, MGT 433, MGT 458, two management electives, six hours of upper level business electives and six hours non-business electives.
- Major Requirements for Marketing (36 semester credit hours): MKT 316, MKT 323, MKT 410, MKT 411, MKT 464, MKT 477, MKT 487, two upper division marketing courses, nine hours of free electives outside of business.
- Requirements for a Minor in Management, Non-Business Majors (18 semester credit hours): MGT 207, MGT 315, MGT 332, MGT 413, MGT 433, three hours of non-management business elective approved by the chair of Management and Marketing.
- Requirements for a Minor in Management, Business Majors (18 semester credit hours): MGT 332, MGT 352, MGT 397, MGT 433, MGT 458, three hours of management elective.
- Requirements for a Minor in Marketing, Non-Business Majors (18 semester credit hours) MKT 315, MKT 316, MKT 410, MKT 477, MKT 487, non-marketing business elective approved by the chair of Management and Marketing.
- Requirements for a Minor in Marketing, Business Majors (18 semester credit hours): MKT 316, MKT 323, MKT 410, MKT 464, MKT 477, MKT 487.


## BUSINESS ADMINISTRATION <br> Logistics Concentration <br> 122 Credit Hours

## Freshman Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.
$\begin{array}{llllll}\text { ORI } 101 & \text { Survival Skills } & 1 & \text { ENG } 102 & \text { Composition II }^{1} & 3\end{array}$
ENG 101 Composition $I^{1} \quad 3 \quad$ MTH $120 \quad$ Calculus and its Application ${ }^{2} \quad 3$

| MTH 112 | Pre-Calculus Algebra ${ }^{1,2}$ | 3 | Science Elective with Lab | 4 |
| :--- | :--- | :--- | :--- | :--- |
|  | History Elective | 3 | Social Science Elective | 3 |
|  | Science Elective with Lab | 4 | Fine Arts Elective | $\frac{3}{16}$ |
| PED 137 or 11$]$ | Golf or Tennis $^{3}$ | $\underline{1}$ |  | 16 |

## Sophomore Year

| First Semester | Sem. Hrs. | Second Semester |  | Sem. 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 |
| MGT 213 | Computer Applications in Business | 3 | MGT 207 | Legal Environment and Ethics | 3 |
| ENG | Literature Sequence I | 3 | ECO 271 | Business Statistics I | 3 |
| PED | Physical Education $^{3}$ | $\underline{1}$ | LOG 201 | Introduction to Logistics | $\frac{3}{18}$ |


| Junior Year |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| First Semester Se |  |  | Second Semester |  | Sem. Hrs. |
| MGT 315 | Principles of Management | 3 | OSM 315 | Professional Writing | 3 |
| LOG 305 | Purchasing and Supply Managemen | 3 |  | Business Elective | 3 |
| MKT 315 | Principles of Marketing | 3 | LOG 323 | Transportation Management | 3 |
| OSM 310 | Business Communications | 3 | LOG 335 | Config. and Technology Mgt. | . 3 |
| FIN 315 | Principles of Finance | $\underline{3}$ | MGT 308 | Mgmt. Information Systems | 3 |
|  |  | 15 |  |  | 15 |

## Senior Year

First Semester
Sem. Hrs. Second Semester Sem. Hrs.

| LOG 409 | International Logistics or |  | MGT 442 | Strategic Management \& Policy | 3 |
| :--- | :--- | :--- | :--- | :--- | :---: |
| MGT 458 | International Business | 3 |  | Logistics Elective | 3 |
| MGT 413 | Production/Operations Management | 3 | Business Elective | 3 |  |
| LOG 427 | Quality Management | 3 | Non-Business Elective | $\frac{3}{12}$ |  |
|  | Non-Business Elective | 3 |  |  |  |

[^2]

## COURSE DESCRIPTONS

LOG 201 Introduction to Logistics - 3 hrs . An introduction to the fundamentals of logistics. The main areas of focus include role of materials management and physical distribution, activities such as customer service, order processing and information flow, transportation alternatives, warehousing, purchasing, inventory, system design and organization, flow of raw materials, work-in-process, facility location, and packaging. Prerequisite: Sophomore standing (Offered Fall and Spring)

LOG 301 Provisioning - 3 hrs. A study of the provisioning aspects of research and engineering, cataloging, requirements determination, acquisition, and physical distribution, along with the most up-to-date concepts, policies, and procedures applicable to provisioning. Prerequisite: LOG 201 (Offered Fall)

LOG 305 Purchasing and Supply Management - 3 hrs . A detailed analysis of the interrelationships of military and industrial supply with other major logistics functions of maintenance, procurement, transportation, and marketing. Prerequisite: LOG 201 (Offered Spring)

LOG 322 Federal Accounting/Budget Cycle/Defense Procurement - 3 hrs. A study of the principles of underlying fund accounting as they evolve in the federal government and program budgeting in the Department of Defense as implemented by the United States Military Departments. Prerequisite: LOG 201 (Offered Spring)

LOG 323 Transportation Management - 3 hrs. An overview of transportation emphasizing its role, environmental and sociological aspects, economic characteristics, carrier services, regulations and policy goals. Prerequisite: LOG 201 (Offered Fall)

LOG 324 Contract Law - 3 hrs. A course on federal contracting, as well as commercial contracting which is essential 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 Spring)

LOG 333 Configuration Management - 3 hrs . A study of the process by which the complete physical and functional characteristics of a manufactured item are identified. The establishment of a configuration baseline and how all changes and modifications to item characteristics can be controlled and documented are included. It also addresses total system configuration to include support sub-system equipment. Prerequisite: LOG 201 (Offered Fall)

LOG 334 Maintenance Management/Engineering Design - 3 hrs. A detailed analysis of the interrelationships of military and industrial supply with other major logistics functions of maintenance, procurement, transportation, and marketing. This course also covers all aspects of design of maintenance systems and concurrent engineering systems. Additionally, it evaluates plans, programs, and budgets as they relate to maintenance, maintenance control systems and techniques, and the relationship of maintenance to other logistics functions. Prerequisite:
LOG 201 (Offered Fall)

LOG 411 Procurement and Contract Management - 3 hrs . An exploration of the primary aspects of the procurement and management of material resources necessary for government or business operations. Introduction will be made to broad concepts of procurement and material management to include the generation of a requirement, forecasting, funding, the procurement cycle through award of contract, inventory management and distribution. Prerequisite(s): LOG 201 or concurrent, LOG 305 or concurrent (Offered Fall)

LOG 415 Logistics Support Analysis and Material Acquisition Life Cycle Cost Analysis RCM - 3 Hrs. Engineering management as it applies to the development, direction, and control of the design, performance, and reliability of a system. Concentration on life cycle cost modeling and logistics support analysis. Prerequisite: LOG 335 (Offered Fall or Spring)

LOG 422 Negotiation Techniques - 3 hrs. A course designed to develop principles, skills and techniques necessary for effective negotiation of procurement actions. To be included are verbal and nonverbal mannerisms, communication tools, team approach, buyer's preparation for negotiation, and various tactics and strategies for negotiating. Prerequisite: None (Offered Spring)

LOG 424 Contract Administration - 3 hrs. An intensive review of contract administration functions and responsibilities, beginning when a contract is awarded and continuing until the contract is terminated or delivery is made and all aspects of the contract have been performed. It includes consideration of the roles of small businesses and sub-contractors. Prerequisite: LOG 407 (Offered Spring)

LOG 426 Contract Cost and Price Analysis - 3 hrs. A course to present the tools and techniques available to the student for cost-price estimating, cost/price analysis, projection techniques, factors affecting profits or fees, the weighted guidelines technique of profit analysis, and application of the learning curve theory. After cost/price analysis has been performed, negotiation strategies and techniques are developed. Prerequisite: LOG 201 (Offered Fall)

LOG 427 Quality Management - 3 hrs. An overview of the total quality management function, including organization, management, process control, and product reliability and maintainability. Prerequisites: LOG 201 and LOG 335 (Offered Spring)

LOG 428 Integrated Logistics Support and Material Acquisition - 3 hrs. A capstone course covering all aspects of project/product management of major, non-major, and low value items/systems. Emphasis is on ILS management and planning, systems engineering approach to logistics support management, acquisition strategy, management milestones and scheduling, and life cycle costs.
This is a policy course. Prerequisites: LOG 201, LOG 322, LOG 333, and LOG 427 (Offered Spring)

LOG 451 Inventory Management and Production Control - 3 hrs . A study of the management techniques associated with material management as an element of integrated logistics support in the system/product life cycle management concept. Management of assets from acquisitions through final disposition is considered from cost effectiveness and customer satisfaction viewpoints. Prerequisite: LOG 305 (Offered Fall)

## BUSINESS ADMINISTRATION

International Business Concentration 122 Credit Hours

## Freshman Year

First Semester

| ORI 101 | Survival Skills | 1 | ENG 102 | Composition II $^{1}$ | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| ENG 101 | Composition I $^{1}$ | 3 | MTH 120 | Calculus and its Applications $^{2}$ | 3 |
| MTH 112 | Pre-Calculus Algebra ${ }^{1,2}$ | 3 |  | Science Elective with Lab | 4 |
|  | History Elective | 3 |  | Foreign Language Elective | 3 |
|  | Science Elective with Lab | 4 |  | Fine Arts Elective | 3 |
| PED 137 or 11 | Golf or Tennis $^{3}$ | $\underline{1}$ |  | Physical Education |  |
|  |  | 15 |  | $\frac{1}{17}$ |  |


| First Semester |  | Sem. Hrs. | Second Semester |  | Sem. 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 | Literature Sequence I | 3 | MGT 207 | Legal Environment and Ethics | 3 |
| MGT 213 | Computer Appls. In Business | 3 | ECO 271 | Business Statistics I | 3 |
|  | Social Science Elective | 3 |  | Foreign Language Elective | 3 |
| ENG 205 | General Speech | $\underline{3}$ | ENG | Literature Sequence II | $\underline{3}$ |
|  |  | 18 |  |  | 18 |

Junior Year
First Semester Sem. Hrs. Second Semester Sem. Hrs.
ACC 219 Managerial Accounting 3 MGT 308 Management Information Systems 3

SCHOOL OF BUSINESS

| MGT 315 | Principles of Management | 3 | MKT 315 | Principles of Marketing | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| OSM 310 | Business Communications | 3 | MGT 332 | Organizational Behavior \& Theory | 3 |
| FIN 315 | Principles of Finance | 3 | OSM 315 | Professional Writing | 3 |
|  | Foreign Language Elective | $\underline{3}$ |  | Business Elective | $\frac{3}{15}$ |

## Senior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.
MGT 413 Production/Operations Mgmt. 3
MGT 442 Strategic Management \& Policy 3 International Business Elec. ${ }^{4} 3$ International Business Elec. ${ }^{4} 3$ Non-Business Elective $\underline{3}$
MGT 458 International Business

International Business Elec. ${ }^{4} 3$
International Business Elec. ${ }^{4} \underline{3}$
12

| MGT 442 | Strategic Management \& Policy | 3 |
| :--- | :--- | :--- |
| MGT 458 | International Business | 3 |
|  | International Business Elec. ${ }^{4}$ | 3 |
|  | International Business Elec. ${ }^{4}$ | $\underline{3}$ |
|  |  | $\underline{12}$ |

${ }^{1}$ 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.
${ }^{3}$ Health or military science may be taken instead of physical education.
${ }^{4}$ International Business Electives: ACC 461, ECO 446, FIN 487, MGT 465, MKT 464, LOG 409.

## BUSINESS ADMINISTRATION

## Management Information System Concentration 122 Credit Hours

| First Semester |  |
| :--- | :--- |
| ORI 101 | Survival Skills |
| MTH 112 | Pre-Calculus Algebra $^{1,2}$ |
| ENG 101 | Composition I |
|  | History Elective <br> Science Elective with Lab <br> Golf or Tennis |

Sem. Hrs. Second Semester Sem. Hrs.
1 ENG 102 Composition II $^{1} \quad 3$
3 MTH 120 Calculus and its Applications ${ }^{2} 3$
3 Science Elective with Lab 4
3 Fine Arts Elective 3
$4 \quad$ Social Science Elective $\quad 3$

1
15
3

Social Science Elective $\quad \underline{3}$

Freshman Year

## Sophomore Year

First Semester

| ECO 231 | Principles of Macroeconomics |
| :--- | :--- |
| ACC 203 | Introduction to Accounting I |
| ENG 205 | General Speech |
| MGT 213 | Computer Appls. In Business |
| ENG | Literature Sequence I |
| PED | Physical Education $^{3}$ |

Sem. Hrs. Second Semester Sem.Hrs.

| 3 | ECO 232 | Principles of Microeconomics | 3 |
| :--- | :--- | :--- | :--- |
| 3 | ACC 204 | Intro. to Accounting II | 3 |
| 3 | ENG | Literature Sequence II | 3 |
| 3 | MGT 207 | Legal Environ. and Ethics | 3 |
| 3 | ECO 271 | Business Statistics I | $\underline{3} \underline{5}$ |
| $\frac{1}{16}$ |  |  |  |

## Junior Year

Sem. Hrs. Second Semester Sem. Hrs.
3 MGT 345 Database Management Sys. 3

| ACC 219 | Managerial Accounting | 3 | MKT 315 | Principles of Marketing | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| OSM 310 | Business Communications | 3 | MGT 332 | Org. Behavior \& Theory | 3 |
| FIN 315 | Principles of Finance | 3 | MGT 331 | Info. Sys. Analy. \& Design | 3 |
| MGT 308 | Management Information Systems | 3 | MGT 356 | Data Comm./Networking | 3 |
|  | Non-Business Elective | $\underline{3}$ | OSM 315 | Professional Writing | $\underline{3}$ |
|  |  | 18 |  |  | 18 |

## Senior Year

|  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |
| :--- | :---: | :--- | :--- | :--- | :---: |
| MGT 413 | Mgt. Info. Systems Elective | 3 | MGT 442 | Strategic Mgmt. \& Policy | 3 |
|  | Production/Operations Mgmt. | 3 | MGT 458 | International Business | 3 |
|  | Business Elective | 3 | MGT 479 | Intro. Object Oriented Program. | 3 |
|  | Non-Business Elective | $\underline{3}$ |  | Mgt. Info. Systems Elective ${ }^{4}$ | $\underline{3}$ |
|  |  | 12 |  |  | 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.
${ }^{3}$ Health or military science may be taken instead of physical education.
${ }^{4}$ Mgt. Info. Systems Elective: Approved computer science or management information systems courses

## MANAGEMENT <br> 122 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 120 | Calculus and its Applications $^{2}$ | 3 |
| MTH 112 | Pre-Calculus Algebra $^{1,2}$ | 3 |  | Science Elective with Lab $^{4}$ | Fine Arts Elective |

## Sophomore Year

First Semester

| 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 |
| MGT 213 | Computer Applications in Business | 3 | MGT 207 | Legal Environment and Ethics | 3 |
| ENG | Literature Sequence I | 3 | ECO 271 | Business Statistics I | $\underline{3}$ |
| PED | Physical Education | $\underline{1}$ |  | 15 |  |

## Junior Year

|  |  |  | SCHOOL OF BUSINESS |  |  |
| :--- | :--- | :---: | :--- | :--- | :---: |
| First Semester |  |  | Sem. Hrs. | Second Semester |  |
| ACC 219 | Managerial Accounting | 3 | MKT 315 | Principles of Marketing | 3 |
| MGT 315 | Principles of Management | 3 | MGT 332 | Org. Behavior \& Theory | 3 |
| OSM 310 | Business Communications | 3 | MGT 352 | Entrepreneurship | 3 |
| MGT 308 | Management Information Systems | 3 | MGT 397 | Management Science | 3 |
| FIN 315 | Principles of Finance | $\underline{3}$ | OSM 315 | Professional Writing | $\underline{3}$ |
|  |  | 15 |  |  | 15 |

## Senior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.
MGT 413 Production/Operations Management $3 \quad$ MGT 442 Strategic Management \& Policy 3

| Management Elective ${ }^{4}$ | 3 | MGT 458 | International Business | 3 |
| :--- | :--- | :--- | :--- | :--- |

MGT 433 Human Resource Management $3 \quad$ Management Elective ${ }^{4} \quad 3$
Business Elective 3
Non-Business Elective 3
Business Elective 3
Non-Business Elective 3
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.
${ }^{3}$ Health or military science may be taken instead of physical education.
${ }^{4}$ Management Electives: Upper-level management courses.

## COURSE DESCRIPTONS

MGT 207

MGT 213

MGT 308 Management Information Systems - 3 hrs . A language-independent, introductory course on management information systems. It involves design and development of business systems. Students are exposed to an overview of a process, or a structured approach to the definition of needs, creation of specification, and implementation of new systems. This process overview encompasses an historic summary of the traditional life cycle methodology used for system development. Prerequisite: MGT 213 or consent of instructor (Offered Fall and Spring)

MGT 315 Principles of Management - 3 hrs . A study of the functions of management, which includes planning, organizing, leading and controlling, and the application of management principles in organizations. Prerequisite: None (Offered Fall, Spring, and Summer)

MGT 318 Business Law - 3 hrs. This course is designed to cover the following subject matter: professional ethics and legal responsibility of accountants; debtor-creditor relations; government
regulation of business; (UCC) uniform commercial code; business organizations, contracts and property. Prerequisite: MGT 207 (Offered Fall)

MGT 331 Information Systems Analysis and Design - 3 hrs. Techniques and philosophies of systems analysis are addressed. Included are: traditional versus structured design methods, computerbased tools for systems analysis, workbenches, design and analysis of database systems, maintenance of existing information systems, human/machine interfaces, and security and control. System design, implementation, and methods of systems installation and operation are presented. A system development project is required. Prerequisite: MGT 213 (Offered Spring)

MGT 332 Organizational Behavior and Theory - 3 hrs. A study of the behavior of individuals and groups within organizations. The course also examines organizational design and processes. Prerequisite: MGT 315 (Offered Fall and Spring)

MGT 345

MGT 352

MGT 356

MGT 397

MGT 402 Independent Study - 1-4 hrs. A research project accomplished under the supervision of a member of the School of Business faculty. Such projects will involve the detailed study of a topic of particular interest to the business profession, and the results of the study will be documented by a research report. Prerequisite: Senior standing and permission of the instructor (Offered Fall and Spring)

MGT 410

MGT 412
Database Management Systems - 3 hrs. This course provides an introduction to the design and use of databases in meeting business information needs. Topics include database planning conceptual design, and data administration. The concepts are studied with projects involving the use of a current database management system. Prerequisite: MGT 213 (Offered Fall)

Entrepreneurship - 3 hrs. An overview of entrepreneurship, primarily focusing on the creation and management of small businesses. Several critical functions necessary for their operations such as planning, organizing, directing, controlling, purchasing, production, marketing, and finance are examined. Prerequisites: MGT 315, FIN 315, and MKT 315 (Offered Fall or Spring)

Data Communications and Networking - 3 hrs. The technical and managerial aspects of telecommunications as they apply to the business environment are discussed. Issues include: communications components and services, local area network architecture, managerial implementations, organizations issues and cost/benefits analysis. Prerequisite: MGT 213 (Offered Fall)

Seminar in Management Information Systems - 3 hrs. An in-depth coverage of a variety of contemporary issues in management information systems. Prerequisites: MGT 308 and permission of the instructor. (Offered Spring)

Principles of Insurance - 3 hrs. A survey of basic principles, problems and terminology associated with individual, group and organizational risk management as it relates to the following: the legal aspects of insurance, the risk management process, types of coverage, the
insurance market, operating an insurance business and governmental regulation of the profession. Prerequisite: MGT 315 (Offered Fall)

MGT 413 Production/Operations Management - 3 hrs . An examination of tools and theory of production and operations management. Focus is on the issues related to planning, controlling and designing of production/operations systems. Prerequisites: MTH 112, and MTH 120, ECO 271 (Offered Fall and Spring)

MGT 430 Advanced Management Seminar - 3 hrs. An in-depth exploration of current issues and special topics in management. Contents will vary depending on the current status of management practices and methods, and the needs of the students. Prerequisites: MGT 315 and consent of instructor. (Offered Fall or Spring)

MGT 433 Human Resource Management - 3 hrs. An examination of the activities and practices related to effective and efficient utilization of human resources in organizations. Prerequisite: MGT 315 (Offered Fall and Spring)

MGT 442 Strategic Management and Policy - 3 hrs. A study in developing an understanding of policy formation and decision-making as related to the current business environment. The course objectives are attained through integrating business fundamentals (marketing, production, finance, economics, statistics, etc.) into methods of resolving business problems. The instructional methods including lectures, discussions, and case analysis. Prerequisites: ACC 204, FIN 315, MKT 315, and MGT 315 (Offered Fall and Spring)

MGT $450 \quad$ 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

MGT 473 Small Business Counseling - 3 hrs. A practical exposure to the problems and opportunities of small business firms. Student teams are assigned as a counseling unit to assist local business managers in the identification of problems and the formulation of alternative solutions, as well as the identification of areas of opportunity within the participating organizations. Prerequisites: Senior standing and permission of the instructor: completion of MGT 352 is highly recommended. (Offered Fall or Spring)

MGT 479 Introduction to Object Oriented Programming - 3 hrs . This course provides a study of the C++ programming language as they pertain to managerial applications. In addition, the course will
introduce the use of object-oriented programming methodologies. Prerequisite: MGT 213 (Offered Fall)

MGT 489 Systems Development Project - 3 hrs. This course provides the student with an opportunity to apply the knowledge and skills acquired in other MIS courses towards the development of effective and efficient management information systems. Prerequisite: Senior standing and permission of the instructor. (Offered Fall or Spring)

MGT 490 Management Internship - 1-6 hrs. A practical course in integrating classroom theories with actual business practices. Prerequisite: consent of the instructor. (Offered Fall and Spring)
$\left.\begin{array}{lllll} & \begin{array}{c}\text { MARKETING } \\ \text { 122 Credit Hours }\end{array} & \\ \text { Freshman Year }\end{array}\right]$

First Semester
ECO 231 Principles of Macroeconomics
ACC 203 Introduction to Accounting I
ENG 205 General Speech
MGT 213 Computer Appls. in Business
ENG Literature Sequence I
PED Physical Education ${ }^{3} \quad \underline{1}$
Sophomore Year
Sem. Hrs. Second Semester
Sem. Hrs.
3
3
ECO 232 Principles of Microeconomics
3 ACC 204 Introduction to Accounting II 3
3 ENG Literature Sequence II 3
3 MGT 207 Legal Environment and Ethics 3
3 ECO 271 Business Statistics I $\underline{3}$
16

## Junior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| OSM 310 | Business Communications | 3 | MKT 316 | Buyer Behavior |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| FIN 315 | Principles of Finance | 3 |  | Marketing Elective | 3 |
| MKT 315 | Principles of Marketing | 3 | MKT 323 | Promotion Management | 3 |
| MGT 315 | Principles of Management | 3 | OSM 315 | Professional Writing | 3 |
| MGT 308 | Management Information Systems | $\underline{3}$ |  | Non-Business Elective | $\frac{3}{15}$ |

## Senior Year

\(\left.\begin{array}{lllll}MGT 413 \& Production/Operations Mgmt. \& 3 \& MGT 442 \& Strategic Management \& Policy <br>
MKT 477 \& Marketing Management \& 3 \& MKT 411 \& Advanced Marketing Research <br>

MKT 410 \& Marketing Research \& 3 \& MKT 464 \& Global Marketing\end{array}\right]\)| 3 |
| :--- |
|  |
| Marketing Elective |
| Non-Business Elective |

## COURSE DESCRIPTONS

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 $330 \quad$ 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

MKT 411

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 applications 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 Environments - 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. Integrative 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. Arlester McBride, Dean<br>307 Patton Hall<br>256-851-5500


#### Abstract

MISSION

The mission of the School of Education is to provide high quality professional preparation which will enable pre- and in-service teacher candidates and other professional school personnel to know and demonstrate the content, pedagogical, and professional knowledge, skills, and dispositions necessary to help all students learn. The School provides unique experiences in diversity designed to assist students in assuming leadership roles that are guided by beliefs and attitudes related to values such as caring, fairness, honesty, responsibility, and social justice.


## OBJECTIVES

The objectives of the School of Education are in consonance with the objectives and philosophy of the University. More specifically, as a professional school, it seeks to achieve the following objectives.

1. To prepare professionally qualified educators--teachers, educational specialists, principals, supervisors, etc. -- using innovative strategies and techniques to serve assessed needs in the American society. This preparation includes both pre-service and in-service education.
2. To design, test, and interpret educational theories, policies, and practices.
3. To develop materials, strategies, and models for educational use that should facilitate and enhance teaching and learning through research and scholarship, ranging from basic to complex.
4. To assume leadership in stimulating the application of the results of scholarship and research to practice in the field. This will be done through collaborative decision-making, involving professional practitioners, students, lay citizens, and others.
5. To develop new programs to meet the needs of teachers for today's schools--teachers who are innovative, aware, sensitive, loving-caring and ready to tackle the problems linked to the fastchanging educational scene.
6. To design professional development programs and activities that significantly reflect such important element as timeliness, relatedness, appropriateness, and relevancy.
7. To design and implement vehicles to foster effective and honest communication in today's pluralistic society through multicultural teaching and learning.
8. To provide training in computer-based education that will provide an understanding of technology and equipment that will enhance educators' roles in electronically equipped classrooms.
9. To comply with Alabama State Department NCATE, SACS, Specialty organizations and University rules for teacher certification in all program areas.
10. To prepare students for graduate study and careers in the fields of art, psychology, and speechlanguage pathology.

## TEACHER EDUCATION OR CERTIFICATION CURRICULA

A student who is interested in teaching in Alabama public schools should enroll in the curriculum that will prepare him/her for the area or areas he/she wishes to teach. The following information explains the curricula and the type of certificate for which each curriculum prepares the student.

A student who satisfactorily completes the curriculum in Vocational Agriculture, Family and Consumer Science Education, Business and Office Education, Technology Education, or Technical Education and who meets all other requirements of the University will receive a Bachelor of Science degree and will be eligible to apply for a Class B Secondary Professional Educator Certificate, which qualifies him/her to teach in a single major field of concentration.

A student who successfully pursues two majors 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 Certificate, which qualifies him/her to teach in the middle junior or senior high schools in the State. The student must select two major fields of concentration.

The University offers curricula in early childhood, elementary education, middle school education endorsements, Special Education and $\mathrm{N}-12$ programs in art, music and physical education, each of which is approved by the Alabama State Board of Education for certification of teachers for the particular level. Upon completion of a specific curriculum and all other requirements of the University, the student is eligible for a Bachelor of Science degree and may apply for a Class B Professional Educator Certificate in the respective area for which he/she has prepared.

## POLICY STATEMENT

Teacher Education Programs are approved by the Alabama State Board of Education. Because of the nature of Teacher Education programs and because State Certification changes that may occur, the School of Education reserves the right to change the requirements in each Teacher Education Program as necessary. It is the sole responsibility of the student to be aware of and to follow his/her State-Approved Teacher Education Program as shown on the appropriate State-Approved Checklist.

## WARRANTY STATEMENT

## First-Year Teacher Quality Assurance Program

The Alabama A. and M. University's First-Year Teacher Quality Assurance Program is designed to express the University's confidence in the graduates confidence in the graduates of the School of Education. This program also is the University's guarantee to cooperate with colleagues in Alabama's Public School Systems.

To the graduates: The First-Year Teacher Quality Assurance Program represents the School of Education faculty's pride in your accomplishments. The faculty also acknowledges that a strong support system is important in your first year of teaching, and desires to be a part of your continuing professional development.

To the School Boards in Alabama: The First-Year Teacher Quality Assurance Program represents the School of Education faculty's diligence in screening instruction and assessment designed to prepare the best teachers for the children. The faculty believes that school boards can be confident in appointing the

School of Education graduates to teaching positions because the faculty knows that the graduates are ready to begin teaching, and the faculty stands behind its graduates.

## Stipulations

The First-Year Teacher Quality Assurance Program is ...
...who teach in the State of Alabama and who:
have successfully completed an approved program of study in Teacher Education;
have been recommended for certification by Alabama A. and M. University, and
have been judged to be performing unsatisfactorily in the classroom through the Professional Education Personnel Evaluation Program of Alabama (PEPE), within two years after program completion.

First year teachers who have met the above criteria are eligible for supervisory assistance and/or remediation from the School of Education faculty. In situations where the Dean of Education or his designee has determined that the assurance program applies, there should not be any cost to either the teacher or the employing school system. The assurance program does not apply in situations where the teacher has been given an out-of-field teaching assignment. If assistance is requested and agreed upon by the School of Education, the school system personnel, and the teacher, assistance will be provided throughout the first two years of teaching.

## Procedure for Initiating Requests for Assistance

To initiate a request for assistance when the teacher's performance has been assessed as being unsatisfactory, the school principal or the central office supervisory personnel should contact the Dean of the School of Education (256) 851-5500.

The Dean, his designees, and the appropriate department chair will determine the nature and extent of the faculty's involvement.

The school principal and/or the supervisory personnel must be willing to share all information pertinent to the first-year teacher's classroom performance.

Service to School Systems:
Beginning Teacher Assistance Information
No cost or low cost ways to assist beginning teachers to adjust to their new jobs and to enhance their professional growth.

Request for Assistance

Investigation and assistance in addressing verified performance problems of graduates from the School of Education.

## Quick Response

Immediate access to the First-Year Teacher Quality Assurance Program through the Dean's Office of the School of Education.

## Service to Beginning Teachers:

## 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.

Students may select their areas of concentration from the broad fields of Early Childhood Education, Elementary Education, Middle School Education endorsements, special education, N-12 programs in art, music, and physical education, and secondary education. The majority of secondary education programs require two areas of concentration. Students who complete these programs are eligible to receive the Alabama Class B Professional Educator Certificate. Each student is responsible for initiating the procedure for the processing of the application for certification.

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). The School of Education is also affiliated with the National Association of State Directors of Teacher Education and Certification (NASDTEC) and the Interstate Certification Project (ICP).

## SUBJECT AREA MAJORS

Under the rules of the Alabama State Department of Education, secondary school teachers are licensed to teach only in academic areas endorsed on the professional certificate.

Double Major Areas -- A student electing to major in one of the following fields must also select a second major:
Biology Education Chemistry Education
English Language Arts
Physics Education
French Education
History Education
Single Major Areas -- A student electing to major in one of the following fields does not have to select a second major; each of these areas is comprehensive:

Agriscience Technology (6-12)
Art Education (P-12)

English Language Arts Education (6-12)
Mathematics (6-12)

| Business/Office Education (6-12) | Music Education (P-12) |
| :--- | :--- |
| Early Childhood Education (P-3) | Vocal/Choral |
| Elementary Education (K-6) | Instrumental |
| General Science Education (6-12) | Physical Education (P-12) |
| Family and Consumer Sciences (6-12) | General Social Science Education (6-12) |
| (formerly Home Economics Education) | Technical Education (6-12) <br> Technology Education (6-12) <br> (formerly Industrial Arts/Tech Edu) |
| (formerly Trade/Industrial Education) <br> Middle School Endorsement on Elementary Certification (4-8 added to K-6) |  |
| General Science | Mathematics |
| English Language Arts | General Social Science |
| Middle School Endorsement on Secondary Certification (4-8 added to 6-12) |  |

Major Areas in Special Education -- A student electing to major in one of the following fields does not have to select a second major; each of these areas is comprehensive:

| Early Childhood Special Education | Collaborative Teacher (K-6) |
| :--- | :--- |
| Birth - Age 8 | Collaborative Teacher (1-6) |

## PROCEDURE FOR CALCULATING GRADE POINT AVERAGE (GPA) IN A TEACHER EDUCATION PROGRAM

Effective for all teacher education majors beginning collegiate study fall semester 1997 and thereafter, a minimum overall grade point average 2.50 on a 4 -point scale is required for program admission and completion. The overall grade point average must be calculated using the following components:

1. General Studies -- All work used to meet the general studies requirements in the approved program;
2. Professional Studies -- *All work used in professional studies of the approved program at the recommending institution and all transferred work in the professional studies used to meet program requirements;
3. Teaching Field(s) -- * All work used in the teaching field(s) of the approved program at the recommending institution and all transferred work in the teaching field(s) used to meet program requirements.

## GUIDELINES FOR ADMISSION

Admission to Alabama A\&M University does not qualify a student for admission to a Teacher Education Program. Eligibility for admission to a Teacher Education Program is determined after completion of the sophomore year at the University. The University has clearly defined criteria for admitting students to a Teacher Education Program. These include the following:

1. The student must successfully complete EDU 102, Introduction to Teacher Education and SPE 201, Introduction to the Study of Exceptional Children with a minimum grade of "C" in each course.
2. The student must make formal application for admission to a Teacher Education Program upon entering Alabama A\&M University. The requirements specified on the application must be completed by the end of the sophomore year. An application may be obtained in Room 316, Patton Hall. The Teacher Service Center is responsible for processing the application through the necessary channels.
3. The student must complete at least $\mathbf{6 0}$ semester hours of which 48 semester hours must be in the general studies program with a minimum GPA of 2.50; 12 in professional studies and 12 in the teaching field. A grade of "C" must be earned in English 101 and 102 Communication Skills.
4. The student must achieve a minimum grade point average of 2.50 on a 4-point scale on all college work used to meet admission requirements.
5. The student must achieve a minimum score of three hundred (300) on the Alabama Basic Skills Test. (BST)
6. The student must satisfactorily complete a speech, language hearing examination administered by the Department of Special Education. A nominal fee will be charged by the Department.
7. The student must take the Taylor-Johnson Temperament Analysis to provide information on the applicant's personality, interests, and attitudes relative to the requirements for successful teaching.
8. The student must be interviewed by a panel of faculty members from within the School of Education and Program area.
9. The student must submit a completed health form from a licensed physician or from the University's Student Health Center.
10. The student must participate in pre-professional experiences designed to assist the student in making a wise career choice. Laboratory experiences in the school are required as part of the selection process and for admission to a Teacher Education Program.
11. The student will not be permitted to take or to transfer in professional education courses completed at a junior or community college or use lower division courses for higher division courses in the teaching field.
12. The student who transfers from another institution to Alabama A\&M University, beginning fall semester 1997 and thereafter, who officially declares teacher education as a major, and who is awarded the junior classification shall submit an application for admission, and complete the requirements for admission to teacher education by the end of one semester of academic course work or by completion of a minimum of 15 semester hours at the University. The completed application shall be deposited in the Teacher Service Center.
13. The student who transfers from another institution to Alabama A\&M University fall semester 1997 and thereafter, who officially declares teacher education as a major, and who is awarded the sophomore classification shall submit an application for admission, and complete the requirements for admission to teacher education by the end of one-year of academic course work or by
completion of a minimum of 30 semester hours at the University. The completed application shall be deposited in the Teacher Service Center.

A student who fails to meet the above criteria for the initial application must complete the following:

1. Enroll in the Laboratory Approach to Concept Development class (EDU 101).
2. Repeat required examination(s) in an effort to meet admission standards.
3. Complete no more than 12 semester hours in professional education. The 12 semester hours are limited to the following courses:

| EDU 102 | Introduction to Teacher Education |
| :--- | :--- |
| EDU 307 | Principles of Teaching |
| EDU 311 | Human Growth and Development |
| SPE 201 | Introduction to the Study of Exceptional Children |

The latter is designed primarily to assist students in making wise decisions concerning admission to a Teacher Education Program and the selection of a teaching field.

In no case may a student earn credit or credits in more than the identified 12 semester hours of professional education. Additional credits may be earned after a student has met all of the admission requirements. A departmental advisor and the Teacher Service Center monitor all requirements for admission into a Teacher Education program.

## ELIGIBILITY FOR STUDENT TEACHING

Effective January 1, 1995, and thereafter, the student who expects to participate in internship (student teaching) shall meet all the Teacher Education Program admission criteria described in the Alabama Administrative Code and be admitted to a program no later than the first day of the internship (student teaching). The internship (student teaching) semester is defined as the semester in which the student is enrolled in an internship (student teaching).

Effective Fall 1995 - Only students who have a minimum of 2.50 grade point average (GPA) in general studies (all work used), in the teaching field (all work used), in professional studies (all work used) and overall will be eligible for internship (student teaching). Teacher Education majors must obtain and maintain a minimum overall 2.50 grade point average (GPA) throughout their programs.

A student teaching application must be completed and filed in the Office of Field Experiences at least one semester prior to the internship date. The (student teaching) deadline for the fall is March 15 of the previous spring semester, and for the spring semester, September 15 of the previous fall semester.

Prerequisites:

1. The student must have been admitted to a Teacher Education program.
2. The student must have completed $\mathbf{9 5 \%}$ of course work.
3. The student must have obtained and maintained a minimum 2.50 grade point average in general studies, professional studies, the teaching field and overall.
4. The student must have completed all methods courses and teaching field courses with a minimum grade point average of 2.50 or better.
5. The student must have removed all grades of "Incomplete."
6. The student must have repeated all courses in professional studies and the teaching field with grades of "D" and "F."
(A passing grade of " C " or better is required in Eng 101 and 102 Communication Skills, all teaching field and professional education courses. In addition, the Grade Point Average (GPA) in each of these areas must be 2.50 or better.)

## INCOMPLETE GRADE POLICY FOR STUDENT TEACHING

A grade of incomplete " I " is only an interim course mark. Use of the "I" in student teaching courses varies from the standard use. In directed teaching courses and internships, the "I" is given when the student has not met all course requirements. The student must retake the entire course. The following courses are affected by this policy: AGB 402, BED 426, ECH 404, EDU 406, EDU 408, FCS 402, SPE 409, ITE 408, ITE 402, ART 408.

## GUIDELINES FOR EXITING THE PROGRAM(S)

1. Student must have met all Teacher Education admission requirements.
2. Student must have made a grade of "C" or better in general studies, professional studies, teaching field courses and obtained an overall GPA of 2.50.
3. The student must have completed all course requirements that are on the applicable State-Approved Checklist for his/her particular major area or areas.
4. Student must have passed the Basic Professional Exit Examination required by the School of Education with a score of $75 \%$ or better.
5. Student must have passed his/her area of concentration exit examination required by the School of Education with a score of $75 \%$ or better.
6. Student must complete a Teacher Education Program no later than four years after admission into a program. A student who does not complete a program within a four-year period may be reinstated under conditions consistent with the policy of the School of Education.


#### Abstract

ALABAMA TEACHERS CERTIFICATE

This section includes the general minimum requirements of the state for certification. A student who files an application must complete the curriculum approved by the State of Alabama for the University. The completion of the curriculum approved for certification and all other requirements for graduation with a Bachelor's of Science Degree will qualify a person for a Class B Professional Educator's Certificate. The area of certification offered by the State (Early Childhood, Elementary, Middle School endorsements, Elementary-Secondary, Secondary, or Special Education) is determined by a program pursued to completion.


A $\mathbf{\$ 2 0}$ nonrefundable application fee in the form of a cashier's check or money order made payable to the State Department of Education must accompany each application for a teacher's certificate.

An applicant shall be required to obtain a background clearance through a fingerprint review conducted by the Alabama Bureau of Investigation (ABI) and Federal Bureau of Investigation (FBI) prior to the issuance of a certificate or license to determine any criminally history, effective July $1,1997$.

A separate $\$ 49$ nonrefundable fingerprint fee in the form of a cashier's check or money order made payable to the State Department of Education is required. An applicant who obtains background clearance for issuance of an Alabama certificate and allows the certificate to lapse for more than 90 days (holding no valid Alabama certificate for that 90-day period) will be required to obtain another background clearance for issuance of any certificate or license.

## CERTIFICATION IN OTHER STATES

Additional states will grant professional certificates to students completing the Alabama A\&M University teacher preparatory programs. Students who are interested in teaching in other states should contact the Teacher Service Center to obtain a listing of the states' requirements for teacher certification. All education majors must apply for Alabama certification.

## DEPARTMENT OF CURRICULUM AND INSTRUCTION

The Department of Curriculum and Instruction offers numerous undergraduate programs which lead to a B.S. in Education and/or an Alabama "Class B" professional certificate in a student's program area. Students may prepare for any of the following teaching areas: Early Childhood Education, grades P-3; Elementary Education, grades K-6; Secondary Education, grades 6-12; where concentrations may be in Agriscience Technology Education; Biology; Business and Office Education; Chemistry; English Language Arts; General Science; History; Family and Consumer Science; Mathematics; Physics; General Social Science; Technical Education; Technology Education; Art Education, P-12; French, P-12; Music, P-12; Physical Education, P-12. The Department of Counseling and Special Education offers the following undergraduate programs which leads to a BS or BA degree in psychology (non-teaching). Early Childhood Special Education, Collaborative Teacher (K-6), Collaborative Teacher (6-12), Communicative Sciences and Disorders Curriculum (NonTeaching). In addition, the department provides a series of service courses in art, developmental reading, health and physical education and music education. Other services provided include the University choir and University band.


#### Abstract

MISSION

The mission of the Department of Curriculum and Instruction includes the preparation of instructional personnel for working with learners of all ages, infancy through adulthood. A major emphasis is teacher certification programs for persons seeking to teach in public school settings. Additional responsibilities include preparing personnel to teach in private kindergartens, day care centers and education programs. Training focuses upon curriculum studies and the appropriate instructional methodologies for each population served.

More specifically, the department endeavors to provide a scholarly environment in which inquiring and discriminating minds may be nourished; to education students for effective knowledge through research and its application; to provide educational programs and services to fit the changing needs of the larger community, and to address the special needs of students who have been disadvantaged by systems and circumstances which have inhibited their educational and social growth.


## OBJECTIVES

The objectives of the department are as follows:

1. to prepare students to meet Alabama Certification Standards in designated teaching fields as well as to meet the criteria for non-teaching fields;
2. to prepare students for competency in communication skills;
3. to prepare professionals to meet the needs of students who are socially, culturally, and ethnically diverse;
4. to prepare students to develop a lifestyle which demonstrates desirable physical, emotional, and intellectual habits;
5. to prepare students to demonstrate an awareness of the need to remain current in their related teaching fields;
6. to prepare students to demonstrate the ability to plan, organize, implement and evaluate educational programs;
7. to continuously monitor the progress of students and to assess program effectiveness;
8. to prepare students to compete in a Global Society; and
9. to prepare students to effectively use instructional technology.

# ART AND ART EDUCATION PROGRAM AREA 

Morrison Building
First and Second Floors

## OBJECTIVES

## MINIMUM GRADE REQUIREMENTS

Art majors in teaching and non-teaching areas must earn a grade of "C" or above in all art courses. Students will be required to repeat any art course within the program when the minimum grade of "C" is not achieved. Further, students should be cautioned that art courses are usually offered once a year and some art courses are offered once every other year with the exception of ART 101, Art Appreciation, and ART 201, Teaching Art in the Elementary School.

## ART MAJOR (P-12)

Teaching Option - 127 Semester Hours

## Freshman Year

First Semester
$\begin{array}{lll}\text { ORI } 101 & \text { Survival Skills } \\ \text { ENG 101 } & \text { Composition I } \\ \text { MTH 112 } & \text { Pre-Calculus Algebra }\end{array}$

Sem. Hrs.
1

3
3

Sem. Hrs.
3
$\begin{array}{llll}\text { MUS } & 101 & \text { Music Appreciation } & 3 \\ \text { ART } & 200 & \text { Comp. With Drawing } & 3\end{array}$

| ART | 110 | Fund. of Drawing | 3 | ART | 121 | Three Dimensional Drawing | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| HED | 101 | Personal \& Comm. Health | 2 | PED |  | PE Activities | 2 |
| ART | 111 | Two Dimensional Draw. | $\underline{3}$ | HIS | 101 | World History I | $\underline{3}$ |
|  |  |  | 15 |  |  |  | 17 |

## Sophomore Year

First Semester

| ENG | 203 | World Literature I | 3 |
| :--- | :--- | :--- | ---: |
| ART | 298 | Intro. To Photography | 3 |
| PHY | 101 | Physical Science I | 3 |
| PHY | 101L | Physical Science Lab |  |
| HIS | 203 | Fnd. of American His/Gov | 3 |
| ART | 220 | History of Art II | 16 |

First Semester

| ART | 315 | Beginning Sculpture | 3 | ENG 205 | General Speech | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ECO | 200 | Basic Economics | 3 | EDU | 311 | Human Growth and Development |
| ART | 312 | Beginning Painting | 3 | ART |  | Elective (Upper Level) |

## Senior Year

First Semester

| EDU | 401 | His. \& Phil. of Educ. | 3 |
| :--- | :--- | :--- | ---: |
| EDU | 403 | Educational Psychology | 3 |
| EDU | 409 | Reading in Content Area | 3 |
| EDU | 411 | Instructional Technology | 3 |
| EDU | 402 | Tests \& Measurements | $\underline{3}$ |
|  |  | 15 |  |
| Electives. |  |  |  |

Second Semester
ENG 204 World Literature II 3
EDU 102 Intro to Teacher Education 3
ART 201 Teaching Art in Elem School 3
BIO 101 General Biology 3
BIO 101L General Biology Lab 1
ART 221 History of Art II $\underline{3}$

Junior Year

## Electives:

Students majoring in Art Education (P-12) must elect art courses which will total six (6) semester hours. The following courses are options.

| Course Number | Course Title | Sem. Hrs. |
| :---: | :---: | :---: |
| ART 309 | Figure Drawing | 3 |
| ART 202 | Beginning Fibers | 3 |
| ART 204 | Advanced Fibers | 3 |
| ART 299 | Photography II | 3 |
| ART 306 | Advanced Ceramics | 3 |
| ART 307 | Beginning Jewelry | 3 |
| ART 308 | Advanced Jewelry | 3 |
| ART 313 | Watercolor Painting | 3 |
| ART 314 | Advanced Painting | 3 |
| ART 316 | Advanced Sculpture | 3 |
| ART 321 | Fundamentals of Printmaking: Lithography \& Serigraphy | y 3 |
| Course Number | Course Title $\underline{\text { S }}$ | Semester Hours |
| ART 400 | Independent Art Investigation | 3 |
| ART 412 | Origins in Modern Art | 3 |
| ART 414 | African American Art | 3 |

ART MAJOR<br>Non-Teaching Option

## COMMERCIAL AND ADVERTISING ART <br> 127 Semester Hours

## PROGRAM DELINEATION

The Art and Art Education Program offers the Bachelor's of Science degree with a non-teaching option in commercial and advertising art. The program in commercial art serves those students who do not elect teaching careers in art or professional careers in any area of the fine arts, but who are interested in acquiring skills to prepare for the fields of advertising and communication graphics.

Freshman Year

## First Semester

| ORI | 101 | Survival Skills | 1 |
| :--- | :--- | :--- | :--- |
| ENG | 101 | Composition I | 3 |
| PHY | 101 | Physical Science I or | 3 |
| BIO | 101 | General Biology I | 3 |
| PHY | 101L | Physical Science I Lab or | $\mathbf{1}$ |
| BIO | 101L | General Biology I Lab | $(1$ |
| ART | 110 | Fund. Of Drawing | 3 |
| MTH | 112 | Pre-Calculus Algebra | 3 |

## Sophomore Year

| First Semester | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |  |  |
| :--- | :--- | :--- | :---: | :---: | :--- | :---: | :---: |
| ENG | 203 | World Literature | 3 | PSY | 201 | General Psychology | 3 |
| PED |  | Physical Education Activity | 1 | HIS | 102 | World History II | 3 |
|  |  |  |  |  |  |  |  |
| HIS | 101 | World History I | 3 | ENG | 204 | World Literature II | 3 |
| ART | 111 | Two Dimensional Design | 3 | PED |  | Physical Education Activity | 1 |
| ART | 298 | Intro. To Photography | 3 | ART | 121 | Three Dimensional Design | 3 |
| ART | 309 | Figure Drawing | $\underline{3}$ | ART | 211 | Color in Design | $\underline{3}$ |
|  |  |  | 16 |  |  |  | 16 |

## Junior Year

## First Semester

ENG 205 General Speech
ART 312 Beginning Painting 3
ART 320 Fund. of Printmaking 3
ART 220 History of Art I 3
Minor Requirement
UAH COURSE
ARS 230 Graphic Design I

Sem. Hrs. Second Semester
ECO 200 Basic Economics 3
ART 221 History of Art II 3
ART Elective 3
Minor Requirements 6
UAH COURSE
ARS 331 Graphic Design II
$\underline{3}$
18

## Senior Year

| First Seme |  | Sem. Hrs. | Second Semester |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Hrs |  |  |  |  |  |
| ART 408 | Internship | 3 | ART | Elective | 3 |
|  | Minor Requirements | 6 | ART 412 | Origins of Modern Art | 3 |
| UAH COURSE |  |  | ART | Elective | 3 |
| ARS 332 | Graphic Design III | 3 |  | Minor Requirement | 3 |
| ARS 430 | Adv. Graphic Design I | I $\underline{3}$ | UAH COUR |  |  |
|  |  | 15 | ARS 431 | Adv. Graphic Design II | $\underline{3}$ |
|  |  |  |  |  | 15 |

## MINOR PROGRAMS

The following six minor programs are designed to serve persons in fields outside of education, as well as those in program concentrations in education (for example, art education, special education, family and consumer sciences education, technology education, and others).

The art minors and semester hours follow:

| Art Therapy | 21 Semester Hours |
| :--- | :--- |
| Visual Arts | 21 Semester Hours |
| Crafts | 21 Semester Hours |
| Art History | 18 Semester Hours |
| Art Education | 21 Semester Hours |
| Commercial Art \& Advertising | 21 Semester Hours |

Following is a delineation of course requirements by minor:

## TITLE OF MINOR PROGRAM AND REQUIRED COURSES

## Art Therapy Minor

Required Courses (12 Semester Hours)

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| ART 110 | Fundamentals of Drawing | 3 |
| ART 111 | Two Dimensional Design | 3 |
| ART 201 | Teaching Art in the Elementary School | 3 |
| ART 419 | Arts and Crafts for the Atypical Child | 3 |

Students will elect nine semester hours from the following to complete the minor program. At least one course must be taken from Group A and one from Group B; the remaining three hours may be taken from either.

## Group A: Special Education Electives

| Course Number | Course Title | Sem. Hrs. |
| :--- | :---: | :---: |
| $*$ SPE 302 | Nature and Needs of the Mentally Retarded | 3 |

## Group B: Psychology Electives

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| *PSY 402 | Psychology of Adjustment | 3 |
| PSY 330 | Social Psychology | 3 |
| PSY 303 | Applied Psychology | 3 |
| *Recommended |  |  |
| Visual Art Minor |  |  |

Required Courses (18 Semester Hours)
Students who minor in art must take courses which will total twenty-one (21) semester hours, eighteen (18) of which are required. The remaining three (3) hours must be elected from regular art offerings.

Course Number
ART 110
ART 111
ART 121
ART 209
ART 220
ART 221
254

| Course Title | Sem. Hrs. |
| :--- | :---: |
| Fundamentals of Drawing | 3 |
| Two Dimensional Design | 3 |
| Three Dimensional Design | 3 |
| Composition with Drawing | 3 |
| History of Art I | 3 |
| History of Art II | 3 |

Fundamentals of Drawing 3
Two Dimensional Design 3
Three Dimensional Design 3
Composition with Drawing 3
History of Art I 3
History of Art II 3

## Art Electives

Students may elect three semester hours from the following to produce a total of 21 semester hours.

| Course Number | Course Title | Sem. Hrs. |
| :--- | :---: | :---: |
| ART 312 | Beginning Painting | 3 |
| ART 313 | Water Color Painting | 3 |
| ART 314 | Advanced Painting | 3 |
| Any beginning studio art course | 3 |  |
| Any art history course | 3 |  |

## Crafts Minor

Required Courses (18 semester hours)

## Course Number

ART 110
ART 111
ART 121
ART 202
ART 305
ART 307

## Course Title

Fundamentals of Drawing
Two Dimensional Design
Three Dimensional Design
Beginning Fibers
Beginning Ceramics
Beginning Jewelry

Sem. Hrs.
3
3
3
3
3
3

Students should elect three semester hours from the following to produce a total of twenty-one (21) semester hours.

Course Number
ART 204
ART 306
ART 308
ART 317
ART 318

Course Title
Sem. Hrs.
Advanced Fibers 3
Advanced Ceramics 3
Advanced Jewelry 3
Beginning Glassblowing 3
Advanced Glass Working 3
Advisor Approved Elective 3

## Art History Minor

Required courses ( 9 semester hours)
Students who minor in art history must complete a total of eighteen (18) semester hours, nine (9) of which are required.

Course Number
ART 220
ART 221

Course Title
History of Art I
History of Art II

Sem. Hrs.
3
3

Students must elect nine (9) hours from the following to complete eighteen (18) semester hours.

Course Number
ART 403
ART 404
ART 405
ART 409
ART 414

Course Title
Classical Art
Medieval Art
Renaissance Art
Primitive Art
African-American Art

## Sem. Hrs.

## Art Education Minor

(Teacher Education Majors may not elect an Art Education Minor.)
Students who minor in Art Education must take courses which will total twenty-one (21)semester hours of credit, twelve (12) hours of which are required. The remaining nine (9) hours may be elected during the sophomore, junior, and senior years. It is recommended that students consider ART 201, Teaching Art in the Elementary School, as part of the nine hours electives requirement.

## Freshman and Sophomore Years

| Course Number | Course Title | Sem. Hrs. |
| :--- | :---: | :---: |
| ART 110 | Fundamentals of Drawing | 3 |
| ART 111 | Two Dimensional Design | 3 |
| Art Electives |  | $\underline{3-6}$ |
|  |  | $9-12$ |

## Junior and Senior Years

## Course Number

ART 220
ART 221
Art Electives

Sem. Hrs.
History of Art I
3
History of Art II
3
3-6
9-12

## Electives:

Students who minor in Art Education should elect courses which total nine (9) hours of credit during the sophomore, junior and senior years from the following courses:

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| ART 209 |  | Composition with Drawing |
| ART 121 | Three Dimensional Design | 3 |
| ART 309 | Figure Drawing | 3 |
| ART 201 | Teaching Art in the Elementary School | 3 |
| ART 202 | Beginning Fibers | 3 |


| ART 204 | Advanced Fibers | 3 |
| :--- | :--- | :--- |
| ART 268 | Objective Rendering | 3 |
| ART 298 | Introduction to Photography | 3 |
| ART 299 | Photography II | 3 |
| ART 305 | Beginning Ceramics | 3 |
| ART 307 | Beginning Jewelry | 3 |
| ART 310 | Materials and Methods of Teaching Art | 3 |
| ART 312 | Beginning Painting | 3 |
| ART 315 | Beginning Sculpture | 3 |
| ART 320 | Fundamentals of Printmaking: Relief and Intaglio | 3 |
| ART 407 | Advertising Illustration |  |

## Commercial Art and Advertising Minor

Required courses (21 Semester Hours)

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| ART 110 | Fundamentals of Drawing | 3 |
| ART 111 | Two Dimensional Design | 3 |
| ART 298 | Introduction to Photography | 3 |
| ART 309 | Figure Drawing | 3 |

## UAH COURSES

| ARS 230 | Graphic Design I | 3 |
| :--- | :--- | :--- |
| ARS 331 | Graphic Design II | 3 |
|  | (Electives may be taken at A\&M or UAH) | 3 |

NOTE: It is recommended that a commercial art minor elect three hours of an art history.

## COURSE DESCRIPTIONS

ART 101 Art Appreciation - 3 hrs . A study of the visual and plastic arts with emphasis on their over-all relation to past and present cultures and discussion of the crafts and other applied arts. (Offered Fall, Spring, and Summer)

ART 110 Fundamentals of Drawing - 3 hrs. A fundamental visual vocabulary is acquired by learning to draw accurately from life. (Offered Fall)

ART 111 Two Dimensional Design - 3 hrs. The development of concise concepts of design and color use as a major design element. (Offered Fall)

ART 121 Three Dimensional Design - 3 hrs. An introduction to three dimensional design and the plastic arts. Through the use of the elements introduced in ART 111, students apply concepts of three dimensional design problems. Exposure to the elements of form and to a variety of approaches used by the contemporary sculptor is included. Various materials are employed. Prerequisite: ART 111 or consent of instructor (Offered Spring)

ART 201 Teaching Art in the Elementary School-3 hrs. The planning of art education programs to meet the needs of elementary schools. Provided are experiences with design and color, art materials and processes, and inquiry into child growth and development in art. Lecture, discussion, reading, and individual teaching are considered. Practicum is required. Prerequisite: Sophomore classification (Offered, Fall, Spring, and Summer)

ART 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. 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 - 3hrs. Emphasis is placed on controlling the composition of a two dimensional surface. The abilities to both accurately represent and abstract from life are developed. Prerequisite: ART 110 or concent of instructor (Offered Spring)

ART 211 Color in Design - 3 hrs. This course emphasizes psychological, physiological, and physical properties of color with experimental studio work in subjective and objective evaluations of color usage. Prerequisite: ART 110, ART 111, or consent of instructor (Offered Spring)

ART 220

ART 221 History of Art II - 3 hrs . A survey of the history of art from Renaissance times to present. This course presents a view of Renaissance through modern art. (Offered Spring)

ART 298 Introduction to Photography-3 hrs. An introduction to the basic techniques of black and white photography, including the exposure and processing of film and the making of contact prints and enlargements. Students are required to have their own cameras and exposure meter. (Offered Fall)

ART 299 Photography II - 3 hrs. Lectures and discussions of the history of still photography form the basis for problems solved through the use of photographic media. Emphasis is on composition and print quality as well as creative expression. Prerequisite: ART 298 or equivalent (Offered Spring)

ART 305 Beginning Ceramics - 3 hrs. An elementary course in pottery; studio exercises in hand-building pottery forms, throwing on the pottery wheel, decorating, glazing, and firing ceramic ware. Also included are exploration of texture, form, and function. Prerequisite: ART 110, ART 111, ART 120, ART 209, ART 121, or consent of instructor (Offered Spring)

ART 306 Advanced Ceramics - 3 hrs. A continuation of ART 305. Emphasis is placed on ceramic sculpture, wheel throwing, glazing, firing, decoration, and ceramic technology. Prerequisite: ART 110, ART 209, ART 121 and ART 305 or consent of instructor (Offered Fall)

ART 307 Beginning Jewelry - 3 hrs. A study of the methods, materials and processes of designing jewelry. The use of personal symbols, creativity, and techniques of metal fabrication by hand and machine
tools is emphasized. Prerequisite: ART 110 and ART 111 or consent of instructor (Offered Fall)

ART 308 Advanced Jewelry - 3 hrs. A continuation of skills and techniques introduced in ART 307, Beginning Jewelry. Special emphasis is placed on lost-wax casting and exploration and use of innovative materials in jewelry. Prerequisite: ART 307 or consent of instructor (Offered Spring)

ART 318

Figure Drawing - 3 hrs. The student studies artistic human anatomy, while drawing from live models in order to be able to use the human figure knowledgeably as part of artistic imagery. Composition with the human image is emphasized. Prerequisite: ART 110, ART 209, or consent of instructor. (Offered Fall)

Materials and Methods of Teaching Art - 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 or consent of instructor (Offered Fall)

Beginning Painting - 3 hrs. An introduction to the techniques of and creative processes in easel painting. Emphasis is placed on a variety of approaches and styles in contemporary painting. Prerequisite: ART 110, ART 111, ART 120 or consent of instructor (Offered Fall)

Water Color 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)

Advanced Painting - 3 hrs. Continuation of ART 312 and/or 313; the student is expected to attempt some development towards a unique and individual style in his or her work and to relate it to his or her personal philosophy of art. Prerequisite: ART 110, ART 209 or consent of instructor (Offered Spring)

Beginning Sculpture - 3 hrs. This course involves the examining of concepts relating to three dimensional design beyond the introductory level. Students will be exposed to a variety of sculpture processes and materials. Prerequisite: ART 110, ART 111, ART 209, or consent of instructor (Offered Fall)

Advanced Sculpture - 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 Spring)

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)

Advanced Glass Working - 3 hrs. A continuation of ART 317. Emphasis is placed on glass as a sculptural medium. This course involves exploration of casting, fusing, and slumping techniques. Cold glasswork is introduced, and a brief survey of glass history with emphasis on

American glass is also included. Prerequisite: ART 317 or equivalent or consent of instructor (Offered Fall)

ART $320 \quad$ Fundamentals of Printmaking: Relief and Intaglio-3 hrs. A workshop, which focuses on, the many graphic techniques involved in printmaking. Emphasis is divided between studio or fine arts graphics and those techniques specifically applicable to elementary and secondary classroom situations with an exploration of the techniques of photography. Prerequisite: ART 110, ART 111, ART 209 or consent of instructor (Offered Fall)

ART 321 Fundamentals of Printmaking: Lithography and Serigraphy-3 hrs. A workshop in beginning studio training in lithography and silk-screen color printing for fine art use, the emphasis of this course is divided between studio or fine art graphics and those techniques specifically applicable to secondary classroom situations. Prerequisite: ART 110, ART 111, ART 121, and ART 320 or consent of instructor (Offered Spring)

ART 400 Independent Art Investigation - 1-3 hrs. This course shall be available to all advanced art students who desire to continue work in any given area beyond the regular courses offered in the studios. Prerequisite: Junior or senior standing and completion of all regular courses in the desired program may be repeated for credit three times, for up to 9 credit hours, but no more than 3 credits per semester, or consent of instructor (Offered Fall, Spring and Summer)

ART 403 Classical Art - 3 hrs. A study of the art and architecture of ancient Greece and its influence on the development of the visual arts of the Roman Empire. Prerequisite: Consult advisor (Offered Spring)

ART 404 Medieval Art - 3 hrs. A study of the influence of Christianity on the art of the western world as expressed in early Christian, Romanesque, and Gothic architecture, sculpture, and painting. Prerequisite: Consult advisor (Offered Spring)

ART 405 Renaissance Art - 3 hrs. A study of the visual arts of Italy from 1250 to 1550, taking into consideration the rise of the artist as a creative individual and his expanding role in society. Prerequisite: Consult advisor (Offered Spring)

ART 406 Fashion Illustration - 3 hrs. This course focuses on developing originality and creative ability in the illustration of clothing with consideration of an individual's personality, figure type, age and occasion for which the clothing is to be worn. Prerequisite: ART 110, ART 209, ART 309, or consent of instructor (Offered Fall or Spring as needed)

Advertising Illustration - 3 hrs. This course develops the conceptual design and drawing skills used by professional illustrators. Prerequisite: ART 110, ART 209, ART 309 (Offered Spring)

ART 408 Internship - 3 hrs. Arranged actual work experiences in local businesses which help acquaint students with practical considerations which must be taken into account in production. Prerequisite: Junior level (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 412 Origins in Modern Art - 3 hrs. A survey of the history of painting and sculpture in the nineteenth century with their immediate genesis in the late eighteenth and immediate continuations in the first decades of the twentieth. Prerequisite: Consult advisor (Offered Spring)

ART 414 African-American Art - 3 hrs. The study of major events, personalities and influences germane to the creation of art by blacks in America, including visual slave themes. Pan-African art, "Black art" and blacks in mainstream art. Prerequisite: Consult advisor (Offered as needed)

ART 419 Arts and Crafts for the Atypical Child - 3 hrs. (For special education curriculum) Students evaluate materials and processes suitable for use with atypical children. Class activities will include experiences with color and design, drawing and crafts. Lectures, discussions, reports and films appropriate for the special program, are also included. Prerequisite: Consult advisor (Offered Summer)

ART 420
Advertising Thesis - 3 hrs . Independent concepts are produced and developed by the student in conjunction with his or her major professor. Prerequisite: Senior level (Offered Spring)

NOTE: 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.

The Art Department reserves the right to retain works of students majoring in art. These may be works done for credit in courses taken at Alabama Agricultural and Mechanical University.

## UNIVERSITY OF ALABAMA IN HUNTSVILLE COURSE DESCRIPTIONS

Students who select the non-teaching option in commercial and advertising art are required to take five graphic design courses at the University of Alabama in Huntsville. These courses are to be taken during the junior and senior years.

ARS 230 Graphic Design I - 3 hrs. Introduction to graphic design theories, principles and tools. Introduces stuents to the basics of graphic design through the practical understanding of visual communications theories, design principles, and logistics of advertising media, stressing traditional advertising communications techniques. Prerequisite: All lower-division foundation requirements or approval of instructors. Lab Fee: \$30 (Offered Fall)

ARS 331 Graphic Design II - 3 hrs. Continuation of ARS 330 plus an introduction to both production techniques and solutions. Included are the beginnings of computer assisted layout techniques using Adobe PageMaker. Prerequisite: ARS 330 or approval of instructor. Lab Fee: \$30 (Offered Spring)

ARS 332 Graphic Design III - 3 hrs. Layout and design on the Macintosh computer using Quark Xpress. Problems include the experience of designing newsletters, brochures, ads, letterheads, resumes, and business cards for a client. Prerequisite: ARS 331, or approval of instructor. Lab Fee: \$30 (Offered Fall)

ARS 430 Advanced Graphic Design I-3 hrs. Designing both graphics and illustrations using both Adobe Illustrator and an introduction to designing electronic fonts using Altsys Fontographer. Prerequisite: ARS 331 or approval of instructor. Lab Fee: \$30 (Offered Fall)

ARS 431 Advanced Graphic Design II-3 hrs. Using Adobe Photoshop as a tool for both for illustration and for pre-press work, plus an introduction to Fractal Design's Painter to make illustrations. Also included: final portfolio work. Prerequisite: ARS 331 or approval of instructor. Lab Fee: \$30 (Offered Spring)

## ELEMENTARY AND EARLY CHILDHOOD EDUCATION PROGRAM AREAS

Baccalaureate programs in Elementary Education and Early Childhood Education lead to Class B Certification.

Programs are designed to facilitate the development of effective teachers, principals, directors, and supervisors. Curricula are structured to provide students with 1) a thorough understanding of children and how they learn; 2) an interest in guiding youth to higher ideals and standards of living; 3) a deep consciousness of family and community needs; and 4) a motivation and life-long desire to continue to grow professionally and enrich their own lives, while influencing others to achieve optimum growth and development.

Advisors are assigned through the program area. Students are requested to check with advisors at least twice each semester. Majors should follow the latest State Department of Education's approved program because the AAMU Bulletin may not reflect recent changes. Regular advisement sessions will assure that students are following an approved program.

Courses offered in the program toward the student's major are considered professional education courses. The plan of study follows a recommended sequence for ultimate progress toward the degree. Students should 262
complete EDU 102, Introduction to Teacher Education; EDU 307, Principles of Teaching; and EDU 311, Human Growth and Development, before enrolling in any of the materials and methods courses. Transfer students who transfer as upper classmen may find it necessary to take EDU 102, EDU 307, and/or EDU 311 simultaneously with materials and methods courses, even though these courses are considered prerequisites. Transfer students must have advisor approval. Materials and methods courses, ECH 302, ECH 303, ECH 304, ECH 306, ECH 310, EDU 301, EDU 302, EDU 303, EDU 304, EDU 305, EDU 306, ELE 404, require a practicum in area schools. Scheduling a block time, preferably on Wednesdays, is essential in order to meet this requirement. Students may be required to provide their own transportation to practicum sites.

## ELEMENTARY EDUCATION PROGRAM

## GENERAL STUDIES

60 Semester Hours Required

## Humanities - 18 Semester hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| ENG 101 | Composition I | 3 |
| ENG 102 | Composition II | 3 |
| ENG 203 | World Literature I | 3 |
| ENG 204 | World Literature II | (or American Literature or English Literature) |

## Choose six (6) semester hours from the following:

Course Number

ART 101
MUS 101
ENG 205

Course Title

Art Appreciation or
Music Appreciation
General Speech

Sem. Hrs.

3
(3)

3

## Social Sciences-12 semester hours

| ECO 200 | Basic Economics | 3 |  |
| :--- | ---: | :--- | ---: |
| HIS | 101 | World History I | 3 |
| HIS | 203 | Foundations of American History \& Government or | 3 |
| HIS | 102 | World History | (3) |

## Choose 3 Semester Hours from the following:

## Course Number

Course Title
Sem. Hrs.
PSY 201
PHL 201 Introduction to Philosophy or 3

SOC 201 Introduction to Sociology

Nine (9) Semester Hours from the following:
Mathematics - 9 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| MTH 110 | Finite Math | 3 |
| MTH 112 | Pre-Calculus Algebra | 3 |
| MTH 113 | Pre-Calculus Trigonometry | 3 |

Science - 16 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| BIO 101 | General Biology I | 3 |
| BIO 101L | General Biology I Lab | 1 |
| BIO 102 | General Biology II | 3 |
| BIO 102L | General Biology II Lab | 1 |
| PHY 101 | Physical Science I | 3 |
| PHY 101L | Physical Science I Lab | 1 |
| PHY 102 | Physical Science II | 3 |
| PHY 102L | Physical Science II Lab | 1 |

## Health Education and Physical Education - 4 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| HED 101 | Personal and Community Health | 2 |
| PED | Advisor Approved Activities | 2 |

## Foundations of Professional Studies - 12 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| SPE 201 | Introduction to Exceptional Children | 3 |
| EDU 311 | Human Growth \& Development | 3 |
| EDU 401 | History \& Philosophy of Education | 3 |
| EDU 403 | Educational Psychology | 3 |
| Curriculum, Teaching, and Current Technology - 12 Semester Hours |  |  |
| Course Number | Course Title | Sem. Hrs. |
| EDU 102 | Introduction to Teacher Education | 3 |
| EDU 307 | Principles of Teaching | 3 |
| EDU 411 | Instructional Technology | 3 |
| SPE 326 | Management of Classroom Behavior | 3 |

## Teaching Field for Elementary Education - Minimum 27 Semester Hours

| Course Number | Course Title | Sem Hrs |
| :---: | :---: | :---: |
| EDU 301 | Materials \& Methods of Teaching |  |
|  | Language Arts in the Elementary School | 3 |
| EDU 302 | Materials \& Methods of Teaching |  |
|  | Social Studies in the Elementary School | 3 |
| EDU 303 | Materials \& Methods of Teaching |  |
|  | Science in the Elementary School | 3 |
| EDU 305 | Materials and Methods of Teaching |  |
|  | Mathematics in the Elementary School | 3 |
| ART 201 | Teaching Art in Elementary School | 3 |
| MUS 327 | Music Fundamentals for Classroom Teachers | 3 |
| ECH 312 | Creative Learning Experiences | 3 |
| EDU 412 | Children's Literature | 3 |
| NHM 404 | Fundamentals of Nutrition or | 3 |
| HDF 304 | Parenting | (3) |

## Evaluation of Teaching and Learning - 3 Semester Hours

Course Number Course Title Sem Hrs

EDU 402
Tests and Measurements

Teaching of Reading - 6 Semester Hours

| Course Number | Course Title | Sem Hrs |
| :--- | :--- | :---: |
| EDU 304 | Materials \& Methods of Teaching <br>  <br>  <br> Reading in the Elementary School |  |
| EDU 306 | Word Attack Techniques or <br> ELE 404 <br> Problems in Teaching Reading | 3 |
| Internship-9 Semester Hours |  |  |
| Course Number | $\underline{\text { Course Title }}$ | Sem Hrs |

## ELEMENTARY EDUCATION (K-6)

129 Semester Hours
Freshman Year

First Semester

| ORI | 101 | Survival Skills | 1 |
| :--- | :--- | :--- | :--- |
| ENG | 101 | Composition I | 3 |
| MTH | 112 | Pre-Calculus Algebra | 3 |
| BIO | 101 | General Biology I | 3 |
| BIO | 101 L | General Biology Lab I | 1 |
| HIS | 101 | World History I | 3 |
| HED | 101 | Personal \& Comm Health | 2 |
| ART | 101 | Art Appreciation or | 3 |
| MUS | 101 | Music Appreciation | $(\underline{3)}$ |

Second Semester
ENG 102 Composition II
MTH 113 Pre-Calculus Trig
BIO 102 General Biology II
BIO 102L General Biology Lab II
HIS 203 Fnd of Amer His/Govt or
HIS 102 World History
PED P E Activities
EDU 102 Introduction to Teacher Edu

## Sem. Hrs.

3
3
3
1
3
2
3
18

19

| First Semester |  | Sophomore Year |  |  |  | Sem. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Sem. Hrs. | Secon | d Sem | ester S |  |
| ENG 203 | World Literature I | 3 | ENG | 204 | World Literature II | 3 |
| PHY 101 | Physical Science I | 3 | PHY | 102 | Physical Science II | 3 |
| PHY 101L | Physical Science I Lab | 1 | PHY | 102L | Physical Science II Lab | 1 |
| PSY 201 | General Psychology or | (3) | EDU | 311 | Human Growth \& Development | 3 |
| PHL 201 | Intro to Philosophy or | (3) | SPE | 201 | Intro to Study of Except Children | 3 |
| SOC 201 | Intro to Sociology or | (3) | ENG | 205 | General Speech | $\underline{3}$ |
| ECO 200 | Basic of Economics | 3 |  |  |  | 16 |
| MTH 110 | Finite Math | 3 |  |  |  |  |
| EDU 307 | Principles of Teaching | 3 |  |  |  |  |

Junior Year

| First Semest |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| EDU 302 | M/M of Social Studies | 3 | EDU 301 | M/M of Language Arts | 3 |
| EDU 303 | M/M of Science \& Hlth | 3 | EDU 305 | M/M of Mathematics | 3 |
| EDU 304 | M/M of Teaching Reading | g 3 | EDU 306 | Word Attack Skills or | 3 |
| SPE 326 | Mgt of Classroom Behav | 3 | ELE 404 | Problems of Teaching Reading | (3) |
| ART 201 | Art for Elementary Sch | 3 | EDU 412 | Children's Literature | 3 |
| ECH 312 | Creative Learning | $\underline{3}$ | MUS 327 | Music for Class Teachers | 3 |
|  |  | 18 | NHM 404 | Nutrition for Early/Middle or | 3 |
|  |  |  | HDF 304 | Parenting | (3) |

Senior Year
First Semester
Sem. Hrs.
Second Semester
Sem.hrs.

| EDU | 401 | History and Philosophy | $\mathbf{3}$ |
| :--- | :--- | :--- | ---: |
| EDU | 402 | Test and Measurements | $\mathbf{3}$ |
| EDU | 403 | Educational Psychology | $\mathbf{3}$ |
| EDU | 411 | Instructional Technology | $\underline{3}$ |

## COURSE DESCRIPTIONS

EDU 102 Introduction to Teacher Education - 3 hrs . The primary thrust of this course is to expose the beginning student in education, through lectures, class discussions, outside readings, films, independent research, and practicums, to the basic problems of education today. Through observing, interacting and participating in actual classes, the student develops an understanding of the role of the classroom teacher. This course is a prerequisite course for professional methods and materials courses. Prerequisite: None (Offered Fall, Spring, Summer)

EDU 301 Materials and Methods of Teaching Language Arts in the Elementary School - 3hrs. This course provides for the study of materials and methods of teaching the language arts with special emphasis on child growth and development and on innovative methods and materials designed to teach listening, handwriting, spelling, reading, and children's literature. Some considerations will also be given to written composition and language usage at the primary and intermediate levels. Practicum required. Prerequisites: EDU 102, EDU 307, and EDU 311 (Offered Fall and Spring )

EDU 302 Materials and Methods of Teaching Social Studies - $\mathbf{3}$ hrs. This course provides for the study of materials and methods in social studies. Emphasis is placed on classroom planning. This course is intended to cover basic ideas and procedures that constitute sound instructional practices in teaching social studies. Practicum required. Prerequisites: EDU 102, EDU 307, sand EDU 311 (Fall and Spring)

EDU 303 Materials and Methods of Teaching Science and Health in the Elementary School - 3 hrs. In this course, investigations and evaluations will be made of instructional methods designed to challenge pupils at each level of their elementary science and health programs. The course will include such topics as the earth and universe, living things, matter and energy, magnetism and electricity, nutrition, hygiene, and other personal health components. Practicum required. Prerequisites: EDU 102, EDU 307, and EDU 311 (0ffered Fall and Spring).

EDU $304 \quad$ Materials and Methods of Teaching Reading in the Elementary School- $\mathbf{3}$ hrs. This course surveys current approaches to teaching reading to children.. It includes participation in teaching children to read in the practicum component. Practicum required. Prerequisites: EDU 102, EDU 307, EDU 311 (Offered Fall and Spring)

EDU 305 Materials and Methods of Teaching Mathematics in the Elementary School - 3 hrs. This course provides experiences in planning, using, and evaluating methods and materials of teaching number concepts and skills to children. It includes diagnosis of skill weaknesses and, planning. Practicum required. Prerequisites: EDU 102, EDU 307, and EDU 311 (Offered Fall and Spring)

EDU 306 Word Attack Techniques Skills - $\mathbf{3}$ hrs. This course presents the knowledge base of word attack instruction. It also provides principles, methods, and procedures for teaching the pronunciation and meaning of printed text. Students will gain experience, through the practicum component, in assessing the teaching of word attack strategies. Practicum Required Prerequisite: EDU102,EDU 307, EDU 311 (Offered Fall and Spring)

EDU 307 Principles of Teaching - 3 hrs. This course is organized to assist the student in gaining an understanding of current purposes, issues, and problems related to teaching-learning concepts. The student will develop the ability to conceptualize, construct, and evaluate behavioral objectives. This
course is a prerequisite for professional materials and methods courses. (Offered Fall, Spring, and Summer)

EDU 311 Human Growth and Development - 3 hrs. This course provides for a study 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, influences, and expectations. Attention will also be given to living and working in a multicultural society. This course is a prerequisite course for all professional and materials and methods courses. (Offered Fall, Spring, and Summer).

EDU 405 Seminar: Issues and Problems in Teaching - 3 hrs. This course provides for an analysis of current trends and problems in teaching. Subjects of contemporary interest will be explored in depth by students. Attention will be given to possible solutions for current problems in education. Practicum required. Prerequisite: EDU 102, EDU 307, EDU 311 (Offered Spring).

EDU 406 Directed Teaching Seminar - 9 hrs. This course consists of twelve weeks of full-time or approved private teaching under the immediate direction of supervising teachers in off-campus public schools. Students share their experiences, discuss problems, and develop new techniques in a professional seminar for the duration of the teaching experience. Prerequisite: Departmental Approval (Offered Fall and Spring) Weekly seminar is required

EDU 412 Children's Literature - 3 hrs. The emphasis of this course is on the selection of children's books in accordance with the needs and interests of elementary school children of various ages and reading levels. 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: EDU 102, EDU 307 EDU 311 (Offered Spring and Summer).

ELE 404 Problems in Teaching Reading - 3 hrs. This course investigates practices and trends in teaching of reading. There is an emphasis placed on techniques and materials for the identification of reading difficulties; and on diagnosis and remediation of reading difficulties. Consideration will be given to methods of individualizing for reading instruction. Prerequisite: ELE 304, EDU 102, EDU 307, EDU 311, (Offered Fall and Spring)

## EARLY CHILDHOOD DUAL CERTIFICATION*

OPTIONS:

1. Early Childhood Class B students seeking certification in Elementary Education must complete the following courses:
*Nine semester hours in EDU 406 or ECH 404 Directed Teaching (internship) must be completed in grades P-3 and K-3 to meet double certification requirements. Individuals must apply for each certification separately.

## EARLY CHILDHOOD EDUCATION REQUIREMENTS

## Humanities - 12 Semester Hours

Course Number
ENG 101
ENG 102
ENG 203
ENG 204

Course Title
Composition I
Composition II
World Literature I
World Literature II

Sem. Hrs.
3
3
3 3

Choose 6 semester hours from the following:
Course Number
ART 101
MUS 101
ENG 205

Course Title
Art Appreciation
Music Appreciation
General Speech

Sem. Hrs.
3
3
3

## Social Sciences - 12 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :---: | :---: |
| ECO 200 | Basic Economics | 3 |
| HIS 101 | World History I | 3 |
| HIS 203 | Foundations of American History /Government | 3 |

Choose 3 semester hours from the following:

| PSY 201 | General Psychology or | $(3)$ |
| :--- | :--- | :---: |
| PHL 201 | Introduction to Philosophy or | 3 |
| GEO 213 | Principles of Geography | 3 |
| GEO 214 | World Regional Geography | 3 |
| SOC 201 | Introduction to Sociology | 3 |
| Mathematics -9 Semester Hours |  |  |
| Choose 9 semester hours from the following: |  |  |

MTH 110 Finite Math 3
MTH 112 Pre-Calculus Algebra 3
MTH 113 Pre-Calculus Trigonometry 3

## Science - 16 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| BIO 101 | General Biology I | 3 |
| BIO 101L | General Biology I Lab | 1 |
| BIO 102 | General Biology II | 3 |
| BIO 102L | General Biology II Lab | 1 |
| PHY 101 | Physical Science I | 3 |
| PHY 101L | Physical Science I Lab | 1 |
| PHY 102 | Physical Science II | 3 |

## Health Education and Physical Education - 4 semester hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :---: | :---: |
| HED 101 | Personal and Community Health | 2 |
| PED | Advisor Approved Activities | 2 |

## Foundations of Professional Studies - 12 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| SPE 201 |  | 3 |
| EDU 311 | Introduction to Exceptional Children | 3 |
| EDU 401 | Human Growth \& Development | 3 |
| EDU 403 | History \& Philosophy | 3 |
|  | Education Psychology | 3 |

## Teaching Field - Minimum of 30 Semester Hours Required

| ECH 102 | Introduction to Early Childhood Education | 3 |
| :--- | :--- | :--- |
| ECH 304 | Language Arts Program /Early Childhood Ed | 3 |
| ECH 306 | Teaching Mathematics | 3 |
| EDU 412 | Children's Literature | 3 |
| ECH 302 | Science for Early Childhood | 3 |
| ECH 310 | Teaching Social Studies to Young Children | 3 |
| HDF 304 | Parenting | 3 |
| ECH 312 | Creative Learning Experiences for Young Child | 3 |
|  |  |  |
| ECH 405 | Organization \& Administrative of ECH Programs | 3 |
| NHM 404 | Nutrition for Early/Middle Childhood | 3 |

Curriculum, Teaching, and Current Technology - 12 Semester hours
EDU 102 Introduction to Teacher Education 3

EDU 307 Principles of Teaching 3
EDU 411 Instructional Technology 3
EDU 402 Tests and Measurements 3

Teaching of Reading - 6 Semester Hours
EDU $304 \quad \begin{aligned} & \text { Materials \& Methods of Teaching Reading in } \\ & \text { Elementary School }\end{aligned}$
EDU 306 Word Attack Techniques/Skills 3
Internship - 9 Semester Hours
ECH 404
Directed Teaching and Seminar

# EARLY CHILDHOOD EDUCATION (P-3) 

132 Semester Hours
Option: Dual certification in Elementary Education requires 6 additional semester hours
Freshman Year

| First Semester |  | Sem. Hrs. | Second Semester |  | Sem.Hrs |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ORI 101 | Survival Skills | 1 | ENG 102 | Communication Skills | 3 |
| ENG 101 | Communication Skills | 3 | MTH 113 | Pre-Calculus Trig | 3 |
| MTH 112 | Pre-Calculus Algebra | 3 | 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 | HIS 203 | Fnd of Amer His/Govt | 3 |
| HIS 101 | World History I | 3 | PED | P E Activities | 2 |
| HED 101 | Personal \& Comm. Health | th 2 | EDU 102 | Intro to Teacher Education | $\underline{3}$ |
| ART 101 | Art Appreciation or | 3 |  |  | 18 |

Sophomore Year
Sem. Hrs. Second Semester
Sem. Hrs
ENG 204 World Literature II 3
PHY 102 Physical Science II 3
PHY 102L Physical Science II Lab 1
ENG 205 General Speech 3
SPE 201 Intro to Study of Except Children 3
EDU 311 Human Growth \& Development

## Junior Year

First Semester
Sem. Hrs. Second Semester
Hrs.

| EDU | 306 | Word Attack Tech Skills | 3 |
| :--- | :--- | :--- | ---: |
| ECH | 303 | Early Childhood Ed: M/M | 3 |
| ECH | 310 | Teaching Soc Stud to | 3 |
|  |  | Young Children |  |
| EDU | 401 | History \& Philosophy of Ed | 3 |
| EDU | 402 | Tests \& Measurements | 3 |
| ECH | 302 | Science for ECH | $\underline{3}$ |
|  |  |  | 18 |

ELE 304 M/M of Teaching Reading 3
EDU 412 Children's Literature 3
ECH 304 Language Arts Program in ECH 3
ECH 306 M/M of Mathematics 3
HDF 304 Parenting 3
ECH 312 Creative Learning Experiences $\underline{3}$
18

## Senior Year

## First Semester

Sem. Hrs. Second Semester

Sem.
$\underline{9}$

## COURSE DESCRIPTIONS

ECH 102 Introduction to Early Childhood Education - $\mathbf{3}$ hrs. A study of early childhood education in today's world; career opportunities in the field; and basic concepts in living and working with children. Guided observation and limited participation hours will be arranged. This course is a prerequisite to all ECH materials and methods courses. (Offered Fall and Spring)

ECH 302 Science for Early Childhood - 3 hrs. Basic concepts in science and techniques for teaching these concepts to young children are covered in this course. Practicum required. Prerequisite: ECH 102 (Offered Fall and Spring)

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: ECH 102 (Offered Fall and Spring)

ECH 304 Language Arts Program in Early Childhood Education-3 hrs. A study of the development of communication and the use of symbols in infancy and early childhood. Practicum required. Prerequisite: ECH 102 (Offered Spring)

ECH 306 Teaching Mathematics - 3 hrs. Basic concepts in math and techniques for teaching these concepts to young children are covered in this course. Practicum required. Prerequisite: ECH 102 (Offered Fall and Spring)

ECH 310 Teaching Social Studies to Young Children - $\mathbf{3}$ hrs. A course which places emphasis on methods, materials and practices of teaching social studies to young children. Involves planning, writing and implementing a resource unit. Observation and participation of children in a classroom for young children are required. Prerequisite: ECH 102 (Offered Fall)

ECH 312 Creative Learning Experiences for Young Children-3 hrs. Creative experiences in art, music, drama, physical movement and activities such as finger plays, choral readings, and storytelling, plus many other learning activities related to teaching creativity in children are covered. This course stresses the use of materials, methods, and techniques used to teach and to foster creativity in children at an early age. (Offered Spring and Summer)

ECH 402 Creating \& Implementing Teaching Materials in Early Childhood Education - $\mathbf{3}$ 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: ECH 102 (Offered Summer, Fall, Spring)

ECH 404 Directed Teaching and Seminar - 9 hrs. Twelve weeks of full-time teaching in off-campus schools, kindergarten through third grade. Upon return to campus, the student will share experiences and discuss problems in seminars for the remainder of the semester. Prerequisite: Departmental approval (Offered Fall and Spring)

ECH 405 Organization and Administration of Early Childhood Education Programs - 3 hrs. A course which addresses the administration, organization and supervision of programs for infants and young children (P-3). (Offered Fall and Summer)

ECH $407 \quad$ Practicum in Groups of Young Children - 3 hrs . University-supervised practical experiences in working with young children in an on/off-campus public or private state accredited school, grade level p-3.

ECH 411 Teacher Education Workshops - 3 hrs. Selected topics related to early childhood programs and activities. (Offered Summer)

## MIDDLE SCHOOL EDUCATION

Middle School Education is designed for students who want to become teachers and who are interested in working with older-elementary school-aged children (or middle school-aged children). Details related to course requirements to complete an endorsement leading to certification in a subject content area is outlined in the latest State-approved program. Middle school endorsements are for students who hold a Class B Professional Certificate in elementary teaching. Endorsements are offered in general science, mathematics, language arts, and social studies. Students should see their advisor to obtain current information.

## Middle School/Junior High School Teaching Fields

General Science<br>English Language Arts<br>Mathematics<br>General Social Sciences_

## COURSE DESCRIPTIONS

EDU 301 Materials and Methods of Teaching Language Arts - 3 hrs. This course provides for the study of materials and methods of teaching the language arts, with special emphasis on child growth and development and on innovative methods and methods designed to teach listening, handwriting, phonics, spelling, reading, and children's literature. Some consideration will also be given to
written composition and language usage at the intermediate and middle school levels. Practicum required. Prerequisite: EDU 102 (Offered Spring)

EDU 302 Materials and Methods of Teaching Social Studies - 3 hrs. This course provides for the study of materials and methods in the social studies. Emphasis is placed on classroom planning for their use and implementation. This course is intended to cover basic ideas and procedures that constitute sound instructional practices in teaching social studies at the intermediate and middle school levels. Practicum required. Prerequisite: EDU 102 (Offered Fall and Spring)

EDU 305 Materials and Methods of Teaching Mathematics in the Elementary School and Practicum - 3 $h r s$. This course provides experiences in planning, using, and observing methods and materials of teaching number concepts and skills to children. It includes diagnosis of skill weakness, planning for teaching, and the actual tutoring of children. Practicum required. Prerequisite: EDU 102 (Offered Fall and Spring)

MSE 304 Methods of Teaching Reading in the Middle School and Practicum - 3 hrs. This course deals with the reading skills needed by the middle school student. It will emphasize techniques for diagnosing reading problems and for prescribing individualized programs for improvement. Practicum required. Prerequisite: EDU 102 (Offered Fall and Spring)

MSE 307 Principles of Teaching in the Middle School-3 hrs. This is an introductory course involving a study and analysis of the major factors and issues which underlie the middle school concept and the movement toward the middle school. It also includes organizational plans and grouping patterns. In addition, a study of the middle school curriculum, with emphasis on arrangement of instructional experiences to meet the educational needs of children representing a wide range of differences in many traits is undertaken as a part of this course. Prerequisite: EDU 102 (Offered Fall, Spring, and Summer)
MSE 308 Guidance for the Transescent Learner (Ages 10-15) - 3 hrs. Explores the feelings, overt behaviors, and biological needs of the transescent child. Interpretations, implication, and interventions with each level of behavior are reviewed. Also stressed is how to help the child cope with the myriad of problems confronting him or her in the middle school.

MSE 412 Literature for Youth - 3 hrs. In this course, emphasis is placed on the teacher's use and selection of books and related materials for children's pleasure and information. Techniques for building interest for reading, sharing reading, and methods of teaching, using children's books, are important aspects of the course. (Offered Spring and Summer)

MSE 422 Human Relations and Communications Seminar - 3 hrs. This course provides training for students in interpersonal communication skills, with an emphasis on perceiving and attending to surface and underlying feelings, responding with empathy, warmth, and respect, while integrating all of these dimensions into an effective life-style. Attention is given to developing strategies for mastering personal difficulties, as well as strategies for use with problem students, and so forth.

## HEALTH, PHYSICAL EDUCATION, AND RECREATION PROGRAM AREA

The Program Area of Health, Physical Education and Recreation provides course work and related activities leading to competencies in the areas of Health and Physical Education.

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.

The Program embraces sufficient scope in content and variety in activities to fully equip a prospective graduate with substantial educational orientation and activity skills to meet the demands of the profession. In this light, it desires to develop generally and, at the same time, lay a firm foundation for specialists in any areas which are included. The program offers areas of study leading to a Bachelor of Science degree in 1) Physical Education; and 2) Non-Teaching in Physical Education. Students completing the Bachelor of Science degree in Physical Education are eligible for the State of Alabama Class "B" Teacher Certificate.

## PHYSICAL EDUCATION (P-12)

130 Semester Hours
Freshman Year

First Semester

## First Semester

| ENG | 203 | World Literature I | 3 |
| :--- | :--- | :--- | :--- |
| CHE | 111 | Applied Chemistry I | 3 |
| CHE | 111 L | Applied Chemistry Lab I | 1 |
| SPE | 201 | Intro to Study Except Ch | 3 |
| PED | 122 | Soccer/Track | 1 |
| PED | 134 | Intermediate Swimming | 1 |
| PED | 137 | Golf | 1 |
| PED | 200 | Officiating I | 2 |
| PED | 225 | Ind, Dual, Team Sports I | 2 |
| PED | 115 | Floor Hockey/Basketball | $\underline{1}$ |


| ORI | 101 | Survival Skills | 1 | ENG | 102 | Composition II | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ENG | 101 | Composition I | 3 | HIS | 203 | Fnd of American His/Govt | 3 |
| MTH | 112 | Pre-Calculus Algebra or | 3 | HED | 101 | Personal \& Comm Health | 2 |
| MTH 110 | Finite Math | $\mathbf{( 3 )}$ | EDU | 102 | Intro. to Teacher Education | 3 |  |
| HIS | 101 | World History I | 3 | PED | 111 | Tennis | 1 |
|  |  |  |  |  |  |  |  |
| PED | 103 | Fitness for Life | 1 | PED | 127 | Gymnastics/Tumbling | 1 |
| ART | 101 | Art Appreciation or | 3 | BIO | 101 | General Biology | 3 |
| MUS | 101 | Music Appreciation | $\mathbf{( 3 )}$ | BIO | 101 L | General Biology Lab | 1 |
| PED | 110 | Flag Ftball/Wgt Trg | 1 | PED | 105 | Camping | $\underline{1}$ |
| PED | 138 | Softball/Volleyball | $\underline{1}$ |  |  |  | $\mathbf{1 8}$ |

## Sem Hrs

## Sem. Hrs.

## Sophomore Year

Second Semester
ENG 204 Wor
Sem. Hrs. Second Semester Sem.Hrs.

3 PSY 201 General Psychology 3 ECO 200 Basic of Economics 3 PED 117 Archery \& Bowling 1 PED 201 Officiating II 2 PED 206 Rhythms 2 PED 226 Ind, Dual, \& Team Sports II $\underline{2}$ $\stackrel{2}{16}$

## 18

Junior Year

## First Semester

| ENG | 205 | General Speech | 3 |
| :--- | :--- | :--- | :--- |
| BIO | 221 | Hum Anat. \& Physio | 3 |
| BIO | 221 L | Hum Anta. \& Physio Lab | 1 |
| EDU | 307 | Principles of Teaching | 3 |

## Sem. Hrs.

3
3
BIO 221L Hum Anta. \& Physio Lab 1
EDU 307 Principles of Teaching 3

Second Semester

EDU 311 Human Growth \& Development 3
PED 302 Foundations 2
PED 304 Anatomy \& Kinesiology 3
PED 306 M/M in Sec Physical Education 3

| PED | 301 | Administration | 3 | PED 312 | Evaluation in HPER |
| :---: | :---: | :---: | :---: | :---: | :---: |
| PED | 305 | M/M in Elem Phy Ed | 3 | PED 422 | Fund of Coaching/Intramurals |
| PED | 308 | Prevent/Care of Spt Inj | $\underline{2}$ |  |  |

## Senior Year

## First Semester

| EDU | 403 | Educational Psychology | 3 |
| :--- | :--- | :--- | :--- |
| PED | 409 | Physiology of Exercise | 3 |
| EDU | 409 | Reading in Content Area | 3 |
| EDU | 411 | Instructional Technology | 3 |
| PED | 410 | Atypical Students | 3 |
| PED | 412 | Motor Behavior | $\underline{3}$ |
|  |  |  | 18 |

EDU 408 Directed Teaching $\underline{9}$
9

## PHYSICAL EDUCATION (N-12)

## Non-Teaching Option

127Credit Hours
Freshman Year

| First Semester | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |  |
| :--- | :--- | :--- | :---: | :--- | :--- | :---: |
| ORI | 101 | Survival Skills | 1 | ENG 102 | Communication Skills | 3 |
| ENG | 101 | Communication Skills | 3 | MTH 113 | Pre-Calculus Trigonometry | 3 |
| BIO | 101 | General Biology I | 3 | ART 101 | Art Appreciation | 3 |
| BIO | 101L | General Biology Lab I | 1 | MUS 101 | Music Appreciation | 3 |
| HIS | 101 | World History I | 3 | CMP 101 | Fund of Comp \& Infor. Systems | $\underline{3}$ |
| PED | 103 | Fitness for Life | 1 |  |  | 15 |
| PED | 111 | Tennis | 1 |  |  |  |
| PED | 137 | Golf | 1 |  |  |  |
| HED | 101 | Personal \& Comm HIth | $\underline{2}$ |  |  |  |

## Sophomore Year

## First Semester

| ENG | 203 | World Literature I | 3 |
| :--- | :--- | :--- | :--- |
| CHE | 111 | Applied Chemistry I | 3 |
| CHE | 111 L | Applied Chemistry Lab I | 1 |
| ECO | 200 | Basic Economics | 3 |
| PED | 122 | Soccer/Track | 1 |
| PED | 134 | Intermediate Swimming | 1 |
| PED | 200 | Officiating I | 2 |
| PED | 225 | Ind, Dual, Team Sports I | $\underline{2}$ |

## Second Semester

ENG 204 World Literature II
PSY 201 General Psychology
PED 114 Aerobics/Weight Training
PED 138 Softball/Volleyball
PED 201 Officiating II 2
PED 206 Rhythms 2
PED 226 Ind, Dual, \& Team Sports II $\underline{2}$

Sem. Hrs.
3
3
1
3
1


First Semester
Sem. Hrs. Second Semester
SemHrs.

| SOC | 201 | Intro to Sociology | 3 | ENG 205 | General Speech | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| BIO | 221 | Hum Anat. \& Physio | 3 | PED 302 | Foundations | 2 |
| BIO | 221 L | Hum Anta. \& Physio Lab | 1 | PED 304 | Anatomy \& Kinesiology | 3 |
| PED | 301 | Administration | 3 | PED 312 | Tests and Measurements | 3 |
| PED | 305 | M/M in Elem Phy Ed | 3 | PED | Elective | 1 |
| PED | 308 | Prev Care Treatment Spt Inj 2 |  | Minor Electives | $\underline{6}$ |  |
|  |  | Minor Elective | $\underline{3}$ |  |  | 18 |

## Senior Year

| First Semester |  |  | Sem. Hrs. 3 | Second Semester |  |  | SemHrs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PED | 409 | Physiology of Exercise |  | PED 105 | Camping/Outdoor Education | 1 |  |
| PED | 410 | Atypical Students | 3 | PED 422 | Fund Coaching/Intramurals | 3 |  |
| PED |  | Electives | 2 | PED 445 | Internship | $\underline{9}$ |  |
|  |  | Minor Electives | $\underline{9}$ |  |  | 13 |  |
|  |  |  | 17 |  |  |  |  |

## Physical Education Electives:

Course Number
PED 113
PED 115
PED 116
PED 117
PED 132
PED 135
PED 309

## Course Title

Badminton/Table Tennis/Shuffleboard
Floor Hockey/Basketball
Contemporary Dance
Archery \& Bowling
Beginning Swimming/Aquatic Education
Advanced Swimming and Lifesaving
Psycho/Social Aspects of Physical Activity

## COURSE DESCRIPTIONS

HED 101 Personal and Community Health - 2 hrs. Health education is designed to broaden the student's background regarding facts and the principles necessary in the solution of several health issues. The course surveys a number of problems affecting individual, family, and community health. Prerequisite: None (Offered Fall, Spring and Summer)

HED 401 Substance Abuse \& HIV/AIDS - 2 hrs. A survey of alcohol and other drugs (AOD), and HIV/AIDS facts. Information will be provided on the short-and long-term effects of AOD and HIV/AIDS on the body, incidences of AOD use/addiction and HIV/AIDS, symptoms of AOD involvement and HIV/AIDS. Biological, social and behavioral factors affecting addiction and treatment of AOD and HIV/AIDS will be discussed. Resource information will be provided on community services for people who are addicted to AOD, and people with HIV/AIDS. Prerequisite: None (Offered Summer)

PED 103 Fitness For Life - 1 hr . This course acquaints all age groups with cardiovascular fitness, facts and fallacies regarding exercise and health and a number of evaluation techniques as each of these relate to physical and total conditioning. Students will develop and participate in personal fitness programs. Prerequisite: None (Offered Fall, Spring, and Summer)

PED 105 Camping/Outdoor Education - 1 hr. This course focuses on the total concept of life through living in the out-of-doors. Primitive, as well as modern, camping activities will be engaged in. Survival techniques will also be emphasized. Prerequisite: None (Offered Spring)

PED 110 Flag Football/Weight Training - 1 hr . This course includes rules, skills, techniques and application of these sports. The course provides opportunities for student participation at a personal level of intensity and enhancement of cognitive knowledge to promote lifetime participation. Prerequisite: None (Offered Fall)

PED 111

PED 113

PED 114

PED 115

PED 116

PED 117

PED 122

PED 127

PED 132

PED 134 Intermediate Swimming - 1 hr . A course designed to assist the student in developing the basic skills required to swim and perform safely in and around water. Special emphasis is given to the
basic laws of buoyancy and the specific learning and teaching techniques. A full explanation of the rules which governs water safety are also included. Prerequisite: None (Offered Fall)

PED 135 Advanced Swimming and Lifesaving - 2 hrs. The course includes advanced swimming and lifesaving techniques leading to Red Cross Certification. Prerequisite: PED 134 or equivalent (Offered Spring)

PED 137 Golf - 1 hr . This course is designed to provide the basic facts, principles, terminology, rules, helpful hints, safety hints, playing courtesies, and nature of the game and to prepare students for a enjoyable and successful game of golf. Prerequisite: None (Offered Fall, Spring, and Summer)

PED 138 Softball/Volleyball - 1 hr . This is a course provides instruction in the fundamental skills, playing strategies, and care and selection of equipment in the sports of volleyball and softball. Prerequisite: None (Offered Summer and Spring)

PED 200 Officiating $I-2 \mathrm{hrs}$. This course is designed to introduce you to the art and professional requirements of officiating intramural and athletic contests. The traditional fall/seasonal sports of flag football, basketball, wrestling, and volleyball are activities covered in this course. A weekly schedule for developing the necessary skills required of each sport is included. Prerequisite: None (Offered Fall)

PED 201 Officiating $I I-2$ hrs. A course concentrating on the art and professional requirements of officiating intramural and athletic contests. The traditional spring/seasonal sports of softball, baseball, tennis, and track and field are activities covered in this course. A weekly schedule for developing the necessary skills required of each sport is included. Prerequisite: None (Offered Spring)

PED 206 Rhythms - 2 hrs . This course is designed to assist you with developing the skills necessary to teach rhythmic activities/dance. The student will learn to organize materials and develop techniques that are essential to utilizing personal and general space. The student will develop coordination, self expression, creativity and endurance. Various concepts associated with basic loco motor and non-
locomotor movements are explained and experienced in detail. Prerequisite: None (Offered Spring)

PED 225 Individual, Dual, and Team Sports I-2 hrs. This is a course designed to provide students with basic knowledge and skills in a variety of sports. Emphasis will also be given to strategies for organizing, teaching and assessing student progress in each sport. Prerequisite: None (Offered Fall)

PED 226 Individual, Dual and Team Sports II - 2 hrs. This course focuses on the skill development, organizational strategies, instructional techniques and techniques for evaluating performance in a variety of individual, dual, and team sports. Prerequisite: None (Offered Spring)

PED 301 Administration - 3 hrs. This course is designed to assist the student in developing an insight into the meaning and organizational skills required for organizing and administering programs of physical education and/or other related programs. Specific strategies for selection, supervision, and evaluation of personnel, budgeting, and space utilization are included. The conduct of
programs within legal limits is given significant consideration. Prerequisite: None (Offered Fall)

PED 302 Foundations - 2 hrs . This course is designed to assist the student in developing an historical perspective of events and developments prior to and after 1885 in education and physical education. This course also includes the development of a personal philosophy of education and physical education through analysis of aims, goals, and principles. Prerequisite: None (Offered Spring)

PED 304

PED 305

PED 306

PED 307

PED 308

PED 312

PED 409

Anatomy \& Kinesiology - 3 hrs . This course is designed to provide the student with a broad background regarding mechanical and muscular aspects of human motion. In addition, the course provides you 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)

Materials and Methods in the Elementary Physical Education - 3 hrs. This course is designed to prepare students to teach physical education to children in grades K-6. It will use a developmental approach and stress exploratory methods of teaching young children a variety of games, dance, gymnastics, and health-related fitness activities. Practicum required Prerequisite: None (Offered Fall)

Materials \& Methods in the Secondary Physical Education - 3 hrs. This course is designed to assist in the development of skills necessary to teach secondary school physical education. The student will learn to organize materials and develop teaching techniques that are essential to the educational growth and development of each individual, through a guided program of physical activities. Practicum required. Prerequisites: PED 202, PED 204, PED 206, PED 125, and PED 126 (Offered Spring)

First Aid and CPR - 1 hr . A course in the immediate and temporary care that can be provided in emergency situations. Opportunity for the student's certification will be provided. Prerequisite: None (Offered Summer)

Prevention and Care/Treatment of Sports Injuries - 2 hrs . This course is designed to provide the student with the fundamental concepts of kinesiology and physiology. In addition, 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 and BIO 101L. (Offered Fall)

Tests and Measurements - 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. Prerequisite: None (Offered Spring)

Physiology of Exercise - 3 hrs . This course is designed to provide the student with a broad background regarding the physiological effects of physical activity on the human body. The course also includes a laboratory component to ensure a means for application and analysis by the student. Prerequisites: BIO 101, BIO 101L; and CHE 111, CHE 111L (Offered Fall)

PED 410 Atypical Student - 3 hrs. This course is designed for students to examine the role of physical education in meeting the special needs, interests, and abilities of students with various physical, social, mental, and emotional differences. Also provided is in-depth information regarding how to record medical histories, growth patterns, levels of motor learning, and how to design individualized physical education programs. Prerequisite: None (Offered Fall)

PED 412 Motor Behavior - 3 hrs. A study of neuromuscular development, perceptual motor skill development, and motor patterns which result in proficient movement in a variety of specific motor behaviors. The measurement, analysis, and evaluation of motor behavior will also be emphasized. Prerequisite: None (Offered Fall)

PED 422 Principles of Coaching/Intramurals - 2 hrs. An intense study of the specific aspects of coaching as a person and as a professional, based on sound theories and practices pertaining to athletic performance, athletic management, and relationships which are necessary for successful coaching. Prerequisite: None (Offered Spring)

PED 445 Externship - 9 hrs. This course is designed to give students an opportunity 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 496 Basketball Officiating workshop Two Man Mechanics - 2 hrs. This course will focus on the basic fundamentals of basketball officiating through the use of two-man mechanics. Emphasis will be placed on rules, mechanics, floor coverage, responsibilities, and terminology. Students will use the intramural department as a lab for practical experience. Prerequisite: None (Offered Summer)

PED 497 Basketball Officiating workshop Three Man Mechanics - 2 hrs. This course will focus on the basic fundamentals of basketball officiating through the use of three-man mechanics. Emphasis will be placed on rules, mechanics, floor coverage, responsibilities, and terminology. Students will use the intramural department as a lab for practical experience. Prerequisite: None (Offered Summer)

# MUSIC AND MUSIC EDUCATION PROGRAM AREA <br> Morrison Building 

## PROGRAM OBJECTIVES

The Music Program at Alabama A\&M University provides opportunities which assist individuals in meeting aesthetic, social, intellectual and professional needs and interests, in line with the general objectives of the University. The Bachelor of Science degree is awarded to music majors in teaching and non-teaching tracts.

## The program will:

1. provide a course of study whereby a student may receive a major in Music Education with the necessary subject matter competencies and skills to teach music subjects, direct choral and/or instrumental groups performing become knowledge about music business practices and generally to 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.
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 in a growing appreciation for the best in music through active participation in choral and instrumental ensembles.
5. act as a service agency to other departments and schools within the University and to adjacent communities.
6. increase the musical interest and capability of teachers, students and individuals in the community through the offering of special lectures, workshops, clinics, and similar endeavors.

## PROGRAM OFFERINGS

Music Education Tract

The Program in Music Education leads to the Bachelor of Science degree in music education with a concentration in instrumental or vocal/choral music. Either choice necessitates the completion of a senior recital and other requirements that are stated in this bulletin under the respective program curricula.

## SPECIAL INFORMATION

## Requirements for Music Majors and Minors

1. Applicants who desire to major in Music Education are required to take an entrance test and complete an audition to assess the extent of their musical proficiency. No student will be admitted as a major without showing evidence of sufficient preparatory training in at least one performing medium.
2. Unless granted special permission by the department chairperson, all students majoring in music education are required to take individual instruction in one area of musical performance throughout their undergraduate years. Therefore, each Music Education major must possess performing skills that can be nurtured to the highest possible quality and standard.
3. In addition to continual study in the major performing area, voice, string and instrumental majors in Music Education must study piano as an instrument for two or three consecutive years. At the end of the minimum required study period, instrumental, string and vocal majors will be given a proficiency test in piano. Keyboard majors in music education must take a minimum of three consecutive years of voice. During the second year of this study, small ensemble participation will be stressed. A vocal proficiency test is given after three years of study.
4. 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.
5. At the end of each semester, all music majors enrolled in applied music must sign up for jury performance on a prepared departmental schedule sheet. At the scheduled time, the student will play before the Music faculty.
6. All music majors are required to appear in a senior recital. A hearing of proposed selections will be held before the recital according to approved recital guidelines. (see music majors handbook).
7. It is further required that all majors participate in at least one of the larger musical organizations each semester of study and more ensembles when possible (except in very extraordinary situations). No one shall be exempted from this requirement.
8. Each vocal-choral major is urged to enroll in a foreign language class (French or German) for at least one year.
9. Semester by semester and year by year, music education majors must follow the checklist that has been approved by the Alabama State Department of Education.
10. For some individuals, more than four years may be needed to complete the total program in Music Education.
11. All Music Education majors must take classes according to the program written curriculum patterns.

## GRADUATION AND CERTIFICATION GUIDELINES

Beginning with the freshman year, all music majors will be advised by an assigned program advisor, or the program head. Majors should confer frequently with his/her advisor so that matters related to course requirements in the area of major concentration can be confirmed. During the first month of the semester preceding the one in which students expect to graduate, all music majors must meet with the program head and their advisor in conference(s) for an academic "record check." This checking process involves a complete analysis of all general education core courses and all major course requirements. Each student will use the checklist, which was current upon enrollment at the University.

VOCAL/CHORAL MUSIC (P-12)
(Piano and Voice Majors)
148 Semester Hours

Freshman Year

First Semester

| ORI | 101 | Survival Skills I | 1 |
| :--- | :--- | :--- | :--- |
| ENG | 101 | Composition I | 3 |
| MTH | 110 | Finite Math or | 3 |
| MTH | 112 | Pre-Calculus Algebra | $(3)$ |
| HIS | 101 | World History I | 3 |
| MUS | 103 | Music Theory I | 3 |
| MUS | 110 | University Choir I | 1 |
| MUS | 118 | Voice Class | 1 |
| MUS | 191 | Applied Music (Fretted Str) | 1 |
| MUS | 151 | Applied Music* (Major) or | $\underline{1}$ |
| MUS | 141 | (Perform Med) | 19 |


| Second Semester |  |  | SemHrs |
| :--- | :--- | :--- | :---: |
| ENG | 102 | Composition II | 3 |
| PHY | 101 | Physical Science I | 3 |
|  |  |  |  |
| PHY | 101L | Physical Science I Lab | 1 |
| ART | 101 | Art Appreciation | 3 |
| MUS | 104 | Music Theory II | 3 |
| MUS | 111 | University Choir II | 1 |
| MUS | 192 | Applied Music (Fretted Strings) | 1 |
| MUS | 152 | Applied Music* (Major Perform Med) | 1 |
|  | or |  |  |
| MUS | 142 |  |  |
| PED | 103 | Fitness for Life | 1 |
| HED | 101 | Personal and Comm. Health | $\underline{2}$ |

## Sophomore Year

First Semester
Sem. Hrs. Second Semester

| ENG | 203 | World Literature I | 3 |
| :--- | :--- | :--- | ---: |
| BIO | 101 | General Biology I | 3 |
| BIO | 101 L | General Biology Lab I | 1 |
| HIS | $\mathbf{2 0 3}$ | Found.of Amer. Hist \& Gov 3 |  |
| PSY | 201 | General Psychology | 3 |
| MUS | 110 | University Choir I | 1 |
| MUS | 141 | Applied Music I (Piano)** | 1 |
| MUS | 251 | Applied Music I (Voice) or | 1 |
| MUS | 241 | Applied Music (Piano Major) (1) |  |
| MUS | 205 | Music Theory III | 3 |
| MUS | 314 | Strings Class I | $\underline{1}$ |

ENG 204 World Literature II ..... 3
ENG 205 General Speech ..... 3
ECO 200 Basic of Economics ..... 3
EDU 102 Intro to Teacher Education ..... 3
MUS 111 University Choir II ..... 1
MUS 142 Applied Music II (Piano)** ..... 1
MUS 252 Applied Music II (Voice) or ..... 1
MUS 242 Applied Music (Piano) ..... 1
MUS 206 Music Theory IV ..... 3
MUS 315 String Class II ..... 119

## Junior Year

| First Semester | Sem. Hr |  |  |
| :--- | :--- | :--- | :--- |
| SPE | 201 | Intro to Study Excep Child | 3 |
| EDU | 307 | Principles of Teaching | 3 |
| MUS | 110 | University Choir I | 1 |
| MUS | 241 | Applied Music III (Piano) | 1 |
| MUS | 351 | Applied Music III (Voice)or | 1 |
| MUS | 341 | Appled Music (Piano) | $(1)$ |
| MUS | 303 | Music Liter \& History | 2 |
| MUS | 318 | Surv of Band Instruments | 2 |
| MUS | 291 | Applied Music (Fretted Str) | 1 |

Second Semester

## Sem. Hrs.

EDU 311 Human Growth \& Development 3
EDU 409 Reading in the Content Area 3
MUS 111 University Choir II 1
MUS 242 Applied Music IV (Piano) 1
MUS 352 Applied Music IV (Voice) or 1
MUS 342 Applied Music (Piano Majors) (1)
MUS 401 Music for Secondary School 2
MUS 403 Counterpoint (Elective) 2
MUS 292 Applied Music (Fretted Strings) 1

| MUS 301 | Music for Elementary Sch | 2 | MUS 335 |
| :--- | :--- | :--- | :--- | :--- |
| MUS 320 | Form and Analysis | $\underline{3}$ | MUS 304 |
|  |  |  | PED |

## Vocal-Choral Minor Requirements

(Non-Teaching, Non-Certification)
(Teacher Education Majors Cannot Minor in Music Education)
40 Semester Hours
Freshman Year

First Semester
MUS 110 University Choir I
MUS *Applied Music
*Major Performing Medium
Sem. Hrs.
1
1
$\frac{1}{2}$

First Semester
MUS 103 Music Theory I
MUS 110 University Choir I
MUS 118 Voice Class
MUS 318 Survey of Band Inst.

Sem.. Hrs.
3
1
1
2

| MUS | *Applied Music | $\frac{1}{8}$ |
| :--- | :--- | :--- |
| *Major Performing Medium |  | 6 |

## Junior Year

| First | Semester | Sem.. Hrs. |
| :--- | :--- | :---: |
| MUS | 110 | University Choir I |
| MUS | $\mathbf{2 0 5}$ | Music Theory III |
| MUS | Applied Music (Piano) | 1 |
| MUS | *Applied Music | 1 |
| MUS 303 | Music Hist. \& Lit. | $\underline{2}$ |
| *Major Performing Medium | 8 |  |


| Second Semester | Sem.. Hr |  |
| :--- | :--- | :---: |
| MUS 111 | University Choir II | 1 |
| MUS 206 | Theory IV | 3 |
| MUS | Applied Music (Piano) | 1 |
| MUS | *Applied Music | 1 |
| MUS 317 | Conducting | $\underline{2}$ |
|  |  | 8 |

## Senior Year

First Semester

| MUS 110 | University Choir |
| :--- | :--- |
| MUS | Applied Music(Piano) |
| MUS | *Applied Music |

*Major Performing Medium

Sem. Hrs.
1
1
$\frac{1}{3}$

6

*Major Performing Medium
*Major Performing Medium

## INSTRUMENTAL MUSIC (P-12)

(All Instruments Except Piano)
138 Semester Hours
Freshman Year

First Semester

| ORI | 101 | Survival Skills I | 1 |
| :--- | :--- | :--- | :--- |
| ENG | 101 | Composition I | 3 |
| MTH | 110 | Finite Math or | $\mathbf{3}$ |
| MTH | 112 | Pre-calculus Algebra | $(3)$ |
| HIS | 101 | World History I | 3 |
| PHY | 101 | Physical Science I | 3 |
| PHY | 101L | Physical Science Lab | 1 |
| MUS | 103 | Music Theory I | 3 |
| MUS | 120 | Univ. Marching Band or | 1 |
| MUS | 149 | String Ensemble | $(1)$ |
| MUS |  | Applied Music (Major | $\mathbf{1}$ |
|  |  | Perform Med) |  |
| MUS | 191 | Applied Music (Fretted Str) | $\underline{1}$ |

## Sem Hrs

ENG 102 Composition II 3
HIS 203 Found of Am. His/Gov 3
ART 101 Art Appreciation 3
MUS 104 Music Theory II 3
MUS 118 Voice Class 1
MUS 192 Applied Music (Fretted Strings) 1
MUS 121 University Symphonic Band or 1
MUS 150 String Ensemble (1)
MUS Applied Music (Major Perform Med) 1
PED 103 Fitness for Life 1
HED 101 Personal \& Comm. Health $\underline{2}$

Sophomore Year

| First Semes |  | Sem. Hrs. | Second Semester |  | SemHrs |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ENG 203 | World Literature I | 3 | ENG 204 | World Literature II | 3 |
| BIO 101 | General Biology I | 3 | ENG 205 | General Speech | 3 |
| BIO 101L | General Biology Lab I | 1 | EDU 102 | Intro to Teacher Education | 3 |
| ECO 200 | Basic of Economics | 3 | MUS 142 | Applied Music II (Piano) | 1 |
| PSY 201 | General Psychology | 3 | MUS 206 | Music Theory IV | 3 |
| MUS 141 | Applied Music I (Piano) | 1 | MUS 313 | Woodwinds - Double Reeds | 3 |
| MUS 205 | Music Theory III | 3 | MUS 121 | University Symphonic Band or | 1 |
| MUS 312 | Single Reed | 1 | MUS 150 | String Ensemble | (1) |
| MUS 120 | Univ. March Band or | 1 | PED | P E Activity | $\underline{1}$ |
| MUS 149 | String Ensemble | (1) |  |  | 18 |
|  |  | 19 |  |  |  |
| Junior Year |  |  |  |  |  |
| First Semester S |  | Sem. Hrs. | Second Semester |  | Sem |
| Hrs |  |  |  |  |  |
| SPE 201 | Intro to Study Excep Child | ld 3 | EDU 401 | History \& Philosophy of Education | 3 |
| EDU 307 | Principles of Teaching | 3 | EDU 409 | Reading in the Content Area | 3 |
| EDU 311 | Human Growth/Dev | 3 | MUS 292 | Applied Music (Fretted Strings) | 1 |
| MUS 291 | Applied Music (Fretted Str) | Str) 1 | MUS 210 | Lower Brasswinds | 1 |
| MUS 208 | Upper Brasswinds | 1 | MUS 212 | Percussion Class | 1 |
| MUS 303 | Music Liter \& History | 2 | MUS 304 | Music History \& Literature | 2 |
| MUS 314 | Strings Class I | 1 | MUS 315 | Strings Class II | 1 |
| MUS 320 | Form and Analysis | 3 | MUS 242 | Applied Music (Piano) | 1 |
| MUS 301 | Music for Elem Sch | 1 | MUS 401 | Music for Secondary School | 2 |
| MUS | Applied Music* | 1 | MUS | Applied Music* | 1 |
| MUS 120 | Univ. Marching Band or | 1 | MUS 121 | University Symphonic Band or | 1 |
| MUS 149 | String Ensemble | (1) | MUS 150 | String Ensemble | 1 |
|  |  | 19 |  |  | 17 |

## Senior Year

First Semester Sem. Hrs. Second Semester

## SemHrs

| EDU 402 | Tests and Measurements | 3 | EDU 408 | Directed Teaching | 9 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| EDU 403 | Educational Psychology | 3 | MUS 121 | University Symphonic Band or | 1 |
| EDU 411 | Instructional Technology | 3 | MUS 150 | String Ensemble | (1) |
| MUS 120 | Univ. Marching Band or | 1 | MUS | Applied Music* | 1 |
| MUS 149 | String Ensemble | (1) | MUS 317 | Conducting | 1 |
| MUS 316 | Conducting | 1 |  | Elective | $\underline{2}$ |
| MUS | Senior Recital | 0 |  |  | 14 |
| MUS | Applied Music* | 1 |  |  |  |
| HED 101 | Personal \& Comm. Health | 2 |  |  |  |
| MUS 241 | Applied Music | $\underline{1}$ |  |  |  |
|  |  | 13 |  |  |  |

## GENERAL ELECTIVES

| MUS | 124 | Percussion Ensemble | 1 |
| :--- | :--- | :--- | :--- |
| MUS | 126 | Jazz Band | 1 |
| MUS | 128 | Woodwind Ensemble | 1 |
| MUS | 130 | Brass Ensemble | 1 |
| MUS | 131 | Brass Ensemble | 1 |
| MUS | 406 | Instrumental Arranging | 2 |
| MUS | 408 | Survey of Black Music | 2 |
| MUS | 403 | Counterpoint | 2 |

Instrumental Minor Requirements<br>(Non-Teaching, Non-Certification) (Teacher Education Majors Cannot Minor in Music Education)

## First Semester

| MUS 120 | Marching Band |
| :--- | :--- |
| MUS 118 | Voice Class |
| MUS | *Applied Music |

*Major Performing Medium

## Freshman Year

## Sem. Hrs. Second Semester

| 1 | MUS 121 | Symphonic Band | 1 |
| :--- | :--- | :--- | :--- |
| 1 | MUS | *Applied Music | 1 |
| $\frac{1}{3}$ |  |  | $\frac{1}{3}$ |

## Sophomore Year

Sem.. Hrs. Second Semester

|  |  |  |
| :--- | :--- | :--- |
| First Semester |  |  |
| MUS | 103 | Music Theory I |
| MUS | 120 | Marching Band |
| MUS | 208 | Upper Brasswinds |
| MUS | 312 | Single Reeds |
| MUS | *Applied Music | 3 |
|  |  | 1 |

MUS 104 Music Theory IV 3
MUS 210 Lower Brasswinds 1
MUS 212 Percussion Class 1
MUS 313 Double Reeds 1
MUS *Applied Music 1
MUS Applied Music (Piano)

Sem. Hrs.
1
1
1
3

Junior Year

First Semester
MUS 120 Marching Band
MUS 205 Music Theory III
MUS 316 Conducting I
MUS *Applied Music
MUS 303 Music Hist. \& Lit.

Sem. Hrs.
1
3
1
1
$\underline{2}$
8

Second Semester
MUS 121 Symphonic Band
MUS 206 Music Theory IV
MUS 317 Conducting II
MUS *Applied Music
MUS 314 String Class

Sem. Hrs.

## 1

3
3
1
1
1
7
*Major Performing Medium

## Senior Year

## First Semester

$\begin{array}{lr}\text { MUS } & 120 \\ \text { Marching Band } \\ \text { MUS } & \text { *Applied Music }\end{array}$
*Major Performing Medium

Sem. Hrs.
1
$\frac{1}{2}$

Second Semester
MUS 121 Symphonic Band
MUS *Applied Music

## Sem. Hrs.

1
$\frac{1}{2}$

## COURSE DESCRIPTIONS FOR MUSIC MAJORS AND MINORS

MUS 103 Music Theory I - 3 hrs. This course is arranged to provide training in music theory and fundamentals of sight singing. Melodic and rhythmic dictation and keyboard are administered to further provide laboratory experiences for musical growth. Prerequisite: None (Offered Fall)

MUS 104 Music Theory II - 3 hrs. A continuation of MUS 103. More advanced aural, visual, and theoretical subjects are studied. Prerequisite: MUS 103. (Offered Spring)

MUS $118 \quad$ Voice Class - 1 hr . The essentials of voice production, breath control, and diction are stressed. The student is given a chance to critically observe classmates and to observe successful vocalists through the use of multimedia resources. Several compositions are assigned each semester to all students enrolled, in order to develop mastery of vocal essentials. A competency-based approach to instruction is used. Prerequisite: None. (Offered Fall)

MUS 120 University Marching Band - 1 hr . This course is designed to give students training and experience in playing various instruments in marching formation techniques and field pageantry. The Marching Band makes frequent public appearances on and off campus. During football season, it provides half-time entertainment and aesthetic exposure of the highest quality. The Band also
participates in national and state observances and often shares its talents with adjacent communities during holiday periods. Prerequisite: Audition (Offered Fall)

MUS 121 Symphonic Band - 1 hr . This course is designed for the Spring and/or Summer semesters. The organization strives for superb musicianship and is presented in several concerts during the second semester on and off- campus. Prerequisite: Audition during the First Semester (Offered Spring and Summer).

MUS 205 Music Theory III - 3 hrs. This course consists of a study of diatonic seventh chords and their inversions, harmonization of melodies and figured bass lines, and the use of dominant sevenths in four-parts writing. Melodic, harmonic and dictation is included. Analytic techniques are studied through various Classical and Romantic compositions. Prerequisites: MUS 103 and MUS 104 (Offered Fall)

MUS 206 Music Theory IV - 3 hrs. Borrowed chords, secondary dominants, and other chromatic harmonies studied. Other topics include fundamentals of orchestration, ninths, elevenths and
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 . This course focuses on sight reading, technique, tone and other factors necessary for competency with upper brasswinds. (Laboratory fee). Prerequisite: None (Offered Fall)

MUS 210 Lower Brasswinds Class - 1 hr . Designed for the study of instruments which fall into the general category of lower brasses, the class is intended to give the student broad experiences with developing knowledge and pedagogy about these instruments. (Laboratory fee). Prerequisite: MUS 208 (Offered Spring)

MUS 212 Percussion Class - 1 hr . Snare drumming rudiments are emphasized. Tympani fundaments such as pedal and hand tuning, and other matters related to percussion techniques, are covered in this course. (Laboratory Fee). Prerequisite: None (Offered Spring)

MUS 301 Music for Elementary Schools - 2 hrs. This course provides students with basic knowledge and experience necessary for handling music activities at the upper and lower-grade elementary school levels as well as at the middle school level. Songs, singing, games, rhythmic and creative activities, dramatizations and suitable recordings are stressed. Students are afforded the opportunity to develop skills with melody and chording instruments. Attention is given to developing skills with melodies and chording instruments and to special instructional approaches for providing musical learning to atypical children. (For music majors and minors only). Prerequisites: None (Offered Fall)

MUS 303 Music History and Literature I-2 hrs. A general survey of music history from the tenth century to the Baroque era. Social and political data, art, and literature are correlated with certain phrases of the course. Listening is a very significant part of this course. Prerequisites: MUS 103, MUS 104, MUS 205, and MUS 206 (Offered Fall)

MUS 304 Music History and Literature II - 2 hrs. Special emphasis is placed on contributions from the Classical, Romantic and Contemporary eras. Listening is a major component of the course also. Prerequisite: MUS 303. (Offered Fall)

MUS 312 Woodwinds Class (Single Reeds) - 1 hr . The student is introduced to single-reed woodwinds, along with applicable pedagogy and literature. (Laboratory fee). Prerequisites: Junior classification, major or minor (Offered Fall)

MUS 313 Woodwinds Class (Double Reeds) - 1 hr . The student is introduced to double-reed woodwinds, along with applicable pedagogy and literature. (Laboratory fee). Prerequisite: MUS 312 (Offered Spring)

MUS 314 Strings Class I-1 hr. This is a practical performance course in string instruments. Elementary performing ability on violin, viola, cello, and string bass will be emphasized. Fundamentals of string playing and pedagogy are also taught. Prerequisite: For music majors only (Offered Fall)

MUS 315 Strings Class II - 1 hr . This is a practical performance course in string instruments. Intermediate performing ability on violin, viola, cello, and string bass will be emphasized.

Fundamentals of string playing and pedagogy are also taught. Prerequisite: MUS 314 (Offered Spring)

MUS 316 Conducting - 1 hr . In this course, the details of expression, score reading (choral and instrumental), words and symbols, program building, and other factors are emphasized. Prerequisite: None (Offered Fall)

MUS 317 Conducting - 1 hr . Serious attention is given to the more practical aspects of conducting as students are granted opportunities to direct various ensembles during rehearsals and public performances. Prerequisite: MUS 316 (Offered Spring)

MUS 318 Survey of Band Instruments - 2 hrs. The student who concentrates on vocal music is given an opportunity in this course to develop a basic knowledge of band instruments. He/she learns to use finger charts, and is given other important and useful information. Where possible, a "hands-on" approach is adopted. Some attention is given to fretted instruments. (Laboratory fee) Prerequisite: None (Offered Spring)

MUS 319 Introduction to Vocal Diction and Literature - 2 hrs. Solo and ensemble works from various periods in history by various American and international composers will be studied, to provide students with broad exposure through listening and performing. Prerequisites: MUS 103, MUS 104, and MUS 118. (Offered Spring)

MUS 320 Form and Analysis - 3 hrs. This course is an intense study of musical structure and design in Baroque, Classical, Romantic, and Contemporary compositions. Students analyze and compare small and large forms. Prerequisites: MUS 205 and MUS 206. (Offered Fall)

MUS 401 Music for Secondary Schools - 2 hrs. This course focuses on techniques for teaching music activities at the secondary level. Choral and instrumental repertoire, media techniques, the matter of public performance and the various essentials allied with them, as well as activities for the general music class are stressed. Attention is also given to the history, philosophy, curriculum and administration of music education in the secondary school. (Offered Spring)

MUS 403 Counterpoint - 2 hrs. This is a general course in the study and writing of $18^{\text {th }}$ century counterpoint. Score analysis and listening are included. (Offered Spring)

MUS 405 Choral Arranging - 2 hrs. In this course, the student will be introduced to the process of arranging music in various styles and for various vocal combinations. Prerequisite: MUS and MUS 206 (Offered Fall)

MUS 406 Instrumental Arranging - 2 hrs. Similar to a course in orchestration, the student will be introduced to the process of arranging music for various instrumental combinations and styles. Prerequisites: MUS 305 and MUS 306 (Offered Spring)

MUS 408 Survey of Black Music - 2 hrs. Persons enrolled in this course will become acquainted with the contributions of a number of African-American and Afro-Caribbean composers. Musical examples will be studied and stylistic characteristics identified. Prerequisite: None (Offered Spring)

## COURSE FEES

## GENERAL MUSIC COURSES

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

MUS 101 Music Appreciation - 3 hrs. Fundamentals of music such as melody, harmony, rhythm, form meter, and notation are included in this course. These elements take a deeper meaning as students are introduced to musical works, which portray them. The biographies of selected composers and some of their compositions are highlighted so as to enhance musical understanding. Literary and graphic arts are integrated to assist the student in correlating various cultural influences with music in certain times and places. Music listening is stressed and classroom activities are often coordinated with out-of-class assignments like television programs, lyceum attractions, student recitals and community concerts. Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 327 Music Fundamentals for Classroom Teachers - 3 hrs . Opportunity is provided to broaden music knowledge and to acquaint the student with basic theoretical principles required of teachers responsible for classroom music instruction. Special emphasis is placed on piano skills, conducting, developing skills with melody and chording instruments as well as fretted instruments. In this course, the student will acquire the basic knowledge and experience necessary for handling music activities at the upper and lower grade elementary school levels as well as at the middle school level. Songs, singing, games, rhythmic and creative activities, dramatizations and suitable recordings will be stressed. (Early Childhood, Elementary, and Special Education Majors Only). Prerequisite: None (Offered Fall, Spring, and Summer)

## MUSICAL ORGANIZATIONS

Students in all schools at the University are invited to enroll in any musical organization. Unless otherwise indicated, auditioning for the director of a specific group is the basic requirement. Merely enrolling as a member of an ensemble does not constitute complete acceptance nor guarantee continuous participation. If rehearsals, engagements, and other responsibilities are not approached with an attitude of loyalty, promptness and commitment, membership could be terminated. The size of the group might be a determining factor. The director of a specific group makes the final decision in all matters related to the functioning of each ensemble (and not the group officers, wherever these may exist).

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)

MUS 111 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)

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 110 or MUS 111. (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 110 or MUS 111. (Offered Spring and Summer)

MUS 115 Vocal Jazz Ensemble I-1 hr. This choral group is comprised of selected students who sing various vocal-jazz arrangements by different arrangers. Performances are on and off campus. Prerequisite: Audition (Offered Fall)

MUS 116

MUS 117

MUS 118

MUS 124

MUS 126

Vocal Jazz Ensemble II - 1 hr . This course is an extension of MUS 115. Selected arrangements are at an advanced level. Prerequisite: Audition (Offered Spring and Summer)

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.

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.

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)

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)

The Woodwind Ensemble - 1 hr . Woodwind instrumentalists with above average playing skill and experience, and cooperative attitude, a sense of dependability and punctuality, and good sight reading ability may contact the director for consideration as a member of the woodwind ensemble. (Offered Fall and Spring)

MUS 103-131 Brass Ensemble - 1 hr. Persons who play in this ensemble are selected on the basis of musical competence, which includes music-reading and playing skills. In addition, it is expected that all players will meet their responsibilities with punctuality and maturity. (Offered Fall and Spring)

MUS 120 University Marching Band - 1 hr. This course is designed to give students training and experience in playing various instruments in marching formation techniques and field pageantry. The Marching Band makes frequent public appearances on and off campus. During the football season, it provides half-time entertainment and aesthetic exposure of the highest quality. The Band also participates in national and state observances and often shares its talent with adjacent communities during holiday periods. Prerequisite: Audition (Offered Fall)

MUS 121 Wind Symphony/Symphonic Band - 1 hr. Symphonic Band is designed to have students perform a wide variety of symphonic band literature. Auditions are held at the close of the first semester athletic activities. This group is presented in several concerts during the second semester on the campus, as well as in other locales. The organization strives for superb musicianship. Prerequisite: Audition (Offered Spring and Summer)

MUS 149-150 String Ensemble. This performing organization for string players with playing experience. Auditions are required before enrolling. The group performs string literature from various musical eras on and off campus. (Offered Fall and Spring)


APPLIED MUSIC LISTING
In each instance where one enrolls in applied Music, the course number is to be written on the schedule of courses, plus the course title (Applied Music). The name of the specific instrument must be written in parenthesis beside the course title for each applied music course listed. COURSES MUST BE TAKEN IN SEQUENTIAL ORDER.

Any student enrolled in the University may begin or continue the study of an instrument within the Program. At each level in applies studies, assignments are made according to individual needs and rate of musical growth. 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
MUS 136
MUS 235
MUS 236
MUS 335
MUS 336
MUS 435
MUS 436

## Cello

MUS 137
MUS 138
MUS 237
MUS 238
MUS 337
MUS 338
MUS 437
MUS 438

## Double Bass

MUS 139

MUS 140

MUS 239

MUS 240

MUS 339

MUS 340

MUS 439

MUS 440

Applied Music I (Viola) - $\mathbf{1}$ hr. Assigned studies. Prerequisite: An audition. (Offered Fall) Applied Music II (Viola) - $\mathbf{1}$ hr. Assigned studies. Prerequisite: MUS 135 (Offered Spring) Applied Music III (Viola) - 1 hr. Assigned studies. Prerequisite: MUS 136 (Offered Fall) Applied Music IV (Viola) - 1 hr. Assigned studies. Prerequisite: MUS 235 (Offered Spring) Applied Music V (Viola) - 1 hr. Assigned studies. Prerequisite: MUS 236 (Offered Fall) Applied Music VI (Viola) - $\mathbf{1}$ hr. Assigned studies. Prerequisite: MUS 335 (Offered Spring) Applied Music VII (Viola) - 1 hr. Assigned studies. Prerequisite: MUS 336 (Offered Fall) Applied Music VIII (Viola) - 1 hr. Assigned studies. Prerequisite: MUS 435 (Offered Spring)

Applied Music I (Cello) - 1 hr. Assigned studies. Prerequisite: An audition. (Offered Fall) Applied Music II (Cello) - 1 hr. Assigned studies. Prerequisite: MUS 137 (Offered Spring) Applied Music III (Cello) - 1 hr. Assigned studies. Prerequisite: MUS 138 (Offered Fall) Applied Music IV (Cello) - 1 hr. Assigned studies. Prerequisite: MUS 237 (Offered Spring) Applied Music V (Cello) - 1 hr. Assigned studies. Prerequisite: MUS 238 (Offered Fall) Applied Music VI (Cello) - 1 hr. Assigned studies. Prerequisite: MUS 337 (Offered Spring) Applied Music VII (Cello) - 1 hr. Assigned studies. Prerequisite: MUS 338 (Offered Fall) Applied Music VIII (Cello) - 1 hr. Assigned studies. Prerequisite: MUS 437 (Offered Spring)

Applied Music I (Double Bass) - $\mathbf{1}$ hr. Assigned studies. Prerequisite: An audition. (Offered Fall)
Applied Music II (Double Bass) - 1 hr. Assigned studies. Prerequisite: MUS 139 (Offered Spring)
Applied Music III (Double Bass) - 1 hr. Assigned studies. Prerequisite: MUS 140 (Offered Fall)
Applied Music IV (Double Bass) - 1 hr. Assigned studies. Prerequisite: MUS 239 (Offered Spring)
Applied Music V (Double Bass) - 1 hr. Assigned studies. Prerequisite: MUS 240 (Offered Fall)
Applied Music VI (Double Bass) - 1 hr. Assigned studies. Prerequisite: MUS 339 (Offered Spring)
Applied Music VII (Double Bass) - 1 hr. Assigned studies. Prerequisite: MUS 340 (Offered Fall)
Applied Music VIII (Double Bass) - 1hr. Assigned studies. Prerequisite: MUS 439 (Offered Spring)

## Piano

MUS 141

Applied Music I (Piano) - 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. (Laboratory Fee). Prerequisite: . (Offered Fall only)

MUS 142 Applied Music II (Piano) - 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. (Laboratory Fee). Prerequisite: MUS 141 (Offered Spring, and Summer)

MUS 241 Applied Music III (Piano) - 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. (Laboratory Fee). Prerequisite: MUS 142 (Offered Fall only)

MUS 242 Applied Music IV (Piano) - 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. (Laboratory Fee). Prerequisite: MUS 241 (Offered Spring, and Summer)

MUS 341

MUS 443 Applied Music VI (Piano) - 1 hr. Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. (Laboratory Fee). Prerequisite: MUS 341 (Offered Spring, and Summer)

MUS 441 Applied Music VII (Piano) - 1 hr . Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. (Laboratory Fee). Prerequisite: MUS 342 (Offered Fall only)

MUS 444
Applied Music VIII (Piano) - 1 hr . Assigned studies. Emphasis is placed on the development of competent interpretation, thorough technique, skill at transposition, sight reading, and improvisation. A wide range of legitimate piano literature is studied. (Laboratory Fee). Prerequisite: MUS 441 (Offered Spring, and Summer)

## Voice

MUS 151 Applied Music I (Voice) - 1 hr . In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. (Laboratory Fee). Prerequisite: None. (Offered Fall only)

MUS 152 Applied Music II (Voice) - 1 hr . In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. (Laboratory Fee). Prerequisite: MUS 151 (Offered Spring, and Summer)

MUS 251 Applied Music III (Voice) - 1 hr . In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. (Laboratory Fee). Prerequisite: MUS 152 (Offered Fall only)

MUS 252 Applied Music IV (Voice) - 1 hr . In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. (Laboratory Fee). Prerequisite: MUS 251 (Offered Spring, and Summer)

MUS 351 Applied Music $V$ (Voice) - 1 hr . In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. (Laboratory Fee). Prerequisite: MUS 252 (Offered Fall only)

MUS 352 Applied Music VI (Voice) - 1 hr . In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. (Laboratory Fee). Prerequisite: MUS 351 (Offered Spring, and Summer)

MUS 451 Applied Music VII (Voice) - 1 hr. In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. (Laboratory Fee). Prerequisite: MUS 352 (Offered Fall only)

MUS 452 Applied Music VIII (Voice) - 1 hr . In this course, a concerted effort is made to introduce representative vocal works from all periods. Attention is given to tone production and placement, singing at sight, breath control, diction, stage poise, and the mastery of selected songs in foreign languages. Attention is also given to excerpts from oratorios and operas. (Laboratory Fee). Prerequisite: MUS 451 (Offered Spring, and Summer)

In the following applied music courses, basic technical principles are stressed in accordance with the student's current performance ability. Instructional strategies are chosen or designed thereafter to improve technical competence developmentally and to maximize the student's growth and technical proficiency, musical understanding, expressive performance and musical taste. The same degree of learning strategies are utilized in the areas of acquaintance with stylistic characteristics, musical chronology, and composer variety.

## Saxophone

MUS 155 Applied Music I (Saxophone) - 1 hr. Prerequisite: None (Offered Fall Only)
MUS 156 Applied Music II (Saxophone) - 1 hr. Prerequisite: MUS 155 (Offered Spring and Summer)
MUS 255 Applied Music III (Saxophone) - 1 hr. Prerequisite: MUS 156 (Offered Fall Only)
MUS 256 Applied Music IV (Saxophone) - 1 hr. Prerequisite: MUS 255 (Offered Spring and Summer)
MUS 355 Applied Music V (Saxophone) - 1 hr. Prerequisite: MUS 256 (Offered Fall Only)

| MUS 356 | Applied Music VI (Saxophone)-1 hr. Prerequisite: MUS 355 (Offered Spring and |
| :--- | :--- |
|  | Summer) |
| MUS 455 | Applied Music VII (Saxophone)-1 hr. Prerequisite: MUS 356 (Offered Fall Only) |
| MUS 456 | Applied Music VIII (Saxophone) - $1 \mathrm{hr} . \quad$ Prerequisite: MUS 455 (Offered Spring and <br>  <br> Summer) |

## French Horn

MUS 159
MUS 160

MUS 259
MUS 260
MUS 359
MUS 360

MUS 459
MUS 460

Applied Music I (French Horn) - 1 hr. Prerequisite: None (Offered Fall Only)
Applied Music II (French Horn) - 1 hr. Prerequisite: MUS 159 (Offered Spring and Summer)
Applied Music III (French Horn) - $\mathbf{1}$ hr. Prerequisite: MUS 160 (Offered Fall Only)
Applied Music IV (French Horn) - 1 hr. Prerequisite: MUS (Offered Spring and Summer)
Applied Music V (French Horn) - 1 hr. Prerequisite: MUS 260 (Offered Fall Only)
Applied Music VI (French Horn) - 1 hr. Prerequisite: MUS 359 (Offered Spring and Summer)
Applied Music VII (French Horn) - 1 hr. Prerequisite: MUS 360 (Offered Fall Only)
Applied Music VIII (French Horn) - 1 hr. Prerequisite: MUS 459 (Offered Spring and Summer)

## Trumpet

MUS 161 Applied Music I (Trumpet) - $1 \mathbf{h r}$. 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) - $\mathbf{1} \mathbf{h r}$. 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

MUS 391

MUS 392

MUS 491

MUS 492

Clarinet
MUS 171

MUS 172

MUS 271

MUS 272

MUS 371

MUS 372

MUS 471

MUS 472

Percussion
MUS 181
MUS 182
MUS 281
MUS 282

MUS 381

MUS 382

MUS 481

MUS 482

Tuba
MUS 183 Applied Music I (Tuba) - 1 hr. Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 488 Applied Music VIII (Bassoon) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall,

MUS 189 Applied Music I (Trombone) - 1 hr. Prerequisite: None (Offered Fall, Spring, and

MUS 489 Applied Music VII (Trombone)-1 hr. Prerequisite: Must be taken in sequence (Offered Fall,

MUS 184

MUS 283

MUS 284

MUS 383

MUS 384

MUS 483

MUS 484

Bassoon
MUS 187
MUS 188

MUS 287

MUS 288

MUS 387

MUS 388
MUS 487

Trombone

MUS 190
MUS 289

MUS 290
MUS 389
MUS 390
MUS

Applied Music II (Tuba) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music III (Tuba) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music IV (Tuba) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music V (Tuba) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VI (Tuba) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VII (Tuba) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VIII (Tuba) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

Applied Music I (Bassoon) - 1 hr. Prerequisite: None (Offered Fall, Spring, and Summer) Applied Music II (Bassoon) - $\mathbf{1} \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music III (Bassoon) - $\mathbf{1} \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music IV (Bassoon) - $\mathbf{1} \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music V (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer) Spring, and Summer) Summer)
Applied Music II (Trombone) - $\mathbf{1} \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music III (Trombone) - $\mathbf{1}$ hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer) Spring, and Summer)

MUS 490

## Euphonium

MUS 143
MUS 144

MUS 243

MUS 244
MUS 343

MUS 344
MUS 443

MUS 444

## Flute

MUS 145
Applied Music I (Flute) - $\mathbf{1}$ hr. Prerequisite: None (Offered Fall, Spring, and Summer)
MUS 146

MUS 245

MUS 246 Applied Music IV (Flute) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
MUS 345 Applied Music V (Flute) - $\mathbf{1}$ hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
MUS 346 Applied Music VI (Flute) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
MUS 445 Applied Music VII (Flute) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
MUS 446 Applied Music VIII (Flute) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

MUS 001 Independent Applied Music I-1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. - 1 hr. Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 021 Independent Applied Music II-1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 031 Independent Applied Music III - 1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. . Individuals whose musical status and/or achievement warrant
special assignments and special credit may enroll in this course. Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 041 Independent Applied Music IV-1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. . Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 174,274,374,474 Independent Music Study - 1,2, or 3 hrs. This course designed to meet the needs of special music students in special circumstances. Enrollment is possible only with permission of the program lead and chairperson Curriculum and Instruction.

MUS 174
Independent Music Study - 1-3 hrs. This course is designed to meet, the needs of special music students in special circumstances. . Enrollment is possible only with permission of the department chairperson. Prerequisite: None (Offered Fall and Spring)

Clarinet
MUS 171
MUS 172

MUS 271

MUS 272

MUS 371

MUS 372

MUS 471

MUS 472

## Percussion

MUS 181
Applied Music I (Percussion) - 1 hr. Prerequisite: None (Offered Fall, Spring, and Summer)
MUS 182

MUS 281

MUS 381

MUS 382

MUS 481 Applied Music VII (Percussion) - 1 hr . Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

MUS 482

## Tuba

MUS 183
MUS 184

MUS 283

MUS 284

MUS 383

MUS 384

MUS 483

MUS 484

## Bassoon

MUS 187
MUS 188

MUS 287

MUS 288

MUS 387

MUS 388

MUS 487

MUS 488

Trombone

MUS 389

Applied Music I (Tuba) - $\mathbf{1}$ hr. Prerequisite: None (Offered Fall, Spring, and Summer)
Applied Music II (Tuba) - 1 hr . Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music III (Tuba) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music IV (Tuba) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music V (Tuba) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VI (Tuba) - 1 hr . Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VII (Tuba) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VIII (Tuba) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

Applied Music I (Bassoon) - 1 hr. Prerequisite: None (Offered Fall, Spring, and Summer) Applied Music II (Bassoon) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music III (Bassoon) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music IV (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music V (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VI (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VII (Bassoon) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VIII (Bassoon) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

Applied Music I (Trombone) - $1 \mathbf{h r}$. Prerequisite: None (Offered Fall, Spring, and Summer)
Applied Music II (Trombone) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music III (Trombone) - $\mathbf{1} \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music IV (Trombone) - $\mathbf{1} \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music V (Trombone) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

MUS 390 Applied Music VI (Trombone)-1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
MUS 489 Applied Music VII (Trombone) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
MUS 490 Applied Music VIII (Trombone)-1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

## Euphonium

MUS 143
MUS 144

MUS 243

MUS 244

MUS 343

MUS 344

MUS 443

MUS 444

## Flute

Applied Music I (Euphonium) - 1 hr. Prerequisite: None (Offered Fall, Spring, and Summer)
Applied Music II (Euphonium) - $\mathbf{1} \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music III (Euphonium) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music IV (Euphonium) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music V (Euphonium) - $\mathbf{1}$ hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VI (Euphonium) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VII (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VIII (Euphonium) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

Applied Music I (Flute) - $\mathbf{1}$ hr. Prerequisite: None (Offered Fall, Spring, and Summer)
Applied Music II (Flute) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music III (Flute) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music IV (Flute) - $1 \mathbf{h r}$. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music V (Flute) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VI (Flute) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VII (Flute) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)
Applied Music VIII (Flute) - 1 hr. Prerequisite: Must be taken in sequence (Offered Fall, Spring, and Summer)

Independent Applied Music I -l-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. - 1 hr . Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 031 Independent Applied Music III-1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. . Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 041 Independent Applied Music IV - 1-3 hrs. This course, with fluctuating credit, is designed to meet the needs of special students. Individuals whose musical status and/or achievement warrant special assignments and special credit may enroll in this course. Prerequisite: None (Offered Fall, Spring, and Summer)

MUS 174 Independent Music Study - l-3 hrs. This course is designed to meet, the needs of special music students in special circumstances. Enrollment is possible only with permission of the department chairperson. Prerequisite: None (Offered Fall and Spring)

## SECONDARY EDUCATION PROGRAM AREA 216 Morrison Building

The Secondary Education curriculum provides the opportunity for pre-service and in-service teachers 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.

1. To provide secondary school pre-service teachers 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 secondary school pre-service teachers with competencies in the use of basic tools of education.
3. To provide secondary school pre-service teachers with the fundamental knowledge for performing in classroom situations in accordance with current professional thinking and research.
4. To provide secondary school pre-service teachers with opportunities to apply theory to practice in a real classroom situations under the direction of an in-service, practicing educator.
5. To provide curricula which will enable students 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 secondary school pre-service teachers with competence in instructional Technology and their subject areas (English, social studies, and mathematics, etc.)
8. To provide secondary school pre-service teachers with opportunities to develop professional competence in teaching subject area disciplines.
9. To provide secondary school pre-service teachers with opportunities to participate in interdisciplinary learning experiences.
10. All secondary education students are required to take certain specific general and professional courses, irrespective of their major teaching fields. The required general and professional education courses are listed as follows:

## GENERAL STUDIES PROGRAM

## Humanities - 18 semester hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| ENG 101 | Composition I | 3 |
| ENG 102 | Composition II | 3 |
| ENG 201 | Survey of English Literature I and | 3 |
| ENG 202 | Survey of English Literature II or | $(\mathbf{3 )}$ |
| ENG 203 | World Literature I and | $(3)$ |
| ENG 204 | World Literature II or | $(3)$ |
| ENG 301 | Survey of American Literature I and | $(3)$ |
|  |  |  |
| ENG 302 | Survey of American Literature II | $(3)$ |
| ART 101 | Art Appreciation or | 3 |
| MUS 101 | Music Appreciation | $(3)$ |

## Social Studies - 12 Semester Hours

| ECO 200 | Basic Economics | 3 |
| :--- | :--- | :--- |
| HIS 101 | World History | 3 |
| HIS 203 | Foundation of American History \& Government | 3 |
| PSY 201 | General Psychology | 3 |

## Natural and Physical Science, Including Mathematics - 12 Semester Hours

| MTH 110 | Finite Math | 3 |
| :--- | :--- | :--- |
| MTH 112 | Pre-Calculus Algebra | 3 |
| MTH 113 | Pre-Calculus Trigonometry | 3 |
| BIO 101 | General Biology I | 3 |
| BIO 101L | General Biology Lab | 1 |
| CHE 101 | General Chemistry I | 3 |
| CHE 101L | General Chemistry Lab | 1 |
| PHY 101 | Physical Science I | 3 |
| PHY 101L | Physical Science I Lab | 1 |
| PHY 102 | Physical Science II | 3 |
| PHY 102L | Physical Science II Lab | 1 |

## Health Education and Physical Education - 4 Semester Hours

| HED 101 | Personal and Community Health | 2 |
| :--- | :--- | :--- |
| PED | Physical Education Activities | 2 |

## PROFESSIONAL EDUCATION COURSES

## Humanistic and Behavioral Studies - 15 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| SPE 201 | Intro. to the Study of Except. Children | 3 |
| EDU 102 | Introduction to Teacher Education | 3 |
| EDU 311 | Human Growth \& Development | 3 |
| EDU 401 | History \& Philosophy of Education | 3 |
| EDU 403 | Educational Psychology | 3 |

## Curriculum and Teaching Media - 9 Semester Hours

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| EDU 307 |  | 3 |
| EDU 411 | Principles of Teaching | 3 |
| EDU | Instructional Technology | 3 |

## Teaching of Reading in Content Areas - 3 Semester Hours

EDU 409 Reading in the Content Areas
3

## Evaluation of Teaching and Learning - 3 Semester Hours

3

## Internship -9 Semester Hours

EDU 408
Directed Teaching9

The previously specified courses must be supplemented by course credits earned in two subject areas. A student is required to major in two different teaching areas, earning a minimum of 27 semester hours in each area. The secondary education major should be sure that his/her major areas are congruent. If major areas are not congruent, a longer period may be required for completion of the curriculum. Agriscience Technology, Business Education, General Science, Family and Consumer Sciences Education, Technology Education (formerly Industrial Art Education), Mathematics, and Technical (formerly Trade and Industrial Education) are considered comprehensive areas and do not require an additional concentration area. A single comprehensive teaching field in:

1. English Language Arts requires 24 hours in English, including composition, 6 semester hours in journalism, and 9 semester hours in language arts electives;
2. General Science includes 52 semester hours with no fewer than 12 semester hours in each of the following: biology, chemistry, earth and space science, and physics;
3. Generally Social sciences includes 15 semester hours in history, 9 semester hours in political science, 6 semester hours in each of 15 of the following: economics (minimum of two courses), sociology, and
geography, 3 semester hours in psychology, and 9 semester hours in social science elective, which must include a minimum of one, three-semester hour course in philosophy or one, three- semester hour course in anthropology;
4. Agriscience Technology must include courses in animal and agricultural mechanics, poultry and forestry;
5. The business and office education must include courses in business communication, office procedures, office machines, applied mathematics, business law, management and supervised laboratory experiences;
6. Family and Consumer Sciences must include courses in clothing and textiles, consumer education, housing--living environment, art individual and family living, and parenthood education, nutrition and parenthood, professional education and consumer sciences, and supervised laboratory experiences;
7. Mathematics must include courses in arithmetic and algebra, geometry, calculus, probability, statistics, linear and abstract algebra, discrete mathematics and computers;
8. Technical Education (formerly Trade and Industrial 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;
9. Technology Education (formerly Industrial Arts) 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.

## SPECIAL COURSE FEES

| Course Number | Course Title | Fees |
| :--- | :--- | ---: |
| EDU 402 |  | 5.00 |
| EDU 408 | Tests \& Measurements | 20.00 |
| EDU 102 | Directed Teaching | 7.50 |
| EDU 307 | Intro. To Teacher Education (Practicum) | 7.50 |
| EDU 424 | Principles of Teaching | 7.50 |
| EDU 411 | Materials and Methods of Tch. Science | 7.50 |
| EDU 421 | Instructional Technology | 7.50 |
| EDU 422 | Tchg of English in Secondary Schools | 7.50 |
| EDU 423 | Tchg of Mathematics in Sec. Schools | 7.50 |

## Agriscience Technology Education <br> 128 Semester Hours

| Freshman Year |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| First Semester |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| ORI 101 | Survival Skills I | 1 | ENG 102 | Composition II | 3 |
| ENG 101 | Composition I | 3 | MTH 112 | Pre-Calculus Algebra or | 3 |
| MTH 110 | Finite Math or | 3 | MTH 113 | Pre-Calculus Trig | (3) |
| MTH 112 | Pre-Calculus Algebra | (3) | CHE 101 | General Chemistry I | 3 |
| BIO 101 | General Biology I | 3 | CHE 101L | General Chemistry Lab I or | 1 |
| BIO 101L | General Biology Lab I | 1 | PHY 101 | Physical Science I | (3) |
| ART 101 | Art Appreciation or | 3 | PHY 101L | Physical Science I Lab or | (1) |
| MUS 101 | Music Appreciation | (3) | PHY 103 | General Physics I | (4) |
| PED | P E Activities | $\underline{2}$ | HED 101 | Personal \& Comm Health | 2 |
|  |  | 16 | HIS 101 | World History | $\underline{3}$ |
|  |  |  |  |  | 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 201 | Surv of English Lit or | (3) | ENG 202 | Survey of English Literature or | (3) |
| ENG 301 | Surv of American Lit | (3) | ENG 302 | Survey of American Literature | (3) |
| ENG 205 | General Speech | 3 | PSY 201 | General Psychology | 3 |
| HIS 203 | Fnd of Amer His/Govt | 3 | AGB 199 | Computers in Agriculture | 3 |
| EDU 102 | Intro to Teacher Edu | 3 | ECO 223 | Principles of Economics | 3 |
| AGB 211 | Basic Metals | 3 | AGB 212 | Woodworking and Machines | 3 |
| ANS 112 | Intro to Animal Science | 3 | SPS 170 | Intro. to Environmental Science | 3 |
|  |  | 18 |  |  | 18 |
|  |  |  | Junior Year |  |  |
| First Semester |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| EDU 307 | Principles of Teaching | 3 | AGB 301 | Electrical Systems and Machines | 3 |
| EDU 311 | Human Growth \& Devel | 13 | AGB 418 | Agricultural Leadership | 3 |
| SPS 251 | Intro to Soil Science | 3 | AGB 311 | Small Power Units \& Equipment | 3 |
| AGB 314 | Small Structure Construc | c 3 | SPE 201 | Intro to Study of Except. Child | 3 |
| SPS 281 | Intro to Forestry | $\underline{3}$ | SPS 323 | Plant Mtr. and Landscape | 3 |
|  |  | 15 | EDU 403 | Educational Psychology | $\underline{3}$ |
|  |  |  |  |  | 18 |
|  |  |  | Senior Year |  |  |
| First Semester S |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| EDU 402 | Tests \& Measurements | 3 | AGB 402 | Directed Teaching | 9 |
| EDU 411 | Instructional Technology | $y 3$ | EDU 401 | History/Philosophy of Education | 3 |
| EDU 409 | Reading in Content Area | a 3 |  |  | 12 |
| AGB 401 | Methods of Tchg Agri | 3 |  |  |  |
| AGB 421 | Agribusiness Mgt | $\frac{3}{15}$ |  |  |  |

## BIOLOGY EDUCATION

Biology Major- 127 Semester Hours
$2^{\text {nd }}$ Teaching Field Required -- 27-30 Semester Hours

## Freshman Year

| First Semester | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| ORI | 101 | Survival Skills I | 1 | ENG $\mathbf{1 0 2}$ | Composition II or 102 H | $\mathbf{3}$ |
| ENG | 101 | Composition I or 101 H | 3 | MTH 112 | Pre-Calculus Trig | 3 |
| MTH | 110 | Finite Mathematics | 3 | BIO | 102 | General Biology II |

## Sophomore

First Semester
Sem. Hrs.
ENG 203 World Literature I or 3
ENG 201 Surv of English Lit or (3)
BIO 221 Human Anatomy Phys. 3
BIO 221L Human Anatomy Phys. LabI 1
ART 101 Art or MUS Appr 1013
ECO 200 Basic Economics 3
PSY 201 General Psychology $\underline{3}$

| First | Semester | r Sem. Hrs. |  | Second Semester |  |  | Sem. Hrs |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| MTH | 113 | Pre-Calculus Trig | 3 | EDU | 307 | Principles of Teaching | 3 |
| PHY | 103 | General Physics I Lec/Lab | 4 | BIO | 311 | Principles of Genetics | 3 |
| EDU | 311 | Human Growth/Develop | 3 | BIO | 311L | Principles of Genetics Lab | 1 |
| BIO | 203 | General Botany I | 3 | EDU | 402 | Tests and Measurements | 3 |
| BIO | 203L | General Botany Lab I | 1 | BIO | 330 | Microbiology I | 3 |
| PED |  | P E Activity | 1 | BIO | 330L | Microbiology Lab I | 1 |
| ENG | 205 | General Speech | $\underline{3}$ |  |  |  | 14 |

Second Semester
ENG 204 World Literature II or 3
ENG 202 Survey of English Literature or
BIO 201 Invertebrate Zoology I 3
BIO 201L Invertebrate Zoology Lab 1
SPE 201 Intro to Study of Except Child 3
PHY 101 Physical Science 3
PHY 101L Physical Science Lab 1
HIS 203 Fnd. of American History/Govt $\underline{3}$
17

Junior Year
Sem. Hrs.
3

BD 311L Priples
BIO 330 Microbiology I 3
BIO 330L Microbiology Lab I 14

## Senior Year

## First Semester

Sem. Hrs. Second Semester
Sem. Hrs.

| BIO | 411 | Cell Biology | 3 | EDU 401 | History \& Philosophy of Education | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| BIO | 411 L | Cell Biology Lab | 1 | EDU 408 | Directed Teaching | $\underline{9}$ |
| EDU | 403 | Educational Psychology | 3 |  |  | 12 |
|  |  |  |  |  |  |  |
| EDU | 409 | Reading in Content Area | 3 |  |  |  |
| EDU | 424 | M/M Tchg Sci in Sec Sch | 3 |  |  |  |
| EDU | 411 | Instructional Technology | $\underline{3}$ |  |  |  |
|  |  | 16 |  |  |  |  |

## BUSINESS and OFFICE EDUCATION <br> 136 Semester Hours

Freshman Year

## First Semester

| ORI | 101 | Survival Skills I |
| :--- | :--- | :--- |
| ENG | 101 | Composition I |
| MTH | 110 | Finite Math |
| BIO | 101 | General Biology I |
| BIO | 101 L | General Biology Lab I |
| PED |  | P E Activity |
| HIS | 101 | World History I |
| ART | $\mathbf{1 0 1}$ | Art Appreciation |

Sem. Hrs.
1
3
3
3

Sem. Hrs.
3
MTH 112 Pre-Calculus Algebra 3
CHE 101 General Chemistry I 3
CHE 101L General Chemistry Lab I or 1
PHY 101 Physical Science I
PHY 101L Physical Science I Lab or
PHY 103 General Physics I
(3)
(1)
(4)

HED 101 Personal \& Community Health 2
EDU 102 Intro to Teacher Education 3
PED P E Activity $\underline{1}$
$1 \overline{6}$

## Sophomore Year

## Junior Year

First Semester
Sem. Hrs. Second Semester
MGT 332 Organizational Behavior 3
MGT 213 Computer Applications in Business 3
MGT 306 Principles of Marketing 3
TTE 301 Develop of Vocational Education

First Semester
Sem. Hrs. Second Semester

| ENG | 204 | World Literature II or | 3 |
| :--- | :--- | :--- | ---: |
| ENG | 202 | Survey of English Literature or | $(3)$ |
| ENG | 302 | Survey of American Literature | $(3)$ |
| HIS | 203 | Fnd of Amer His/Govt | 3 |
| SPE | 201 | Intro to Study of Except Child | 3 |
| OSM | 204 | Office Procedures | 3 |
| ACC | 203 | Intro to Accounting I | 3 |
| OSM | 302 | Desktop Publishing | $\underline{3}$ |
|  |  |  | 18 |

Sem. Hrs.3

| ENG | 203 | World Literature I or | 3 |
| :--- | :--- | :--- | :---: |
| ENG | 201 | Survey of English Lit or | $(\mathbf{3})$ |
| ENG | 301 | Survey of American Lit | $(\mathbf{3})$ |
| PSY | 201 | General Psychology | 3 |
| ECO | 200 | Principles of Economics | 3 |
| OSM | 202 | Word Processing | 3 |
| MUS | 101 | Music Appreciation | 3 |
| EDU | 307 | Principles of Teaching | $\underline{3}$ |

ECO 200 Principles of Economics 3
OSM 202 Word Processing 3
MUS 101 Music Appreciation 3
EDU 307 Principles of Teaching $\underline{3}$

Second Semester
ENG 102 Composition II 3

1

2
3
1

Second Semester
EDU 311 Human Growth \& Devel 3
BUS 307 Legal Environ \& Ethics 3
OSM 215 Business Mathematics 3
OSM 309 Records Management 3


## 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 or | $(\mathbf{3})$ | ENG | 202 | Survey of English Literature or | (3) |
| ENG | 301 | Survey of American Literature | $(\mathbf{3})$ | ENG | 302 | Survey of American Literature | $(\mathbf{3})$ |
| BIO | 101 | General Biology I | 3 | PSY | 201 | General Psychology | 3 |
| BIO | 101L | General Biology Lab I | 1 | CHE | 409 | Instrumental Methods | 1 |
| MTH | 125 | Calculus I | 4 | SPE | 201 | Intro to Study of Except Child | 3 |
| CHE | 221 | Analytical Chemistry I | 3 | HIS | 203 | Fnd Amer Hist/Govt | 3 |
| CHE | $221 L$ | Analytical Chemistry Lab I | 1 | ENG | $\mathbf{2 0 5}$ | General Speech | $\underline{\mathbf{3}}$ |
| CHE | 406 | Adv. Inorg. Chem. | $\underline{3}$ |  |  |  | 18 |

Junior Year

First Semester

| CHE | 301 | Organic Chemistry I |
| :--- | :--- | :--- |
| CHE | 301 L | Organic Chemistry Lab I |
| PSY | 201 | General Psychology |
| EDU | 311 | Human Growth \& Dev |
| ECO | 200 | Basic Economics |
| EDU | $\mathbf{4 1 1}$ | Instructional Technology |
| CHE | 407 | Biochemistry |

Sem. Hrs. Second Semester
3 PHY 105 General Physics I 4
1 CHE 302 Organic Chemistry II
3 CHE 302L Organic Chemistry Lab II 1

| 3 | EDU | 307 | Principles of Teaching |
| :--- | :--- | :--- | :--- |
| 3 | PED | P E Activities | 3 |


| 3 | EDU | 307 | Principles of Teaching |
| :--- | :--- | :--- | :--- |
| 3 | PED | P E Activities | 3 |

3 EDU 403 Educational Psychology $\underline{3}$
4 17

First Semester
CHE 401 Physical Chemistry
EDU 409 Reading in Content Area
EDU 424 M/M Tch Sci in Sec Sch
CHE 412 His. of Chem. Theory

Sem. Hrs. Second Semester
4 EDU 402 Tests \& Measurements 3
3 EDU 408 Directed Teaching $\underline{9}$
3
1
14

3

## Senior Year

Sem. Hrs.

## FAMILY AND CONSUMER SCIENCES EDUCATION <br> 133 Semester Hours

Freshman Year

First Semester
ORI 101 Survival Skills I
${ }^{1}$ ENG 101 Composition I
MTH 112 Pre-Calculus Algebra
BIO 101 General Biology I
BIO 101L General Biology Lab I
HIS 101 World History I
HED 101 Personal Community Hlth
FCS 101 Intro to the Profession

Sem. Hrs. Second Semester
${ }^{2}$ ENG 102 Composition II 3
AMD 104L Art and Design 3
AGB 199 Computers in Agriculture 3
PED PE Activity 1
NHM 102L Principles of Nutrition 3
MUS 101 Music Appreciation $\underline{3}$
$\begin{array}{ll}3 & \underline{3} \\ 1\end{array}$

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
ENG 203
World Literature I
3
ENG 204 World Literature II
Sem. Hrs.

CHE 111 Applied Chemistry I
HDF 211 Child Growth/Develop.

| CHE 111L | Applied Chemistry Lab I | 1 | PSY | 201 | General Psychology | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| AMD 203 | Consumer Aspects of Cloth | 3 | AMD 204L | Clothing Through Life Cycle | 3 |  |
| NHM 201L | Science of Food Prep. | 4 | ART 101 | Art Appreciation | 3 |  |
| HDF 201 | Family Relations | $\underline{3}$ | EDU | 102 | Intro to Teacher Education | $\underline{3}$ |
|  |  | 17 |  |  |  | 18 |


| Junior Year |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| First Semester Sen |  |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| ECO |  | Economics | 3 | NHM 301 | Food Service Operations I | 3 |
| SPE | 201 Intro to Study of Except Child Computers in Agribusiness |  |  | 3 AGB | 199 |  |
|  |  |  |  |  |  |  |
| AMD | 305L | Housing \& Interiors | 3 | HDF 304 | Parenting | 3 |
| HDF | 314 | Family and Society | 3 | HDF 312L | Family Economics \& Home Mgt | 3 |
| HDF | 211 | Child Growth/Develop | 3 | EDU 307 | Principles of Teaching | 3 |
| FCS | 303 | Voc \& Fam Cons Sci Ed | d 3 | PED | PE Activity | 1 |
| FCS |  | Elective | $\underline{3}$ | HIS 203 | Found. of Amer His/Govt | 3 |
|  |  |  | 18 |  |  | 16 |
|  |  |  |  | Senior Year |  |  |
| First Semester S |  |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| EDU | 402 | Tests \& Measurements | 3 | EDU 411 | Instructional Technology | 3 |
| EDU | 403 | Educational Psychology | 3 | FCS 420 | Senior Seminar | 1 |
| EDU | 409 | Reading in Content Area | a 3 | FCS 402 | Directed Teaching | $\underline{9}$ |
| EDU | 411 | Instructional Technology | y 3 |  |  | 13 |
| FCS | 401 | Family \& Cons Sci Edu | 3 |  |  |  |
| FCS |  | Elective | 3 |  |  |  |
| EDU | 401 | History \& Philosophy | $\underline{3}$ |  |  |  |
|  |  |  | 18 |  |  |  |

FOREIGN LANGUAGE (FRENCH) EDUCATION (P-12 AND 7-12)
133 Semester Hours
Freshman Year

| First Semeste |  | Sem. Hrs. | Second Sem | ester | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ORI 101 | Survival Skills I | 1 | ENG 102 | Composition II | 3 |
| ENG 101 | Composition I | 3 | MTH 112 | Pre-Calculus Trig or MTH 113 | 3 |
| MTH 110 | Finite Math | 3 | HIS 101 | World History I | 3 |
| BIO 101 | General Biology I | 3 | PED | P E Activities | 2 |
| BIO 101L | General Biology Lab I | 1 | FRE 102 | Elementary French II | $\underline{3}$ |
| HED 101 | Personal \& Comm Hlth | 2 |  |  | 14 |
| ART 101 | Art or MUS Appr 101 | $\underline{3}$ |  |  |  |
| FRE 101 | Elementary French I | $\underline{3}$ |  |  |  |
|  |  | 19 |  |  |  |

## Sophomore Year

First Semester
Sem. Hrs.

| ENG | 203 | World Literature I or | 3 |
| :--- | :--- | :--- | :---: |
| ENG | 201 | Surv of English Lit or | $(\mathbf{3})$ |
| ENG | 301 | Surv of American Lit | $(\mathbf{3 )}$ |
| PHY | 101 | Physical Science I | 3 |
| PHY | $101 L$ | Physical Science I Lab | 1 |
|  |  |  |  |
| HIS | 203 | Fnd of Amer His/Govt | 3 |
| PSY | 201 | General Psychology | 3 |
| ECO | 200 | Basic of Economics or | 3 |
| ECO | 223 | Principles of Econ I or | $(\mathbf{3 )}$ |
| ECO | 224 | Principles of Econ II | $\mathbf{( 3 )}$ |
| FRE | 201 | Intermediate French I | $\underline{3}$ |
|  |  |  | 19 |

First Semester

| EDU | 311 | Human Growth \& Dev | 3 |
| :--- | :--- | :--- | :--- |
| FRE | 301 | Advanced French I | 3 |
| FRE | 303 | Intro to French Lit I | 3 |
| EDU | 425 | M/M of For Lng in Sec | 3 |
| Advisor approved elective |  |  |  |
| EDU | 307 | Prin. Of Teaching |  |
| Philosophy of Education | $\underline{3}$ |  |  | 18

Sem. Hrs.
First Semester

| EDU | 403 | Educational Psychology | 3 |
| :--- | :--- | :--- | :--- |
| EDU | 409 | Reading in Content Area | 3 |
| FRE | $\mathbf{4 0 4}$ | French Lit. Masterpeices | $\mathbf{3}$ |
|  |  | Advisor approved elective | 3 |
| EDU | 411 | Instructional Technology | 3 |
| FRE | 402 | French Phonetics | 3 |

FRE 402 French Phonetics33
8

## Junior Year

Second Semester
ENG 204 World Literature II or
ENG 202 Survey of English Literature or
ENG 302 Survey of American Literature
FRE 202 Intermediate French II
SPE 201 Intro to Study of Except Child
EDU 102 Intro to Teacher Education
Advisor approved elective
ENG 205 General Speech

Second Semester

FRE 302 Advanced French II 3
FRE 304 Intro to French Lit II 3
FRE 401 French Civilization \& Culture 3
FRE 403 French Literary Masterpieces 3
$\underline{3}$ EDU $401 \quad$ History \&

Senior Year
Second Semester
EDU 402 Tests \& Measurements 3
*EDU 408 Directed Teaching
*Appropriate internship placement(s) required
Sem. Hrs.
3
(3)
(3)

3
3

3
3
3
18

Sem. Hrs.

15
$\underline{9}$
Sem. Hrs.

## 3

```
12
```

3
3

## GENERAL SCIENCE EDUCATION <br> 141 Semester Hours <br> Freshman Year

First Semester

| ORI | 101 | Survival Skills I | 1 |
| :--- | :---: | :--- | :--- |
| ENG | 101 | Composition I or 101 H | 3 |
| PHY | 101 | Physical Science | 3 |
| PHY 101L | Physical Science Lab | 1 |  |
| BIO | 101 | General Biology I | 3 |
| BIO | 101 L | General Biology Lab I | 1 |
| HIS | 101 | World History I | 3 |
| CHE | 101 | General Chemistry I | 3 |

Second Semester
ENG 102 Composition II or 102H 3
BIO 102 General Biology II 3
BIO 102L General Biology Lab II 1
PHY 102 Physical Science II 3
PHY 102L Physical Science Lab II 1
EDU 102 Intro to Teacher Education 3
MTH 110 Finite Mathematics $\underline{3}$ 18


## Senior Year



# HISTORY EDUCATION 

History Major - 131 Semester Hours
$2^{\text {nd }}$ Teaching Field Required - 27-30 Semester Hours


## Sophomore Year

| First Semester | Sem. Hrs. |  |  |
| :--- | :--- | :--- | :--- |
| ENG | 203 | World Literature I or | 3 |
| ENG | 201 | Surv of English Literature | $(3)$ |
| HIS | 104 | Intro to History Discipline | 3 |
| PSY | 201 | General Psychology | 3 |
| ECO | 200 | Basic Economics | 3 |
| PED |  | P E Activity | 1 |
| ENG | $\mathbf{2 0 5}$ | General Speech | $\mathbf{3}$ |
| HED | $\mathbf{1 0 1}$ | Personal \&Comm Hlth | $\underline{\mathbf{2}}$ |
|  |  | $\mathbf{1 8}$ |  |


| Second Semester |  | Sem. |  |
| :--- | :--- | :--- | :---: |
| ENG | 204 | World Literature II or | 3 |
| ENG | 202 | Survey of English Literature | $(3)$ |
| HIS | 201 | American History I | 3 |
| PHL | 201 | Intro to Philosophy | 3 |
| SPE | 201 | Intro to Study of Except Child | 3 |
| SOC | 201 | Intro to Sociology | 3 |
| PED |  | Activity | $\underline{\mathbf{1}}$ |
|  |  |  | $\mathbf{1 6}$ |

Junior Year

| First Semester |  |  | Sem. Hrs. | Second Semester |  |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| HIS | 202 | American History II | 3 | HIS | 403 | Modern Europe | 3 |
| HIS | 206 | Alabama History | 3 | HIS | 408 | History of the South | 3 |
| GEO | 213 | Prin. of Geography | 3 | HIS | 406 | $20^{\text {th }}$ Century U.S. | 3 |
| PSC | 205 | Amer Government | 3 | EDU | 307 | Principles of Teaching | 3 |
| EDU | 311 | Human Growth \& Dev. | 3 | EDU | 403 | Educational Psychology | 3 |

## Senior Year

| First Semester | Sem. Hrs. | Second Semester | Sem. Hrs. |  |  |
| :--- | :--- | :---: | :--- | :--- | :---: |
| HIS | 499 | Senior Seminar | 3 | EDU 408 | Directed Teaching |
| EDU 423 | M/M Tch Soc Sci in H.S. | 3 |  |  | $\underline{9}$ |
| EDU 411 | Instructional Technology | 3 |  |  | 9 |
| EDU 401 | History \& Philosophy | $\mathbf{3}$ |  |  |  |
| EDU 402 | Test \& Measurements | $\underline{\mathbf{3}}$ |  |  |  |
|  |  | $\mathbf{1 5}$ |  |  |  |

## ENGLISH LANGUAGE ARTS EDUCATION <br> 145 Semester Hours

Freshman Year

| First Semester | ( Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: |
| ORI 101 | Survival Skills I 1 | ENG 102 | Composition II | 3 |
| ENG 101 | Composition I 3 | PHY 101 | Physical Science I | 3 |
| MTH 110 | Finite Mathematics or 3 | PHY 101L | Physical Science Lab I or | 1 |
| MTH 112 | Pre-Calculus Algebra or (3) | CHE 101 | General Chemistry I | (3) |
| MTH 113 | Pre-Calculus Trigonometry. | (3) |  |  |
| BIO 101 | General Biology 2 | CHE 101L | General Chemistry Lab I or | (1) |
| BIO 101L | General Biology Lab I | PHY 103 | General Physics I | (4) |
| MUS 101 | Music Appreciation 3 | HIS 203 | Fnd of Amer His/Govt | 3 |
| HIS 101 | World History I 3 | HED 101 | Personal \& Community Health | 2 |
| ART 101 | Art Appreciation $\underline{3}$ | EDU 102 | Intro to Teacher Education | $\underline{3}$ |
|  | 19 |  |  | 15 |

## Sophomore Year

## First Semester

| ENG 203 | World Literature I | 3 | ENG 204 | World Literature II | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ENG 201 | Surv of English Lit | 3 | ENG 202 | Survey of English Literature | 3 |
| PSY 201 | General Psychology | 3 | ENG 205 | General Speech | 3 |
| ECO 200 | Basic of Economics | 3 | SPE 201 | Intro to Study of Except Child | 3 |
| ENG 310 | Journalism Workshop | $\underline{3}$ | TEL 216 | Oral Interpretation | 3 |
|  |  | 15 | PED | P E Activities | 2 |
|  |  |  | ENG | Advisor Approved Elective | $\underline{1}$ |
|  |  |  |  |  | 18 |
|  |  |  | Junior Year |  |  |
| First Semester |  | Sem. Hrs. | Second Sem | ester | Sem. Hrs. |
| EDU 311 | Human Growth \& Dev | 3 | EDU 307 | Principles of Teaching | 3 |
| ENG 307 | Shakespeare | 3 | ENG 302 | Survey of American Literature II | 3 |
| ENG 301 | Survey of American Lit I | I 3 | ENG 304 | Advanced Composition | 3 |
| ENG 305 | Sixteenth Century Lit or | - 3 | ENG 309 | History of English Language | 3 |


| ENG | 306 | Seventeenth Century Lit | $(\mathbf{3})$ | ENG 401 | Romantic Writers or | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: |
| ENG | 308 | Literary Criticism | 3 | ENG 402 | Victorian Writers | (3) |
| TEL 212 | Writing for Broadcasting | $\underline{3}$ | TEL | 403 | Acting for TV \& Film I | $\underline{3}$ |
|  |  |  | 18 |  |  |  |

## Senior Year

| First Seme |  | Sem. Hrs. | Second Semester |  | Sem. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| EDU 403 | Educational Psychology | 3 | EDU 401 | History \& Philosophy of Education | 3 |
| ENG 403 | Play Production | 3 | EDU 402 | Tests \& Measurements | 3 |
| EDU 421 | M/M Tch Eng in Sec Sch | 3 | EDU 408 | Directed Teaching | 9 |
| EDU 409 | Reading in Content Area | 3 | EDU 411 | Instructional Technology | $\underline{3}$ |
| ENG 405 | Advanced Grammar | $\underline{3}$ |  |  | 18 |
|  |  | 15 |  |  |  |
| MATHEMATICS EDUCATION |  |  |  |  |  |
| 128 Semester Hours |  |  |  |  |  |


| Freshman Year |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| First Semester |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| ORI 101 | Survival Skills I | 1 | ENG 102 | Composition II | 3 |
| ENG 101 | Composition I | 3 | MTH 126 | Calculus II | 4 |
| MTH 125 | Calculus I | 4 | PED | P E Activities | 2 |
| BIO 101 | General Biology | 3 | EDU 102 | Introduction to Teacher Education | 3 |
| BIO 101L | General Biology Lab I | 1 | HED 101 | Personal Community Health | 2 |
| HIS 101 | World History I | 3 | HIS 203 | Fnd of American History/Govt | 3 |
| MTH 113 | PreCalculus Trig. | $\underline{3}$ |  |  | 17 |
|  |  | 18 |  |  |  |

## Sophomore Year

| First Semest |  | Sem. Hrs. | Second Semester |  | Sem. Hrs |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ENG 203 | World Literature I or | 3 | ENG 204 | World Literature II or | 3 |
| ENG 201 | Surv of English Lit or | (3) | ENG 202 | Survey of English Literature or | (3) |
| ENG 301 | Surv of American Lit | (3) | ENG 302 | Survey of American Literature | (3) |
| MTH 227 | Calculus III | 4 | MTH 237 | Intro to Linear Algebra | 3 |
| PSY 201 | General Psychology | 3 | SPE 201 | Intro to Study of Except Child | 3 |
| ECO 200 | Basic Economics | 3 | MTH 238 | Applied Differential Equations | 3 |
| PHY 101 | Physical Science I or | 3 | EDU 311 | Human Growth and Dev. | 3 |
| PHY 101L | Physical Science Lab I | 1 |  |  | 15 |PHY 103 General Physics I or (4)

CHE 101 General Chemistry I (3)
CHE 101L General Chemistry Lab I (1)

Sem. Hrs. Second Semester

| MTH 301 | Abstract Algebra I | $\mathbf{3}$ | MTH 351 | Intro to Real Analysis I | $\mathbf{3}$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| MTH | Approved Elec (300 level) | $\mathbf{3}$ | MTH 481 | Senior Project | 3 |
| MTH 307 | Geometry | 3 | MTH | Approved Elective (300 level) | $\mathbf{3}$ |
| MTH 357 | Computer \& Tch Math | 3 | EDU 307 | Principles of Teaching | 3 |


| MTH 401 | History of Mathematics | S 1 | EDU 403 | Educational Psychology | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ENG 205 | General Speech | $\frac{\mathbf{3}}{16}$ | EDU 409 | Reading in Content Area | $\frac{\mathbf{3}}{18}$ |
| Senior Year |  |  |  |  |  |
| First Semester | $r$ Sem. Hrs. |  | Second Semester |  | Sem. Hrs. |
| MTH 453 | Probability \& Statistics | 3 | EDU 408 | Directed Teaching | $\underline{9}$ |
| EDU 422 | M/M Tch Math in H.S. | 3 |  |  | 9 |
| EDU 411 | Instructional Technology | y 3 |  |  |  |
| EDU 401 | Hist. \& Philosophy | 3 |  |  |  |
| EDU 402 | Test \& Measurements | 3 |  |  |  |
| ART 101 | Art Appreciation or | 3 |  |  |  |
| MUS 101 | Music Appreciation | $\underline{3}$ |  |  |  |
|  |  | 18 |  |  |  |

## PHYSICS EDUCATION

130 Semester Hours
$2^{\text {nd }}$ Teaching Field Required - 27-30 Semester Hours
Freshman Year
First Semester

| ORI | 101 | Survival Skills I | 1 |
| :--- | :--- | :--- | :--- |
| ENG | 101 | Composition I or 101H | 3 |
| HIS | 101 | World History I | 3 |
| MTH 110 | Finite Math | 3 |  |
| BIO | 101 | General Biology I | 3 |
| BIO | 101L | General Biology Lab I | 1 |
| CHE | 101 | General Chemistry I | 3 |
| CHE | 101 L | General Chemistry Lab I | $\underline{1}$ |
|  |  |  | 18 |

second Semester
Sem. Hrs.
ENG 102 Composition II or 102H 3
PHY 101 Physical Science I 3
PHY 101L Physical Science Lab 1
HED 101 Personal \& Community Health 2
PED PE Activities 2
MTH 112 Pre-Calculus Algebra 3
EDU 102 Intro to Teacher Education $\underline{3}$

Sophomore Year

First Semester
ENG 203 World Literature I or 3
ENG 201 Surv of English Lit
MTH 125 Calculus I 4
PSY 201 General Psychology 3
ECO 200 Basic Economics 3
PHY 105 Physics I $\underline{4}$
17

Second Semester
Sem. Hrs.
ENG 204 World Literature II or
3
ENG 202 Survey of English Literature (3)
MTH 238 Applied Differential Equations 3
PHY 106 Physics II 4
HIS 203 Fnd of Amer His \& Govt 3
SPE 201 Intro to Study of Except Child $\underline{3}$
16

Junior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| PHY 201 | Intro to Modern Physics | 3 | PHY 401 | Optics | $\mathbf{3}$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| PHY | 321 | Mechanics | 3 | PHY 303 | Methods of Math Physics | 4 |
| PHY | 331 | Electricity \& Magnetism | 3 | EDU 307 | Principles of Teaching | 3 |
| PHY | $252 \mathbf{L}$ | Modern Physics Lab | 3 | EDU | 409 | Reading in Content Area |
| EDU | 311 | Human Growth \& Dev. | 3 | EDU $\mathbf{4 0 3}$ | Educational Psychology | $\mathbf{3}$ |
| ENG 205 | General speech | $\underline{\mathbf{3}}$ | MUS | 101 | Music Appreciation or | $\mathbf{3}$ |
|  |  |  | $\mathbf{1 8}$ | ART $\mathbf{1 0 1}$ | Art Appreciation | $\underline{(\mathbf{3})}$ |

## Senior Year

First Semester
PHY 502 Biophysics
EDU 424 M/M Tch Sci in H.S. 3
EDU 411 Instructional Technology 3
EDU 401 History \& Philosophy 3
EDU 402 Test and Measurements $\underline{3}$

Sem. Hrs.
$\frac{9}{9}$

## GENERAL SOCIAL SCIENCE EDUCATION

139 Semester Hours

## Freshman Year

First Semester

| ORI | 101 | Survival Skills I |
| :--- | :--- | :--- |
| ENG | 101 | Composition I |
| MTH | 112 | Pre-Calculus Algebra or |
| MTH | 110 | Finite Math |
| BIO | 101 | General Biology |
| BIO | 101 L | General Biology Lab |
| HIS | 101 | World History |
| ART | $\mathbf{1 0 1}$ | Art App or MUS 101 |
| HED | 101 | Personal \& Comm Hlth |

First Semester

| ENG | 203 | World Literature I or |
| :--- | :--- | :--- |
| ENG | 201 | Survey of English Lit or |
| PSY | 201 | General Psychology |
| HIS | 104 | Intro. to History Discip |

Sem. Hrs. Second Semester
1 ENG 102 Composition II or 102 H
$3 \quad$ HIS 104 History As A Discipline 3
3 PHY 101 Physical Science 3
(3) PHY 101L Physical Science Lab or 1

3 PHY 102 Physical Science
1 PHY 102L Physical Science Lab or
CHE 101 General Chemistry
CHE 101L General Chemistry Lab
HIS 102 World History II 3
EDU 102 Intro to Teacher Education

SemHrs
(3)
(1)
(3)
(1)

3
$\underline{3}$
16

## Sophomore Year

Sem. Hrs. Second Semester
3 ENG 204 World Literature II or 3
(3) ENG 202 Survey of English Literature
(3)

GEO 214 Principles of Geography 3
SOC 201 Intro. to Sociology 3

| GEO | 213 | Prin. of Geography | 3 | SPE | 201 | Intro. to Study of Except. Child | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| HIS | 201 | American History | 3 | HIS | 202 | American History | 3 |
| PED | P E Activity | 1 | PED | P E Activity | $\frac{1}{16}$ |  |  |
| ENG | $\mathbf{2 0 5}$ | General Speech | $\underline{\mathbf{3}}$ |  |  |  | $\mathbf{1 6}$ |

## Junior Year

First Semester

| ECO | 223 | Principles of Economics |
| :--- | :--- | :--- |
| HIS | 305 | Modern Asia |
| PSC | 305 | Federal Government |
| EDU | 311 | Human Growth \& Dev. |
| PSC | 306 | State \& Local Government |
| EDU | $\mathbf{4 0 9}$ | Reading in Content Area |

Sem. Hrs. Second Semester

| 3 | ECO | 224 | Principles of Economics | 3 |
| :--- | :--- | :--- | :--- | :--- |
| 3 | HIS | 401 | Alabama History | 3 |
| 3 | EDU | 307 | Principles of Teaching | 3 |
| 3 | PSC | 307 | Comparative Government | 3 |
| 3 | SOC | 334 | Cultural Anthropology | 3 |
| $\underline{\mathbf{3}}$ | EDU | $\mathbf{4 0 3}$ | Educational Psychology | $\mathbf{3}$ |
| $\mathbf{1 8}$ |  |  |  | 18 |

First Semester
EDU 411 Instructional Technology
EDU 423 M/M Tch Soc Sci in H.S.
HIS 402 History of Latin America
HIS 403 Modern Europe
EDU 401 History \& Phil of Education 3
EDU 402 Test and Measurements

3
3
$1 \frac{3}{8}$

Sem. Hrs. Second Semester Sem. Hrs.
3 EDU 408 Directed Teaching $\underline{9}$

## TECHNICAL EDUCATION

139 Semester Hours

Freshman Year

Sem. Hrs. Second Semester
Sem. Hrs.

| 1 | ENG 102 | Composition II | 3 |
| :--- | :--- | :--- | :--- |
| 3 | MTH 113 | Pre-Calculus Trigonometry | 3 |
|  |  |  |  |
| 3 | HIS 203 | Fnd of Amer His \& Govt | 3 |
| 3 | PHY 104 | General Physics II | $\mathbf{4}$ |
| 3 | EDU 102 | Intro to Teacher Education | 3 |
| $(3)$ | HED 101 | Personal and Comm Health | $\underline{\mathbf{2}}$ |
| $\underline{4}$ |  | 18 |  |

## Sophomore Year

Sem. Hrs.

| ENG | 203 | World Literature I | 3 | TBC | 102 | Microcomputer Skills for Tech | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| SPE | $\mathbf{2 0 1}$ | Intro to Study of Except Child | 3 | ENG | 204 | World Literature II | 3 |
| ECO | 232 | Principles of Microeconomics | 3 | ENG | 205 | General Speech | 3 |
| PSY | 201 | General Psychology | 3 | PED |  | Ped Activity | 1 |
| PED | Ped Activity | 1 | INT | 200 | Occup Safety \& Health | 3 |  |
|  |  | *Elective | $\underline{3}$ |  |  | * Elective | $\underline{3}$ |
|  |  | 16 |  |  |  | 16 |  |

Junior Year

| First Semester |  | Sem. Hrs. Second Semester Sem. |  |  | Sem. Hrs. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| EDU 311 | Human Growth \& Dev | 3 | EDU 307 | Principles of Teaching | 3 |
| TTE 301 | Principles of CTE | 3 | TTE 302 | Course Dev/Eval In CTE | 3 |
| TTE 305 | Lrng Res \& Tech in CTE | 3 | TTE 404 | Class/Lab Mgt \& Student | 3 |
| TTE 407 | CT Student Organizations | 3 | TTE 440 | Special Needs in CTE | 3 |
| TTE 403 | Career Info \& Guidance | 3 | TTE 405 | Functions of the Coordinator | r 3 |
|  | *Elective | 3 |  | *Elective | 3 |
|  |  | 18 |  |  | 18 |

Senior Year

First Semester

| TTE | 406 | M/M of Teaching CTE | 3 |
| :--- | :--- | :--- | :--- |
| EDU | 401 | Hist \& Phil of Education | 3 |
| EDU | 402 | Tests and Measurements | 3 |
| EDU | 403 | Educational Psychology | 3 |
| EDU | 409 | Reading in Content Areas | 3 |
|  |  | * Elective | $\underline{3}$ |

Elective -Student must complete 18 semester hours of course work in one of the following.
TTE 460-462 Work Experience in Industry; CWE 220, 320, 420 Cooperative Work Experience; or ITE 399, Supervised Occupational Development.

## TECHNOLOGY EDUCATION

139 Semester Hours

## Freshman Year

First Semester

| ORI | 101 | Survival Skills I |
| :--- | :---: | :--- |
| ENG | 101 | Composition I |
| MTH | 112 | Pre-Calculus Algebra |
| HIS | 101 | World History I |
| ART | $\mathbf{1 0 1}$ | Art Appreciation or |
| MUS 101 | Music Appreciation |  |


| INT | 102 | Understanding Am. Industry | 2 | TBC | 102 | Microcomputer Skills Tech | $\underline{3}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| MDT | 111 | Technical Drafting | $\underline{3}$ |  |  |  | 17 |

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| INT | 205 | Power and Energy Systems | $\mathbf{3}$ | INT | 209 | Graphic Arts Comm | $\mathbf{2}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| INT | 221 | Mfg. Materials Processes | $\mathbf{3}$ | INT | 212 | Construction Systems | $\mathbf{3}$ |
| PHY | 103 | General Physics I | $\mathbf{4}$ | PHY | $\mathbf{1 0 4}$ | General Physics | $\mathbf{4}$ |
| PSY | 201 | General Psychology | $\mathbf{3}$ | HIS | 203 | Fnd of American His/Govt | $\mathbf{3}$ |
| SPE | 201 | Intro to Study Except Child | $\mathbf{3}$ | ECO | 232 | Prin of Microeconomics | $\mathbf{3}$ |
| PED | Ped Activity | $\mathbf{1}$ | ENG | 205 | General Speech | $\underline{3}$ |  |
| PED |  | Ped Activity | $\underline{1}$ |  |  |  | $\mathbf{1 8}$ |


|  | Junior Year |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| First Semester |  | Sem. Hrs. | Second Semester | Sem. Hrs. |  |  |  |
|  |  |  |  |  |  |  |  |
| EDU | $\mathbf{3 1 1}$ | Human Growth/Develop | $\mathbf{3}$ | EDU | $\mathbf{3 0 7}$ | Principles of Teaching | $\mathbf{3}$ |
| ENG | 203 | World Literature I | $\mathbf{3}$ | ENG | $\mathbf{2 0 4}$ | World Literature II | $\mathbf{3}$ |
| INT | $\mathbf{3 0 3}$ | Communication Systems | $\mathbf{2}$ | INT | $\mathbf{3 0 4}$ | Production Systems | $\mathbf{3}$ |
| INT | $\mathbf{3 1 4}$ | Construction Modeling | $\mathbf{3}$ | INT | $\mathbf{3 0 6}$ | Transportation | $\mathbf{3}$ |
| INT | $\mathbf{4 2 3}$ | Bio-related Technology | $\mathbf{3}$ | INT | $\mathbf{3 1 9}$ | CADD and Manufacturing | $\mathbf{3}$ |
| MET 200 | Electromechanical Principles | $\mathbf{4}$ | TTE | $\mathbf{3 0 0}$ | Plan and Org. TE Programs | $\mathbf{3}$ |  |
|  |  | $\mathbf{1 8}$ |  |  |  | $\mathbf{1 8}$ |  |

Senior Year
First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| INT | 412 | Contemporary Technology | $\mathbf{2}$ | ITE | 408 | Directed Teaching | $\mathbf{9}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | ---: |
| INT | 421 | Technology R\&D | $\mathbf{3}$ | EDU | 403 | Educational Psychology | $\mathbf{3}$ |
| EDU | 402 | Tests and Measurements | $\mathbf{3}$ | EDU | 411 | Instructional Technology | $\underline{\mathbf{3}}$ |
| EDU | 409 | Reading in Content Areas | $\mathbf{3}$ |  |  |  | $\mathbf{1 5}$ |
| EDU | 401 | History and Philosophy of Edu | $\mathbf{3}$ |  |  |  |  |
| TTE | 402 | M\&M of Teaching TE | $\underline{\mathbf{3}}$ |  |  |  |  |

## COURSE DESCRIPTIONS

EDU 100L Reading with Lab-3 hrs. This is a corrective course of individualized reading instruction designed to improve basic reading, study and cognitive skills, which are essential to success at

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 Basic Skills Test as stipulated by the Alabama State Board of Education. Generally, the course gives students an opportunity to improve their performance on standardized and teacher-made tests by allowing them to explore test-taking techniques and to participate in numerous activities related to English usage, mathematics usage, reading and writing. Prerequisite: None (Offered Fall, Spring, and Summer)

EDU 102 Introduction to Teacher Education-3 hrs. A general overview of teaching in public schools with a supervised practicum. The course is designed as a personalized exploration of the profession for those students interested in teaching as a possible career and anxious for an accurate picture of what is entailed in teaching in American schools today as well as the qualities and skills required for those who teach. Prerequisite: None (Offered Fall, Spring, and Summer)

EDU 307 Principles of Teaching - 3 hrs. A course designed to acquaint the student with fundamental educational principles and practices in elementary and 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: EDU 102 (Offered Fall, Spring, and Summer)

EDU 311 Human 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, influences, and expectations. Prerequisite: PSY 201 (Offered Fall, Spring, and Summer)

EDU 401 History and Philosophy of Education - 3 hrs. A study of the growth and development of education in the United States, together with a consideration to the effects of the purpose of education on organization administration curriculum, and teaching procedures. Prerequisites: EDU 102 and EDU 307 (Offered Fall, Spring, and Summer)

EDU 402 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. Prerequisite: PSY 201 (Offered Fall, Spring, and Summer)

Educational Psychology - PSY 403) 3 hrs. The application of psychology to teaching with emphasis upon the laws of learning, heredity, environment, individual difference, nervous
reactions, perceptions, sensibilities, thinking tendencies, growth patterns, and the measurement of intelligence. Prerequisite: PSY 201 (Offered Fall, Spring, and Summer)

EDU $408 \quad$ Directed Teaching and Seminar - 9 hrs. Twelve 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 of twelve week duration. 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 methods courses; and completion of $85 \%$ of all coursework applied toward the degree (Offered Fall and Spring)

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: EDU 102 and EDU 307 (Offered Fall, Spring, and Summer)

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: EDU 102 and EDU 307 (Offered Fall, Spring, and Summer)

Teaching of English in Secondary Schools - 3 hrs. This course entails an analysis of objectives of the high school curriculum in English and a study of methods and practices effective in the teaching of language and literature. Prerequisite: Formal admission to the teacher education program and permission of the instructor; EDU 102 and EDU 307 (Offered Fall)

Teaching of 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 and permission of instructor (Offered Fall)

Materials and Methods of Teaching High School Social Studies - 3 hrs. A study of the aims and function of social studies in the modern secondary school and the curriculum and methods appropriate to the attainment of these objectives. Prerequisite: Formal admission to the teacher education program and permission of instructor (Offered Fall)

Teaching of 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 audio-visual aids, demonstrations, and experiments; science materials and their sources; and science clubs in the high school curriculum. Prerequisite: At lease one year's work in each of the basic sciences - chemistry, physics, and biology and formal admission to the teacher education program (Offered Fall)

Teaching of Foreign Languages in the Secondary Schools - 3 hrs. First semester course that offers a review of foreign language, methodology; aims and methods, selection of textbooks and materials; recent developments in the teaching and study of foreign languages. Prerequisite: The advanced course in a Foreign Language. Formal admission to a teacher education program and permission of the instructor are required for registration (Offered Fall)

## ELECTIVE EDUCATION COURSES

CWE 230 Cooperative Work Experience - 3 hrs. A course to assist junior and senior level Secondary Education majors in gaining practical experiences in teaching procedures and techniques. Students are assigned full-time in a school setting and receive a stipend for their work experience. Prerequisite: EDU 102, SPE 201, and EDU 307 (Offered Fall, Spring, and Summer)

SOC 332 Educational Sociology-3 hrs. A study of school-community relationships and the problems of community institutions as they affect to be with and development of elementary and high school youth. Prerequisite: SOC 201 (Offered Spring)

## DEPARTMENT OF COUNSELING AND SPECIAL EDUCATION

The Department of Counseling and Special Education offers the following undergraduate programs which leads to a BS or BA degree in Psychology (non-teaching). Early Childhood Special Education, Collaborative Teacher (K-6), Collaborative Teacher (6-12), Communicative Sciences and Disorders Curriculum (Non-Teaching).

## PSYCHOLOGY AND COUNSELING PROGRAM AREA

315 Patton Building
256-851-4773

## Orientation and Objectives

The Program in Psychology and Counseling is committed to providing the undergraduate psychology major with broad-based academic and experiential exposure to the science of behavior. While concerned with the assimilation of knowledge such as theories, principles, and concepts of psychology, competency development in the methodology and application of Social Science is stressed. With a perspective on research and application skills, the program incorporates use of human learning, animal behavior, and psycho-physiological laboratory experiences. The department is committed to the total development of students in their quest to learn psychology and to further the frontiers of the science either as paraprofessionals or through pursuit of graduate training.

The educational/training objectives of the department include:

1. establishing an awareness and appreciation of the historical development of psychology as the science of behavior;
2. developing an understanding of and competency in scientific methodology and research design;
3. developing an understanding of and the ability to competently use appropriate statistical tools of data description, analyses, and interpretation;
4. creating an awareness and understanding of the psychological substrates of behavior and associated research techniques;
5. providing a solid background in understanding the theories, research, and processes of human development, adjustment, and deviancy;
6. developing skills in the use of laboratory instrumentation, 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.

## 10. developing skills in using technology.

## Program Offering and Degrees

The program in Psychology and Counseling offers an undergraduate major leading to the Bachelor of Arts Degree in Psychology, a minor in Psychology, and graduate programs leading to the Master of Science Degree in Clinical Psychology, Counseling Psychology, Personnel Psychology, and School Counseling. Advanced programs are available leading to the "A" Certificate in Psychometry and in School Psychology; the "AA" Certificate in Psychometry, and School Counseling; and the Specialist (Ed.S.) Degree in Clinical and Counseling Psychology.

## Special Information

It is desirable that entering undergraduates have a strong background in science, math, English, history, social studies, and a foreign language. Graduation from the psychology program requires a minimum grade of "C" in all psychology classes taken. The Psychology major must also choose a minor subject area.

A departmentally sponsored and student-governed Psychology Club for interested students exists, and Psychology majors and minors are encouraged to participate. The Program also has charter membership in the National Honor Society in Psychology (PSI-CHI).

Information on available financial assistance is provided through the Office of Financial Aid, and jobs or further education information is available through both the program area and the Office of Career Development Services and Placement.

Advisement services are available through the program area and from the University Academic Advising Center.

## Program Curricula

The undergraduate major in Psychology consists of 38 semester hours in psychology, 15 of which are psychology electives. The undergraduate minor in psychology consists of 18 semester hours. Both the major and minor include specific, required psychology courses, as listed, with additional hours needed to complete the major or minor to be selected from psychology elective courses. General Psychology (PSY 201) is a prerequisite to all other psychology courses and may not be counted toward the major or minor requirements.

## Undergraduate Major in Psychology

| Course Number | Course Title | Sem. Hrs. |
| :--- | :--- | :---: |
| PSY 202 | History and Systems of Psychology | 3 |
| PSY 301 | Elementary Behavioral Statistics | 3 |
| PSY 307 | Introduction to Research | 3 |
| PSY 404 | Seminar in Psychology | 3 |
| PSY 415 | Physiological Psychology | 3 |
| PSY 415L | Physiological Psychology Lab | 1 |
| PSY 416 | Experimental Psychology | 3 |
| PSY 416L | Abnormal Psychology | 1 |
| PSY 471 | Electives | 3 |
| PSY |  | 15 |

## Undergraduate Minor in Psychology

| Course Number | Course Title | Sem. Hrs |
| :--- | :--- | :---: |
| PSY 202 | History and Systems of Psychology | 3 |
| PSY 301 | Elementary Behavioral Statistics | 3 |
| PSY 307 | Introduction to Research | 3 |
| PSY 471 | Abnormal Psychology | 3 |
| PSY | Electives | 6 |

The Psychology major is expected to complete a minimum total of $\mathbf{1 2 7}$ semester hours for graduation. Of this total, a minimum of 38 hours must be in Psychology, 18 (or 19) hours in a minor area, and the remaining hours from the following academic areas:
Course Number Course Title Sem. Hrs

## Art

## English

| ENG | 101 | Communication Skills I | 3 |
| :--- | :--- | :--- | :--- |
| ENG | 102 | Communication Skills II | 3 |
| ENG | 203 | World Literature I | $\mathbf{3}$ |
| ENG 204 | World Literature II | 3 |  |
| ENG 205 | General Speech | $\mathbf{3}$ |  |

## Foreign Language

101
102
201
202

Elementary I
3
Elementary II 3
Intermediate I
Intermediate II

Personal \& Community Health
Physical Education Activities

Pre-Calculus Algebra

Music Appreciation

Survival Skills for University Life
Course Title

General Biology I
3
General Biology I Lab 1
General Biology II
3
General Biology II Lab 1
$\begin{array}{ll}\text { BIO } & \text { General Biology II Lab } \\ \text { CMP } 101 & \text { Fundamentals of Computer and Info Systems }\end{array}$

## Social Sciences

ECO 200

HIS 101
HIS 102

PSY 201
SOC 201
PHL 201

Basic Economics 3
World History I 3
World History II 3

General Psychology 3
Intro to Sociology 3
Intro to Philosophy 3

## PSYCHOLOGY (NON-TEACHING)

## 127 Semester Hours

## Freshman Year

First Semester
ORI 101 Survival Skills I
ENG 101 Communication Skills I
HIS 101 World History
MUS 101 Music Appreciation
BIO 101 General Biology
BIO 101L General Biology
PED PED Activities
HED 101 Personal/Comm Hlth

First Semester
ENG 203 World Literature I
PSY 201 General Psychology
$101{ }^{1}$ Elem Foreign Lang I
MTH 112 Pre-Calculus
ENG 205 General Speech
General Elective

Sem. Hrs. Second Semester
Sem. Hrs.
ENG 102 Communication Skills II 3
HIS 102 World History 3
3 CMP 101 Fund of Computers 3
3 ART 101 Art Appreciation 3
BIO 102 General Biology 3
$\begin{array}{llll}3 & \text { BIO } & \text { 102 } & \text { General Biology } \\ 1 & \text { BIO } & \text { 102L } & \text { General Biology Lab }\end{array}$ 1 $1 \overline{6}$
1
3

2
2
18

## Sophomore Year

Sem. Hrs. Second Semester
Sem. Hrs.
3 ENG 204 World Literature II 3
3 SOC 201 Intro to Sociology 3
3 PHL 201 Intro to Philosophy 3
$3102{ }^{\text {1 }}$ Elem Foreign Lang II 3
3 PSY 301 Elementary Behavioral Statistics $\underline{3}$

## Junior Year

Sem. Hrs. Second Semester
Sem. Hrs.

| 3 |  | 202 | ${ }^{1}$ Interm Foreign Lang II | 3 |
| :--- | :--- | :--- | :--- | :--- |
| 3 | PSY | 416 | Experimental Psychology | 3 |
| 3 | PSY | $416 L$ | Experimental Psychology Lab | 1 |
| 3 | PSY |  | Psychology Elective | 3 |
| 3 |  |  | Minor Courses | $\underline{6}$ |
| $\mathbf{1 5}$ |  |  | 16 |  |
| Senior Year |  |  |  |  |

Sem. Hrs. Second Semester Sem. Hrs.

| 3 | PSY | 404 | Seminar in Psychology | 3 |
| ---: | :--- | :--- | :--- | ---: |
| 1 | PSY | 471 | Abnormal Psychology | 3 |
| 6 | PSY |  | Elective | 3 |
| $\underline{6}$ |  |  | Minor Courses | $\underline{6}$ |
| 16 |  |  |  | 15 |

${ }^{1}$ French, German, or Spanish

## Psychology Electives

Course Number
PSY 303
PSY 304
PSY 330
PSY 340

Course Title
Applied Psychology
Developmental Psychology 3
Social Psychology
Principles of Learning

Sem. Hrs.
3

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 421 | ${ }^{2}$ Psychology Internship | 3 |
| PSY 422 | ${ }^{2}$ Psychology Internship | 3 |
| PSY 423 | Adolescent Psychology | 3 |
| PSY 482 | Human Sexuality | 3 |
| SOC 330 | Social Psychology | 3 |
|  |  |  |
| ${ }^{1}$ With permission of Instructor |  |  |

## 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 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.
7. Seminar in Psychology (PSY 404) is open only to junior and senior psychology majors.

## COURSE DESCRIPTIONS

PSY 201 General Psychology - 3 hrs. A survey course designed to introduce basic concepts, principles, and phenomena in the science of behavior. Basic topics of psychological measurement, scientific methodology, human growth and development, sensory systems, motivation, emotion, perception, learning, and behavioral deviancy are presented. Prerequisite: None (Offered Fall, Spring, and Summer)

PSY 202 History and Systems of Psychology - 3 hrs. A study of the historical origins of psychology and the development and content of systematic philosophical and scientific bases. Primary schools of psychological thought are considered in terms of content and contribution to contemporary psychology. Prerequisite: PSY 201 (Offered Fall)

PSY 301 Elementary Behavioral Statistics - 3 hrs. Basic and essential statistical concepts are introduced and applied to behavior measurements. Descriptive tools of central tendency, variability, and
standard scores are considered, as well as correlation and basic inferential tools of the t-test and simple analysis of variance. Prerequisite: PSY 201 (Offered Fall, Spring, and Summer)

PSY 303 Applied Psychology - 3 hrs. A survey course emphasizing the application of basic principles of behavior to life situations. Of specific concern in such application is consideration of business, industry, advertising, 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 Fall and Spring)

PSY 307 Introduction to Research - 3 hrs. This course is an introduction to basic concepts of scientific research methodology and statistical analysis. Individualized research projects allow students to collect and analyze date, using relevant methodological and statistical concepts. Students will deal with general procedural problems and the writing of research reports. Prerequisite: PSY 201 and PSY 301 (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 402 Psychology of Adjustment - 3 hrs. A survey course presenting human behavior as a constant adjustment to internal and external conditions. Basic adjustive processes and responses are discussed with emphasis on reactions to frustration and conflict. Defense mechanisms and behavioral abnormalities are also considered. Prerequisite: PSY 201 (Offered Spring)

PSY 403 Educational Psychology / (EDU 403) - 3 hrs. An analysis of the principles of classroom learning. The major concepts, theories, and research of the acquisition of knowledge and interpersonal social skills are emphasized, with attention given to measurement and evaluation. Educational application of learning principles is stressed. Prerequisite: PSY 201 (Offered Fall, Spring, and Summer)

PSY 404 Seminar in Psychology - 3 hrs. A life-oriented consideration of problems and issues in contemporary psychology. Discussion areas include graduate school opportunities, career opportunities, overviews of specific areas of psychology, trends in research and applications, historical significant contributions to psychological knowledge, and topics of student-specified interest. Required of majors and open only to juniors and seniors. Prerequisite: PSY 201 and junior or senior standing (Offered Spring)

PSY 405 Individual Study in Psychology - 3 hrs. A course designed to encourage, facilitate, and guide individual research in specific interest areas dictated by the advanced psychology student. A one-
to-one student-faculty ratio is provided to allow individual attention. Open only to senior majors with the permission of Instructor. Prerequisite: PSY 201 (Offered Fall and Spring)

PSY 406 Industrial Psychology - 3 hrs. This course emphasizes the role of human factors in the industrial world. It addresses the problems of training personnel and improving working conditions. Prerequisite: PSY 201 (Offered Fall and Spring)

PSY $415 \quad$ Physiological Psychology - 3 hrs. A functional analysis of the intern 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)

PSY 416L Experimental Psychology Lab-1 hr. Laboratory investigation of verbal learning, psychophysics, parapsychology, and individual differences. Prerequisite: PSY 201 Corequisite: PSY 416 (Offered Spring)

PSY 421 Psychology Internship I-3 hrs. Field placement of advanced standing psychology majors. This course is designed to provide supervised practical experience on a paraprofessional level in a clinical, education, or research setting of relevance to psychology. Open only to senior majors with permission of advisor. Prerequisite: PSY 201 (Offered Fall, Spring and Summer)

PSY 422 Psychology Internship II - 3 hrs. Same as PSY 421, but allows additional hours credit. Prerequisite: PSY 201 (Offered Fall, Spring and Summer)

PSY 423 Adolescent Psychology - 3 hrs. This course is designed to study the developmental changes between 12 and 19 years of age. Topics include physical, mental, emotional, social, and moral aspects of development as well as factors that influence development. Various technological orientations will be discussed and integrated. Prerequisite: PSY 201 (Offered Spring)

PSY 471

PSY 482

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)

Human Sexuality - 3 hrs . This is an intense study of the physiological, psychological, sociological, and ethical considerations of human sexuality. Prerequisite: PSY 201 (Offered Spring)

## SPECIAL EDUCATION PROGRAM AREA

Councill Training Building

Throughout the United States there is a great demand for teachers who have had academic training and professional experience with exceptional children. The certification provides a four-year course of study leading to a baccalaureate degree in Special Education with eligibility to apply for Alabama Class B certification in Early Childhood Special Education, Collaborative Teacher (K-6) and Collaborative Teacher (6-12).

This curriculum is designed to prepare future teachers of exceptional children. These teacher preparation programs provide opportunity for development of the following:
A. an understanding of the conditions which make children exceptional, and the associated behavioral problems;
B. basic knowledge of methods of organization, curriculum development, and instructional procedures for exceptional children; and
C. experience with exceptional children through a variety of practicum activities.

A score of 300 on the Alabama Basic Skills Test, a speech language-hearing test, and an interview are required prior to a student's full admission to all programs. In addition to teacher education programs, there is a non-certification program in Speech-Language Pathology. This program will prepare a student for graduate study and for work in a clinical setting but will not qualify him or her for a teaching certificate in the State of Alabama.

Requirements for majors in Special Education are as follows:
A. Students following a curriculum designed to prepare them for careers in Special Education must make a minimum grade of 2.5 in all courses in special, professional education, and general education.
B. Students majoring in Special Education are responsible for providing transportation as related to their particular field experience.
C. Formal admission to a teacher education program and permission of instructor are not required for registration.

# EARLY CHILDHOOD SPECIAL EDUCATION <br> 133 Semester Hours 

| First | Semester |  |
| :--- | :--- | :--- |
| ORI | 101 | Survival Skills I |
| ENG | 101 | Composition I |
| MTH | 110 | Finite Math or |
| MTH | 112 | Pre-Calculus Algebra |
| BIO | 101 | General Biology I |
| BIO | 101 L | General Biology Lab I |
| HED | 101 | Personal \& Comm Hlth |
| HIS | 101 | World History I |

First Semester

| ENG | 203 | World Literature I |
| :--- | :--- | :--- |
| PHY | 101 | Physical Science I |
| PHY | 101 L | Physical Science Lab I |
| EDU | 301 | Methods of Lang. Arts |
| SOC | 102 | Intro to Sociology |
| EDU | 102 | Intro to Teacher Education |
| SPE | 201 | Intro to Study Excep. Child |

First Semester

| ECH | 303 | M/M of Early Childhood |
| :--- | :--- | :--- |
| EDU | 411 | Instructional Technology |
| ENG | 205 | General Speech |
| EDU | 403 | Educational Psychology |
| SPE | 319 | Lifespan Planning |
| PED |  | Physical Education Activity |


| Sem. Hrs. | Second Semester |  | Sem.Hrs |
| :---: | :---: | :---: | :---: |
| 1 | ENG 102 | Composition II | 3 |
| 3 | MTH 113 | Pre-Calculus Trig | 3 |
| 3 | HIS 203 | Fnd of Amer. History \& Govt. | 3 |
| (3) | PED | PED Activities | 2 |
| 3 | ART 101 | Art Appreciation or | 3 |
| 1 | MUS 101 | Music Appreciation | 3 |
| 2 |  |  | 14 |
| 3 |  |  |  |
| 16 |  |  |  |

## Sophomore Year

Sem. Hrs. Second Semester Sem Hrs
3 ENG 204 World Literature II 3
3 PHL 201 Introduction to Philosophy 3
1 ECO 200 Basic of Economics 3
3 EDU 311 Human Growth/Development 3
3 EDU 302 M/M of Tchg Social Studies 3
3 SPE 205 Language Development $\underline{3}$
$\underline{3}$
19
Sem. Hrs. Second Semester
Sem.Hrs

3

3
3

3

## Junior Year

Sem. Hrs. Second Semester
Sem Hrs
3 SPE 426 Collaborative Consultation 3
3 SPE 306 M/M of Early Child. Special Ed. 3
3 SPE 326 Mgt of Classroom Behavior 3
3 HDF 307 Motor and Perceptual Dev. 3
3 NHM 404 Fund of Nutrition in ECE 3
$\underline{1}$ ECH 401 M/M in Early Childhood $\underline{3}$
16 18

## Senior Year

First Semester
EDU 307 Principles of Teaching
SPE 309 Adapt Tech \& Meth
SPE 327 Assessment in ECSE
SPE 328 Learning Strategies
Freshman Year

## COLLABORATIVE (K-6)

## 128 Semester Hours

Freshman Year

First Semester

| ORI | 101 | Survival Skills I |
| :--- | :--- | :--- |
| ENG | 101 | Communication Skills I |
| MTH 110 | Finite Math or |  |
| MTH 112 | Pre-Calculus Algebra |  |
| BIO | 101 | General Biology I |
| BIO | 101 L | General Biology Lab I |
| HED | 101 | Personal \& Comm HIth |
| HIS | 101 | World History I |

First Semester
ENG 203 World Literature I
PHY 101 Physical Science I
PHY 101L Physical Science Lab I
EDU 301 Methods of Language Arts
SOC 201 Intro to Sociology
EDU 102 Intro to Teacher Education
SPE 201 Intro to Study Except Child

Sem. Hrs. Second Semester
Sem.Hrs
1 ENG 102 Communication Skills II 3
3 MTH 113 Pre-Calculus Trig 3
$3 \quad$ HIS 203 Fnd of Amer. History \& Govt. 3
(3) PED PED Activities 2

3 ART 101 Art Appreciation 3
$\mathbf{1}$ MUS 101 Music Appreciation $\quad \underline{\mathbf{3}}$
2
$\underline{3}$
16

Sophomore Year
Sem. Hrs. Second Semester
Sem Hrs
3 ENG 204 World Literature II 3
3 PHL 201 Introduction to Philosophy 3
1 ECO 200 Basic of Economics 3
3 EDU 311 Human Growth/Development 3
3 EDU 302 M/M of Tchg Social Studies 3
3 SPE 205 Language Development $\underline{3}$
$\underline{3}$
19

## Junior Year

First Semester

| EDU | 305 | M/M of Tchg Mathematics | $\mathbf{3}$ | PSY | 201 | General Psychology | $\mathbf{3}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| EDU | 401 | History/Philosophy of Education | $\mathbf{3}$ | EDU | $\mathbf{3 0 7}$ | Principles of Teaching | $\mathbf{3}$ |
| EDU | $\mathbf{3 0 3}$ | M/M of Teaching Science/HIth | $\mathbf{3}$ | EDU | $\mathbf{4 1 1}$ | Instructional Technology | $\mathbf{3}$ |
| SPE | $\mathbf{3 0 3}$ | Assessment of Child (K-6) | $\mathbf{3}$ | ENG | 205 | General Speech | $\mathbf{3}$ |
| SPE | $\mathbf{3 1 9}$ | Transitioning Across the Grades | $\mathbf{2}$ | SPE | $\mathbf{4 2 6}$ | Collaborative Consultation | $\mathbf{3}$ |
| SPE | $\mathbf{3 2 8}$ | Learning Strategies | $\underline{\mathbf{3}}$ | SPE | $\mathbf{3 2 6}$ | Mgt of Classroom Behavior | $\underline{\mathbf{3}}$ |
|  |  |  | $\mathbf{1 7}$ |  |  |  | $\mathbf{1 8}$ |

Senior Year

| SPE | 432 | M/M Tchg Child K-3 w/Dis | 3 | SPE | 410 | Coun Parents of Except Child | 2 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| EDU | 403 | Educational Psychology | 3 | SPE | 409 | Internship (6-12) | 9 |
| SPE | 403 | IEP/IFSP Writing | $\mathbf{3}$ |  |  |  | 11 |



## COLLABORATIVE TEACHER (6-12) <br> 129 Semester Hours

## Freshman Year

First Semester

| ORI 101 | Survival Skills I | 1 | ENG 102 | Communication Skills II | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ENG 101 | Communication Skills I | 3 | MTH 113 | Pre-Calculus Trig | 3 |
| MTH 110 | Finite Math or | 3 | HIS 203 | Fnd of Amer. History \& Govt. | 3 |
| MTH 112 | Pre-Calculus Algebra | (3) | PED | PED Activities | 2 |
| BIO 101 | General Biology I | 3 | ART 101 | Art Appreciation | 3 |
| BIO 101L | General Biology Lab I | 1 | MUS 101 | Music Appreciation | $\underline{3}$ |
| HED 101 | Personal \& Comm Hlth | 2 |  |  | 17 |
| HIS 101 | World History I | $\underline{3}$ |  |  |  |
|  |  | 16 |  |  |  |

Sem. Hrs. Second Semester
Sem.Hrs

Sophomore Year

First Semester
Sem. Hrs. Second Semester
Sem Hrs

| ENG | 203 | World Literature I |  |
| :--- | :--- | :--- | ---: |
| PHY | 101 | Physical Science I | 3 |
| PHY | 101L | Physical Science Lab I |  |
| EDU | 421 | M/M Tchg Eng in Sec Schs |  |
| SOC | 201 | Intro to Sociology | 3 |
| EDU | 102 | Intro to Teacher Education | 3 |
| SPE | 201 | Intro to Study Except Child | $\mathbf{3}$ |


| $\mathbf{3}$ | ENG 204 | World Literature II | $\mathbf{3}$ |
| :--- | :--- | :--- | :--- |
| $\mathbf{3}$ | PHL 201 | Introduction to Philosophy | $\mathbf{3}$ |
| $\mathbf{1}$ | ECO 200 | Basic of Economics | $\mathbf{3}$ |
| $\mathbf{3}$ | EDU | 311 | Human Growth/Development |
| $\mathbf{3}$ | EDU | $\mathbf{4 2 2}$ | M/M Tchg Math in Sec Schs |
| 3 | SPE | $\mathbf{3 0 5}$ | Language Development |
| $\underline{\mathbf{3}}$ |  |  | $\underline{\mathbf{3}}$ |

## Junior Year

| EDU | 409 | Reading in Content Area | $\mathbf{3}$ | PSY | 201 | General Psychology | $\mathbf{3}$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| EDU | 401 | History/Philosophy of Education | $\mathbf{3}$ | EDU | 424 | Tchng Science in Sec Schools | $\mathbf{3}$ |
| EDU | $\mathbf{4 2 3}$ | M/M of Teaching Social Studies | $\mathbf{3}$ | EDU | 411 | Instructional Technology | $\mathbf{3}$ |
| SPE | $\mathbf{4 3 6}$ | Assessment in Secondary Schools | $\mathbf{3}$ | ENG | 205 | General Speech | $\mathbf{3}$ |
| SPE | $\mathbf{3 1 9}$ | Transitioning Across the Grades | $\mathbf{2}$ | SPE | $\mathbf{4 2 6}$ | Collaborative Consultation | $\mathbf{3}$ |
| SPE | $\mathbf{4 3 5}$ | Learning Strategies for Adoles | $\underline{\mathbf{3}}$ | SPE | $\mathbf{4 3 1}$ | Behavior Mgt for Sec Tchrs | $\underline{\mathbf{3}}$ |
|  |  |  | $\mathbf{1 7}$ |  |  |  | $\mathbf{1 8}$ |

Senior Year

| SPE | 430 | M/M of Content Area Inst |
| :--- | :--- | :--- |
| EDU | 403 | Educational Psychology |
| SPE | 403 | IEP/IFSP Writing |
| SPE | 432 | M/M Functional Curriculum |
| AGB | 401 | Methods of Tchg Agriscience |

## 3 SPE 409 Internship (6-12) $\quad 9$

3 3 $\underline{3}$

## 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

SPE 303

SPE 304

SPE 306

SPE 309

SPE 319

Introduction to Early Childhood Special Education (ECSE) - 3 hrs. Covers the rationale for ECSE and provides a comprehensive overview of major principles and practices relating to the provision of services to young children with disabilities. Procedures for screening, diagnosis, and educational assessment are included. Transdisciplinary and interdisciplinary team processes are emphasized throughout the course. Prerequisite: None (Offered Fall)

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)

Parent and Family Assessment - 3 hrs. Methods in family assessment and evaluation as well as methods in parent counseling and support are included. Techniques and programs of parent training and education are important aspects of this course. Prerequisite: None (Offered Spring)

Methods and Materials in ECSE - 3 hrs. Designed to give beginning teachers requisite skills in designing, developing, implementing, and evaluating methods and materials to be used with preschool children with disabilities. Practicum required. Prerequisite: SPE209 (Offered Spring)

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)

Lifespan Planning - 3 hrs. The historical development of lifespan planning, model programs for the handicapped, techniques for developing and implementing a program and instructional strategies. Prerequisite: None (Offered Fall)

SPE 326 Management of Classroom Behavior - 3 hrs. A study of the application and skills in the use of behavior management skills, including direct observations, behavioral interventions, analysis, and subsequent program modification based upon analysis. Prerequisite: None (Offered Spring and Fall)

SPE 328 Learning Strategies - 3 hrs. This course is designed to provide teachers of students with mild disabilities with current strategies for assessing student learning styles and modifying instructional methods for optimal learning. Prerequisite: None (Offered Fall)

SPE 400 Severely/Profoundly Retarded - 3 hrs. Characteristics, assessment procedures and educational programming for the severely profoundly retarded individual are emphasized in this course. Prerequisite: None (Offered Spring)

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 $403 \quad$ IEP/IFSP Writing - 3 hrs. A course which focuses on the legal requirements and the procedures and techniques for developing IEPs from referral to implementation. Prerequisite: None (Offered Fall)

SPE 404 Practicum in ECSE - 3 hrs. Supervised practical experiences in facilities which provide direct services in ECSE. Supervision is provided by professionals in the field. Sites include both public school settings and private agencies. Prerequisites: Junior status, HDF 307, ECH 311, ECH 303, ECH 401, SPE 209, SPE 306, SPE 309, SPE 327. (Offered Fall)

SPE 405 Methods and Materials of Teaching Children in Grades 4-6 with Disabilities - 3 hrs. This course is designed to give beginning teachers requisite skills in designing, developing, implementing and evaluating methods and materials to be used with young children with disabilities in grades 4-6. (Offered Spring)

SPE 409 Directed Teaching in Special Education - 9 hrs. A course consisting of twelve weeks of full-time teaching under direct supervision of certified experienced teachers in Special Education classes in off-campus public schools. Weekly meetings are held on campus with university supervisors. Prerequisite: Admission to the Teacher Education Program (Offered Fall and Spring)

SPE 410 Counseling with Parents of Exceptional Children - 3 hrs. Discussion and application of the rationale for positive communication and interaction with parents and techniques of facilitation. Prerequisite: None (Offered Spring)

Program Development and Organization in Early Childhood Special Education - 3 hrs. Study of the philosophical and psychological foundations for ECSE program design. A variety of validated curricula will be analyzed and compared. Knowledge of normal growth and development sequences will be used to evaluate curricula. This course will require in-depth study of the objectives, organizational structure, and efficacy of the major ECSE curricula. Prerequisite: None (Offered Spring)

Collaborative Consultation - 3 hrs . This course is designed to provide prospective teachers (ECSE, Collaborative K-6 and Collaborative 1-6) knowledge and skills required to successfully
facilitate intervention strategies with regular classroom teachers and other support personnel in meeting the needs of students with disabilities. This course also serves as a professional elective for prospective teachers of early childhood, elementary, and secondary students. (Offered Spring)

SPE $430 \quad$ Materials and Methods of Content-Area Instruction - 3 hrs . This course is designed to give beginning teachers requisite skills in designing, developing, implementing and evaluating methods and materials of content area instruction for children and adolescents with disabilities in grades 6-12. (Offered Fall)

SPE 431 Behavior Management for Secondary Teachers - 3 hrs. A study of the application and skills in the use of behavior management skills, including direct observations, behavioral interventions, analysis, and subsequent program modification based upon analysis. Prerequisite: None (Offered Spring and Fall)

SPE 432 Material and Methods of Functional Curricula - 3 hrs. This course is designed to give beginning teachers requisite skills in designing, developing, implementing and evaluating methods and materials of functional curricula for children and adolescents with disabilities in grades 6-12. (Offered Spring)

Learning Strategies for Adolescents (Grades K-6) - 3hrs. This course is designed to provide teachers of children and adolescents with disabilities with current strategies for assessing student learning styles and modifying instructional methods for optimal learning. (Offered Fall)

SPE 436 Assessment of Secondary Students - 3 hrs. Development of the essential skills required to diagnose skills deficits, and to plan and implement educational strategies to remediate deficits experienced by exceptional learners. Practical experiences using assessment techniques will be stressed. Prerequisite: SPE 201 (Offered Fall)

## COMMUNICATIVE SCIENCES \& DISORDERS

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. SpeechLanguage 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 preprofessional 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 speechlanguage 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. Upon completion of the sophomore year, students will be evaluated for permission to take upper division courses. Completion of this program provides the required course work and practicum experiences needed for entering a graduate training program in speech-language pathology.

## COMMUNICATIVE SCIENCES AND DISORDERS CURRICULUM

126 Semester Hours
Freshman Year
First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| ORI | 101 | Survival Skills I | 1 | BIO | 102 | General Biology II | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| BIO | 101 | General Biology I | 3 | BIO | 102L | General Biology Lab II | 1 |
| BIO | 101L | General Biology Lab I | 1 | BIO | 221 | Human Anat \& Phys | 3 |
| ENG | 101 | Composition I | 3 | BIO | 221L | Human Anat \& Phsy Lab | 1 |
| HED | 101 | Personal \& Comm. Health | 2 | ENG | 102 | Composition II | 3 |
| HIS | 101 | World History I | 3 | MUS | 101 | Music Appreciation | 3 |
| MTH 112 | Pre-Calculus Algebra | $\underline{3}$ | PED | 103 | Fitness for Life | 1 |  |
|  |  | 16 | PED |  | PE Elective | $\underline{1}$ |  |
|  |  |  |  |  |  | 16 |  |

First Semester

Sophomore Year

First Semester

| CSD | 202 | Survey Comm. Disorders |
| :--- | :--- | :--- |
| CSD | 203 | Phonetics |
| CSD | 204 | Anat. \& Phys. Speech Mech. |
| ENG | 203 | World Lit I |
| SOC | 201 | Intro. to Sociology |

First Semester

| ART | 101 | Art Appreciation |
| :--- | :--- | :--- |
| CSD | 307 | Principles of Diagnostics |
| CSD | 308 | Basic Audiology |
| CSD | 324 | Lang. \& Audio Perception |
| PSY | 201 | General Psychology |

Sem. Hrs. Second Semester
Sem. Hrs.

| 3 | CSD 205 | Language Dev. for SLP | 3 |
| ---: | :--- | :--- | ---: |
| 3 | CSD 207 | Speech \& Hearing Science | 2 |
| 3 | CSD 215 | Articulation | 3 |
| 3 | EDU 311 | Human Growth \& Dev. | 3 |
| $\underline{3}$ | ENG 204 | World Lit II | 3 |
| 15 | ENG 205 | General Speech | $\underline{3}$ |
|  |  |  | 17 |

Junior Year
Sem. Hrs. Second Semester Sem. Hrs.

| 3 | CSD | 219 | Computer in Comm Dis | 3 |
| :---: | :---: | :---: | :--- | :---: |
| 3 | CSD | 310 | Clinical Procedures | 3 |
| 3 | CSD | 312 | Language Intervention | 2 |
| 3 | CSD | 323 | Comm. for Hearing Impaired | 3 |
| 3 | CSD | 332 | Augmentative Comm. | 3 |
| $\overline{15}$ | CSD | 414 | Advanced Speech Pathology | $\underline{3}$ |
|  |  |  |  | 17 |

## Senior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| CSD | 321 | Practicum I |
| :--- | :--- | :--- |
| CSD | 402 | Manual Communication |
| CSD | 417 | Methods/Material SLP |
| CSD | 420 | Speech \& Language Assess. |
| ECO | 200 | Basic Economics |

3 CSD 406 Practicum II 3
3 CSD 421 Multicultural Issues in Com. 3
3 CSD 423 Sp. \& Lang. Problems in Aged 3
3 ENG 304 Advanced Composition 3
$\underline{3}$ SPE 326 Mgmt Classrm Bhav $\underline{3}$
*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. 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 Teaching the Remediation of Articulation Disorders and Communication Skills - 3 hrs. Professional terminology, classifying problems, etiologies, appropriate diagnostic and therapeutic procedures, and associated problems. Prerequisites: CSD 202, CSD 203, and CSD 204 (Offered Spring)

CSD 219 Computers in Communication Disorders - 3 hrs. A course designed to acquaint the student with the elements of PC operating system as well as software applications such as word processing, database and spreadsheets. It will emphasize traditional, current and emerging instructional technology in the therapy room. Students will learn various techniques for designing clinical therapy instructional materials, applying and integrating technology in therapy, and using microcomputer and software applications to promote effective therapy management. This course offers the opportunity to design lessons, select appropriate media formats, and conduct informal and formal evaluation of the effectiveness of selected media on the learning process. Prerequisite: None (Offered Spring)

CSD 307 Principles of Diagnostic Assessment in Communication Disorders - 3 hrs. Methods of classifying communication disorders for assessment purposes. Utilization of diagnostic tests, test interpretation, and report writing of test results on speech and language disorders. 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. Prerequisite: CSD 203, CSD 204, CSD 205, and CSD 215 (Offered Fall)

CSD 310 Clinical Procedures in Speech Pathology - 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. Prerequisite: CSD 203, CSD 204, CSD 205, CSD 215, and CSD 307 (Offered Fall, Spring, and Summer)

CSD 312 Language Intervention and Communication Skills for the Moderately and Severely Disabled Individual - 2 hrs. A course involving the study of language remediation and intervention for developing communication skills in severely and profoundly disabled individuals. Prerequisite: None (Offered Spring)

CSD 321 Supervised Clinical Practicum I-3 hrs. Clinical experiences with children and adults who have communication disorders. Prerequisite: CSD 310 (Offered Fall, Spring, and Summer)

CSD 323 Communication for the Hearing Impaired - 3 hrs. A study of the theories and methods of working with the hearing impaired. Emphasis will be placed on communication disabilities related to hearing losses. Prerequisite: CSD 308 (Offered Spring)

CSD 324 Principles of Teaching Language and Auditory Perception - 3 hrs. In this course, emphasis is placed on language disabilities and auditory perceptual disorders due to a variety of physiological and/or environmental differences. Prerequisite: CSD 205 (Offered Fall)

CSD 332 Augmentative Communication - 3 hrs. This course is designed to increase the student's awareness and functional knowledge of augmentative and alternative communication (AAC)
devices. AAC is the supplementation and/or replacement of natural speech and/or writing using aided and/or unaided symbols (e.g., Blissymbols, fingerspelling, gestures, ideographs, logographs, manual signs, pictographs) and the related means of selection and transmission of such symbols. This course offers a survey of the issues that address the individual needs and requirements of those that
utilize AAC devices. The student will be exposed to those issues that must be addressed in order to provide appropriate and efficacious services. Prerequisites: CSD 307, CSD 308, and permission to take upper division courses (Offered Spring)

CSD 402 Manual Communication - 3 hrs . This course is designed to give the student knowledge and skills in providing supportive and substantive help through non-auditory cues to persons having communicative problems associated with hearing impairment and to persons with neurological impairments extending beyond the peripheral hearing organs which make it difficult to acquire language using primary auditory input. Prerequisite: None (Offered Fall)

CSD 406 Supervised Clinical Practicum II-3 hrs. Clinical experience with children and adults who have communication disorders. Enrollment limited to 10. Prerequisite: CSD 321 (Offered Fall, Spring, and Summer)

CSD 414 Advanced Speech Pathology - 3 hrs. A study of professional terminology, classification, etiologies, symptomologies, and appropriate therapy procedures used with individuals having specific communication disorders. Prerequisite: CSD 307 (Offered Spring)

CSD 417 Methods and Materials for Speech-Language Pathology - 3 hrs. A study of methods and materials for speech-language pathologists including coordination, planning, professional relationships and program structure. Current materials for communication disorders are discussed and utilized. Prerequisite: None (Offered Fall)

CSD 420 Speech and Language Assessment - 3 hrs. This course will address the principles and procedures for assessing and diagnosing speech and language disorders. This course represents a competency-based approach designed to enable the student to develop skills specific to knowledge, comprehension, and application levels of learning which are required. The prescribed sequence of skills and knowledge at the required competency levels is designed to contribute to the development of a skilled, entry-level practitioner. Prerequisites: CSD 414 and permission to take upper division courses (Offered Fall)

CSD 421 Multicultural Issues in Communicative Disorders - 3 hrs. This course is designed to increase the student's awareness of the cultural differences and practices of various ethnic and racial groups. This course offers a survey of the issues that address the individual and collective differences that must be addressed in order to provide appropriate and efficacious services. Prerequisites: CSD 414 and permission to take upper division courses (Offered Spring)

CSD 423 Speech and Language Problems in the Aged - 3 hrs. This course is intended to serve as a source for understanding normal communication changes, communication disorders, and service delivery options from a gerontological perspective. This course will explore the concept of understanding and developing strategies for management of age-related communication deficits. Information is presented within the context of a unified model of communicative functioning in the elderly. Emphasis will be placed on key issues, vocabulary associated with the management of the impaired elderly, and topics of particular interest in considering communicative behavior. Prerequisites: CSD 414 and permission to take upper division courses (Offered Spring)

# SCHOOL OF ENGINEERING AND TECHNOLOGY 

Dr. Arthur J. Bond, Dean<br>117 Carver Complex Hollins Wing<br>256-851-5560

## GENERAL INFORMATION

The School of Engineering and Technology provides educational opportunities for students with interests in preparing for teaching or for industrial careers in technical areas. The various curricula in the School have been planned and organized in such a way that students may receive not only broad, intensive training in their major fields, but also that they may develop significantly in liberal subject matter aspects. The School of Engineering and Technology offers programs of study in three engineering disciplines, three engineering technology disciplines, industrial technology with both teaching and non-teaching options available and computer science.

The Department of Civil Engineering offers a professional engineering program leading to a Bachelor of Science degree in Civil Engineering (BSCE). Candidates for graduation from this program are required to take the Fundamental of Engineering (FE) examination, which is the first step toward registration as a Professional Engineer.

The Departments of Electrical and Mechanical Engineering are new additions to the engineering offerings and are available in their respective academic departments. The Department of Electrical Engineering offers a professional engineering program leading to a Bachelor of Science degree in Electrical Engineering (BSEE). Similarly, the Department of Mechanical Engineering offers a professional engineering program leading to a Bachelor of Science degree in Mechanical Engineering (BSME). Graduates of both programs are eligible to take the Fundamental of Engineering (FE) examination.

The Department of Technology offers programs of instruction in engineering technology and industrial technology. The Engineering Technology program provides instruction in civil, electrical, and mechanical engineering technology at the baccalaureate degree level and leads to the Bachelor of Science in Engineering Technology (BSET). The Industrial Technology program offers programs of study with a teaching option in Technical or Technology Education, and a non-teaching option with concentrations in Manufacturing, General Industry, Graphic Arts/Printing Production, Industrial Management, Industrial Quality Assurance, and Industrial Safety. Both options lead to a Bachelor of Science in Industrial Technology (BSIT) degree. This program prepare students for either teaching or leadership positions in vocational/technical education programs at the middle school, high school, and post secondary levels or management level positions in industry.

The Department of Computer Science provides a course of study designed to give students a thorough grounding in both theoretical and practical areas of computer science. Computer Science continues to be a rapidly growing and changing field with a wide variety of occupational opportunities. The degree conferred on graduates of this program is the Bachelor of Science in Computer Science (BSCS).

## ADVISORS

Every student enrolled in a major offering of the School of Engineering and Technology must have an advisor. All students have as their advisors one of the instructors in their major curricula, or some other well qualified professional who understands the curriculum.

## BOOKS AND SPECIAL COURSE FEES

All students enrolled in the School of Engineering and Technology (SET) are expected to purchase books promptly at the beginning of the term, or as soon after the beginning of the term as the books become available in the book store. Students enrolled in SET can expect to pay from $\$ 175$ upward for books, instruments and supplies each semester.

In addition to purchasing the required books for courses, students will be expected to purchase such tools, aprons, or coveralls as may be required of those enrolled in specified areas. In some areas, the students will be expected also to purchase instruments and special supplies. Students will also pay special course fees each semester in varying amounts, depending upon the curriculum in which they are enrolled. A list of fees is published in this catalog.

## IRREGULAR OFFERING OF COURSES

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.

## REQUIREMENTS FOR ADMISSION AND GRADUATION

The School of Engineering and Technology requirements for admission and graduation are the following:

1. Satisfactory completion of entrance examinations.
2. The successful completion of the required semester hours of course work as prescribed in the curriculum with a cumulative grade point average of not less than 2.00.
3. A minimum grade point average of 2.00 in the major field of specialization.

## EVENING DIVISION

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.

## ACADEMIC WORK WHILE ON CO-OP WORK ASSIGNMENTS

Academic credit up to 6 semester hours will be offered for cooperative education work experience. The average will be three semester hours of credit toward graduation for each of two work periods that a co-op student may complete in business or industry and with proper evaluation.

Cooperative work experience is identified in the following manner. The first digit of the number refers to the year of study; and the second digit is the first, second, or third work period in the particular year -- CWE 130, the summer of the freshman year; CWE 210, 220, 230, and on through the four years of work periods.

## LETTER PREFIXES USED WITH COURSE NUMERALS

CE - Civil Engineering<br>CET - Civil Engineering Technology<br>CWE - Cooperative Education Work Experience<br>EE- Electrical Engineering<br>EET - Electrical Engineering Technology<br>EGC - Engineering General Course<br>IT - Industrial Technology<br>MDT - Mechanical Drafting and Design Technology<br>ME- Mechanical Engineering<br>MET - Mechanical Engineering Technology<br>TBC - Technology Basic Course<br>TGC - Technology General Course

## SCHOOL OF ENGINEERING AND TECHNOLOGY

 DEPARTMENT OF CIVIL ENGINEERINGDr. G. S. Liaw, Chair

208 Carver Complex Hollins Wing

256-851-5565

## MISSION STATEMENT

The Department is committed to preparing its students for immediate entry into the engineering profession as well as into graduate programs of study. The Department is also committed to research in order to place its faculty and students at the forefront of development in the profession of civil engineering. This brings the latest advances into the classroom positioning students to lead the profession into the twenty-first century.

The program offers opportunities to students who previously had limited access to education and trains these students to contribute to the civil engineering profession. It thereby reflects the University scope and mission.

## EDUCATIONAL OBJECTIVES

The objectives of the Civil Engineering program are to produce graduates who:

1. Successfully practice civil engineering in industry and/or government;
2. Are competent enough to pass the Fundamentals of Engineering (FE) Examination leading to professional registration;
3. Are able to pursue graduate degrees; and
4. Recognize the need for scholarship, leadership and service to society.

## PROGRAM OVERVIEW

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 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 the environment and help make our activities productive, safe, and enjoyable.

Civil Engineering is a very broad field; it draws from the basic sciences of mathematics, chemistry, and physics. The scope and complexity of civil engineering, as measured by the degree of involvement and interaction with other disciplines and professions, continues to grow with that of the nation's economy and population. This field has always contributed to, and benefited from, the advancement of science and technology.

Civil engineering enjoys one of the highest demands for new graduates. Federal, state, county, and city governments, as well as private sectors, employ civil engineering graduates. Civil engineering graduates with an advanced degree in a specialized area, such as construction, environmental engineering, structural engineering, or transportation, are in great demand in national research laboratories and universities.

The first two years of study primarily concentrate 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.

The Department of Civil Engineering at Alabama A\&M University provides a general academic background and allows a student to concentrate on a specialized area. Graduates are prepared to directly enter a career in engineering or business or to continue their education in graduate school. The Department offers a major leading to
the Bachelor of Science in Civil Engineering and provides basic courses in all of the following areas:

1. Structural Analysis and Design
2. Geotechnical Engineering
3. Environmental Engineering and Water Resources
4. Transportation Engineering and Planning

## STUDENT ORGANIZATION

All civil engineering majors are strongly encouraged to join the Student Club 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 Club is the most important and active student organization in the Department. The club members participate in the local branch meetings and other activities, such as Habitat for Humanity projects and tutoring underclassmen. The Club also attends the yearly Southeastern Regional ASCE Student Conference and competes with other civil engineering students around the region. The faculty advisor, Mr. James Foreman, assists the Club in activity planning and other matters.

## ACCEPTANCE POLICY AND GENERAL REQUIREMENTS

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.

## PROGRAM GENERAL REQUIREMENTS

Entering Civil Engineering majors are required to report to the department office and interview with the department chairperson as soon as possible. Each student admitted to the Department of Civil Engineering is assigned an advisor for the duration of the program. The advisor will advise the student with proper course sequencing, course planning, and other academic matters. Each student should have an active file in the department office, which includes the student's enrollment information and a copy of his/her Student Scholastic Record (SSR) Form. The SSR should be updated each semester either during the period of academic advisement or pre-registration by the advisor. The advisor works with the students to keep track of their progress toward the degree. Prerequisites are required for approval of any advanced courses. Students are advised to earn a grade of C or better in all prerequisites before proceeding to any advanced courses.

## REQUIREMENTS FOR GRADUATION

To meet the requirements for graduation, a student must successfully complete the required 128 semester hours of course work as prescribed in the curriculum with an overall cumulative grade point average of 2.00. A minimum grade point average of 2.00 is also required in all CE and EGC courses. Students must take the Fundamentals of Engineering (FE) Examination prior to graduation.

Transfer credits from other institutions are accepted conditionally and are subject to approval by the Vice President for Academic Affairs. Transfer students must complete at least one-half of the CE courses and earn the final 30 hours of work towards their degree at AAMU.

## CIVIL ENGINEERING (BSCE) 128 Credit Hours

| Freshman Year |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| First Semester | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |  |
|  |  | 1 |  |  |  |  |
| ORI 101 | Survival Skills | 3 | ${ }^{3}$ ENG | 102 | Composition II | 3 |
| ${ }^{1}$ ENG 101 | Composition I | MTH | 126 | Calculus II | 4 |  |
| CHE 101 | General Chemistry I | 3 | CE | 101 | Intro. to Civil Eng | 3 |
| CHE 101L | General Chemistry I Lab | 1 | CHE | 102 | General Chemistry II | 3 |
| ${ }^{2}$ Health Science/PE/MSC Elective | 2 | CHE | 102 L | General Chem II Lab | 1 |  |
| EGC 101 | Eng. Drawing \& Graphics | 3 | PHY | 105 | Physics I | $\underline{4}$ |
| MTH 125 | Calculus I | $\underline{4}$ |  |  |  | $\mathbf{1 8}$ |
|  |  | $\mathbf{1 7}$ |  |  |  |  |
| ${ }^{1}$ ENG103, may be taken by international students | ${ }^{3}$ ENG104, may be taken by international students |  |  |  |  |  |
| ${ }^{2}$ FAS 101, HED 101, NHM 103, OR PE 1xx |  |  |  |  |  |  |

## Sophomore Year

Second Semester Sem. Hrs.
First Semester Sem. Hrs.

$\left.\begin{array}{llllll}\text { MTH } & 227 & \text { Calculus III } & 4 & \text { MTH } & 238 \text { Applied Diff. Equations }\end{array}\right] 3$| 3 |
| :--- |
| PHY |
| 106 |
| Physics II |

Junior Year

| First | meste | Sem. Hrs. |  | Secon | Seme | Sem. |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ${ }^{4}$ History | Sequ | Elective | 3 |  | Se | Elective | 3 |
| ECO | 200 | Basics of Economics | 3 | CE | 304 | Environmental Eng. | 3 |
| EGC | 204 | Engineering Analysis | 3 | CE | 305 | Hydrogeology | 3 |
| EGC | 305 | Fluid Mechanics | 3 | CE | 308 | Soil Mechanics | 3 |
| CE | 306 | Structural Analysis | $\underline{3}$ | CE | 310 | Transportation Systems | 3 |
|  |  |  | 15 | CE | 401 | Structural Steel Des | $\underline{3}$ |
| ${ }^{4}$ Any History sequence |  |  |  |  |  |  | 18 |


|  |  | Senior Yeafe | 408 | Foundation Design | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | CE | 410 | Transportation Eng. \& Des | 3 |
| First Semester | Sem. Hrs. | s. CE | 424 | Civil Engineering Practice | $\underline{3}$ |
| ${ }^{5}$ Humanities (Literature) Elective |  | 3 |  |  |  |
| CE 402 Reinforced Conc |  | 3 |  |  |  |



## COURSE DESCRIPTIONS

CE 101 Introduction to Civil Engineering - 3 hrs. Introduction to civil engineering profession and societies. Engineering ethics. Engineering problem solving, systems of units and dimensions. Technical presentations - written and oral. Basic design concepts (team approach). Personal computer skills. Local field trips and guest lectures are also included. Prerequisite: Consent of instructor (Offered Spring)

CE 201 Surveying - 3 hrs. (2 hours lecture and 2 hours lab.) A study of measurement and error calculation, leveling, traverse and area computation, topographic mapping, triangulation, highway, public land and construction surveying. Computer applications are included. Prerequisite: EGC 101 (Offered Fall)

CE 304 Environmental Engineering - 3 hrs. A survey of environmental pollution and control involving the air, land, and water environments; the management of the environment; and other problems concerning water and sewage treatment, solid waste disposal and treatment. Prerequisites: CHE 102, CHE 102L, and MTH 238; or consent of instructor (Offered Spring)

CE 305 Hydrogeology - 3 hrs . The study of a hydrologic cycle with emphasis on precipitation and runoff, stream flow and groundwater distribution. Geology of groundwater occurrence, groundwater contamination, development and management are also covered. Prerequisite: EGC 305 (Offered Spring)

CE 306 Structural Analysis - 3 hrs . An analysis of stresses and deflections in statically determinate structures caused by fixed and moving loads. Study of influence lines and loading criteria for beams and plane trusses. Introduction to classical analysis of indeterminate structures including the slope deflection and moment distribution methods. Application of computer techniques to structural problems is required. Prerequisites: MTH 227, MTH 238 and EGC 207 (Offered Fall and Summer)

CE 308 Soil Mechanics - 3 hrs. (2 hours lecture and 2 hours lab.) A study of original, formation, classification, identification and subsurface exploration of soil. Physical and mechanical properties of soils, shear strength, consolidation, settlement, and bearing capacity are also covered. Prerequisite: EGC 207 (Offered Spring)

CE 310 Transportation Systems - 3 hrs. Transportation systems including land, air and water transportation for passenger and freight movement; functions of transportation systems; traveled way, vehicle, controls and terminals; transportation system planning, design, operation and maintenance are addressed in this course. Prerequisite: EGC 101 and CE 201 (Offered Spring)

CE 401 Structural Steel Design - 3 hrs. Introduction to the design of steel structures to include behavior of members and their connections. Theoretical and practical basis for proportioning members, using the allowable stress design method, 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.
Prerequisite: EGC 207 and EGC 305 (Offered Spring)
CE 405 Concrete and Aggregates - 3 hrs. (2 hours lecture, 2 hours lab.) A study of engineering properties of plain concrete; influence of cement, aggregates, water and mixtures on the properties of fresh and hardened concretes; mix design; behavior under various types of loading and environments. Prerequisite: EGC 207 (Offered - Consult Advisor)

CE 406 Computer Analysis of Structures - 3 hrs. This course focuses on flexibility and stiffness methods of analysis. Development of matrix methods for both trusses and rigid frames and use of the computer in structural analysis, including finite element method are included. Prerequisites: CE 306 and EGC 104 (Offered - Consult Advisor)

CE 408 Foundation Design - 3 hrs. The study of shallow and deep foundation elements, determination of bearing capacity of spread footings, mat and pile foundations. This course also includes instruction on drilled caissons and piers as well as lateral earth pressure and the design of retaining structures.
Prerequisites: CE 308, Co-requisite: CE 402 (Offered Fall)
CE 409 Public Health Engineering - 3 hrs. A study of the engineering aspects involved in the control of the environment for the protection of health and the promotion of the comfort of man. Discussion will include communicable disease control, air pollution, refuse disposal, industrial hygiene, and radiological health hazards. Prerequisite: CE 304 (Offered - Consult Advisor)

CE 410 Transportation Engineering and Design - 3 hrs. A study of engineering and design basics for highway transportation; elements of highway transportation and their characteristics; drivers; vehicles, volume, density, speed, and travel time; design for safety, service, and economy; highway alignment, cross section and geometric design elements. Prerequisites: EGC 204 and CE 310 (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. Prerequisite: EGC 204, CE 310 or consent of instructor (Offered Fall, Odd Years)

CE 412 Pavement Systems - 3 hrs. A study of the design of highway and airport pavement systems; subgrades, subbases and bases; flexible and rigid pavements; drainage and earthwork; pavement evaluation and maintenance. Prerequisites: EGC 207 and CE 310 (Offered Fall, Even Years)

CE 413 Construction Management - 3 hrs. An introduction to construction project planning and scheduling by network diagrams. Estimating and project control fundamentals; various equipment and productivity are included. Prerequisite: Senior standing (Offered Fall, Even Years)

CE 414 Design of Timber Structures - 3 hrs. A study of wood as an engineering design material. Beams, columns, plywood design, and glued laminated structural members as used in actual design and construction are covered. Prerequisite: CE 306 (Offered Spring)

CE 424 Civil Engineering Practice - 3 hrs. An introduction to the practical concepts necessary to a practicing engineer, such as engineering ethics, engineering economics, estimating, cost analysis, contract bidding, and specification writing. Prerequisite: Senior standing or consent of instructor (Offered Fall)

CE 450 Hydraulics of Open Channel Flow-3 hrs. A study of the mechanics of fluid flow in open channels, as an extension of basic engineering hydraulics and experimental concepts applied to the theory, design, and shape optimization of open channels. Classification of flow, channel cross section, hydraulic jump, stilling basins, specific energy, culvert hydraulics, and the use of design charts and tables are included. Prerequisite: EGC 305 (Offered - Consult Advisor)

CE 455 Wastewater Treatment - 3 hrs. An introduction to wastewater characteristics and treatment processes; biological mechanism, reactors, waste treatment, and kinetics. The engineering design of physical processes such as sedimentation, thickening, and filtration; as well as chemical processes, processing of sludge and advanced wastewater treatment processes are included. A field trip to wastewater treatment plant is required. Prerequisites: CE 304 and EGC305, or consent of instructor (Offered Fall, Odd Years)

CE 456 Solid Waste Disposal - 3 hrs . An introduction to the problem of solid waste management; types and quantities of wastes; collection and transportation of wastes; composting, landfill and incineration; and recycling of wastes and resource recovery. Prerequisite: CE 304 or consent of instructor (Offered - 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 - Consult Advisor)

CE 460 Computer-Aided Design in Civil Engineering - 3 hrs. (2 hours lecture, 3 hours lab.) A course which focuses on the design of Civil Engineering structures/systems using computers. Utilization of graphics and component design programs as design tools is required. Prerequisite: EGC 101 and senior standing (Offered Spring)

CE 470 Civil Engineering Design Project - 3 hrs. An individualized or grouped civil engineering design project completed under supervision of instructor. Prerequisite: Must have completed at least two CE design courses or consent of instructor (Offered Fall and Spring)

CE 480 Special Topics - This course covers selected topics in Civil Engineering. Credit hours to be arranged (Offered as needed)

## GENERAL ENGINEERING COURSE DESCRIPTIONS

EGC 101 Engineering Drawing and Graphics - 3 hrs. (2 hours lecture, 4 hours lab.) A study of principles of design drafting, and graphics as applied to engineering; geometric constructions; multi-view drawing and sketching; and graphical algebra and calculus. The student is introduced to computer graphics package. Prerequisite: Consent of the instructor (Offered Fall, Spring, and Summer)

EGC 104 Computer Programming- 3 hrs. An introduction to the use of the computer as a tool in engineering. Systems and utility programs, programming techniques, recent developments in computing, and practice in solving engineering problems using FORTRAN are included. Prerequisite: Consent of the instructor (Offered Fall, Spring, and Summer)

EGC 204 Engineering Analysis - 3 hrs. An introduction to statistics and data analysis, probability and sampling distributions, quality control, estimation and statistical intervals, testing statistical hypotheses, the analysis of variance, experimental data, regression and correlation, and computer applications in Civil Engineering. Prerequisites: 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, and EGC 101 (Offered Fall and Spring)

EGC 206 Dynamics - 3 hrs. A study of kinematics of a particle; moment of inertia of masses; translation, rotation and plane motion of rigid bodies; principles of work and energy, impulse, and momentum, as applied to engineering problems. Prerequisites: EGC 205 and MTH 126 (Offered Spring)

EGC 207 Strength of Materials - 3 hrs. Concepts of stress and strain, combined stresses, analysis of stresses and deformation in bodies loaded by axial, torsional, and bending loads are covered in this course. Prerequisites: EGC 205 and MTH 126 (Offered Spring and Summer)

Fluid Mechanics - 3 hrs. ( 2 hours lectures, 2 hours lab.) A study of the properties of fluids and fundamental principles governing fluid motion, including fluid statics; conservation of mass; momentum and energy with applications to pipe and channel flow of incompressible fluids. Prerequisites: EGC 206, MTH 227 and MTH 238 (Offered Fall)

# DEPARTMENT OF ELECTRICAL ENGINEERING 

Dr. V. Trent Montgomery, Chair<br>222 Carver Complex Hollins Wing<br>256-851-5590

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 Program Option, the Computer Engineering Option, and the 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 Board (EAB) of the Accrediting Board for Engineering and Technology (ABET) as well as those of the Southeastern Association of Colleges and Schools (SACS).

## PROGRAM OBJECTIVES

This program provides the necessary educational environment such that students will:

1. Obtain sufficient knowledge to apply state-of-the-art practices to the products, processes or services in which they are involved,
2. Obtain sufficient knowledge to analyze and solve complex electrical engineering problems and design complex electrical engineering systems by applying mathematics, physical sciences and engineering principles,
3. Obtain the ability to interface with all levels of society - professional and non-professional - with which they associate themselves,
4. Obtain an understanding and appreciation of the impact of their engineering solutions on society and the environment,
5. Gain sufficient knowledge to utilize available resources and productivity tools such as the library, computers and the Internet to enhance the products, processes or services in which they are involved,
6. Develop the ability to communicate orally, graphically and in written form such that ideas are transferred in a proper and effective manner; and
7. Obtain a thorough understanding of their professional and ethical responsibility and recognition of the need for continuous lifelong educational enhancement.

The Department of Electrical Engineering and the faculty will:

1. Conduct research and be active in service to maintain competencies and provide an enhanced educational environment for students; and
2. Encourage cultural diversity in all aspects of the profession by being a leader in the education of minority and women students.


## 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 an minimum overall grade point average of 2.5 and completed at least the first course of calculus with a grade of "C" or better.
III. Transfers from Other Institutions

Students desiring to transfer to the program must be in good academic standing at the College or University from which they are transferring. In addition, they must have maintained a grade point average of 2.5 or better, completed at least the first course of calculus with a grade of "C" or better, and completed the requirements of the University College at Alabama A\&M University, if they transfer in fewer than 30 semester hours.

## GRADUATION REQUIREMENTS

A student must successfully complete the required 127 semester hours of course work, as prescribed in the General Option of the program, 129 hours as prescribed in the Computer Engineering Option, or 128 hours as
prescribed in the VLSI Option with an overall cumulative grade point average of 2.00 or better. A minimum of 2.00 grade point average in engineering courses and a grade of "C" or better in each course in electrical engineering are also required. Additionally, a grade of "C" or better is required in any course used as a substitute for an electrical engineering course.

## ELECTRICAL ENGINEERING (BSEE)

General Program

127 Semester Hours
First Semester
ENG101 Composition I
MTH125 Calculus I
CHE101/101L Gen. Chemistry/Lab
ORI101 Orientation
EE101 Intro of Ele. Engineering
\#Health Science (HS)

| Freshman Year |  | Sem.Hrs. |
| :---: | :--- | :---: |
| Sem.Hrs. | Second Semester | 3 |
| 3 | ENG102 Composition II | 4 |
| 4 | MTH126 Calculus II | 4 |
| 4 | PHY105 Physics I | 3 |
| 1 | CMP 102 Intro. to Programming I | $\underline{3}$ |
| 3 | HIS 101 World History I | $\mathbf{1 7}$ |
| $\underline{\mathbf{2}}$ |  |  |

Sophomore Year
First Semester
HIS102 World History II
MTH227 Calculus III
PHY106 Physics II
EE201 Linear Circuit Analysis I
EE201L Linear Circuit Laboratory

Sem.Hrs. Second Semester Sem.Hrs.
3 ENG 203 World Literature I 3
4 MTH238 App. Differential Equations 3
4 EE202 Linear Circuit Analysis II 3
3 EE203 Analog Circuit Design/Anal I 3
1 EE203L Analog Circuit I Laboratory 1
15 EE204 Digital Circuit Design/Analysis $\underline{3}$
Junior Year
First Semester
EE301 Signals \& Systems I
EE304 Num. Methods/Digital Comp
EE320 Computer Architecture
Engineering Science Elective
**Technical Elective (TE)
\#\# Humanities Elective 3
Second Semester

ECO200 Basic Economics 3
EE303 Electromagnetic Field Theory 3
EE305 Semiconductor Engineering 3
EE330 Microprocessors 3
**Technical Elective (TE) $\underline{3}$
15
18

| First Semester | Sem.Hrs. | Senior Year <br> Second Semester | Sem.Hrs. |
| :--- | :---: | :--- | :---: |
| @EE 4xx Elective | 3 | \#\# Humanities Elective | 3 |
| EE403 Feedback Sys Analysis/Design | 3 | ME481 Quality/Reliability Assurance | 3 |
| EE404 Communications Theory | 3 | EE430 Integrated Circuit Engineering | 3 |
| EE410 Microwave Engineering | 3 | @EE4xx Elective | 3 |
| EE410L Microwave Engr. Lab | 1 | EE471 Engineering Design II | $\underline{2}$ |
| EE470 Engineering Design I | $\underline{2}$ |  | $\mathbf{1 4}$ |

1.     * EE 101 may be substituted for this course.
2. ** TE may be chosen from engineering, mathematics or science courses with approval from advisor. Note: One Technical Elective must be selected from Math 303, 305, 452, or 453.
3. \# HS course can be chosen from the HED101, NHM103, or FAS102.
4. \#\# Humanities electives can be chosen from ENG 204, ENG 205, or Art/Music elective

## ELECTRICAL ENGINEERING (BSEE)

Computer Engineering Option
129 Semester Hours

## Freshman Year

| First Semester | Sem.Hrs. | Second Semester | Sem.Hrs. |
| :--- | :---: | :--- | :---: |
| ENG101 Composition I | 3 | ENG102 Composition II | 3 |
| MTH125 Calculus I | 4 | MTH126 Calculus II | 4 |
| CHE101/101L Gen. Chemistry/Lab | 4 | PHY105 Physics I | 4 |
| ORI101 Orientation | 1 | CMP 109 Intro. to Programming II | 3 |
| CMP 102 Intro. to Programming I | 3 | HIS101 World History I | $\underline{3}$ |
| \#Health Science or PE electives | $\underline{2}$ |  | $\mathbf{1 7}$ |

## Sophomore Year

| First Semester | Sem.Hrs. | Second Semester | Sem.Hrs. |
| :---: | :---: | :---: | :---: |
| HIS102 World History II | 3 | \#\# Humanities Elective | 3 |
| MTH227 Calculus III | 4 | MTH238 App Differential Equations | 3 |
| PHY106 Physics II | 4 | EE202 Linear Circuit Analysis II | 3 |
| EE201 Linear Circuit Analysis I | 3 | EE203 Analog Circuit Design/Anal I | 3 |
| EE201L Linear Circuit Laboratory | 1 | EE203L Analog Circuit I Laboratory | 1 |
| MTH 237 Linear Algebra | 3 | EE204 Digital Circuit Design/Analysis | 3 |
|  | 18 |  | 16 |
| Junior Year |  |  |  |
| First Semester | Sem.Hrs. | Second Semester | Sem.Hrs. |
| EE301 Signals \& Systems I | 3 | ECO200 Basic Economics | 3 |
| EE304 or CMP 305 Num. Methods | 3 | EE303 Electromagnetic Field Theory | 3 |
| EE320 or CMP 380 Comp Arch. | 3 | EE305 Semiconductor Engineering | 3 |
| ME481 Quality/Reliability Assurance | 3 | EE330 Microprocessors | 3 |
| CMP 215 Data Structures | 3 | **Technical Elective (TE) | 3 |
| EE 340L Energy Conversion Lab | 1 | EE 360L Communications Lab | 1 |
|  | 16 |  | 16 |
| Senior Year |  |  |  |
| First Semester | Sem.Hrs. | Second Semester | Sem.Hrs. |
| @EE 4xx or CMP4xx Elective | 3 | ENG203 World Literature I | 3 |
| EE403 Feedback Sys Analysis/Design | 3 | CMP 384 Operating Systems | 3 |
| EE404 Communications Theory | 3 | EE430 Integrated Circuit Engineering | 3 |
| \#\# Humanities Elective | 3 | @CMP4xx or EE4xx Elective | 3 |
| EE405L Simulation Techniques | 1 | EE471 Engineering Design II | $\underline{2}$ |
| EE470 Engineering Design I | $\underline{2}$ |  | 14 |

1. ** TE may be chosen from engineering, mathematics or science courses with approval from advisor. Note: One Technical Elective must be selected from Math 303, 305, 452, or 453.
2. \# HS course can be chosen from the HED101, NHM103, or FAS102.
3. \#\# Humanities electives can be chosen from ENG 204, ENG 205, or Art/Music elective
4. @ EE4xxx or CMP 4xx elective courses require Advisor's approval


# ELECTRICAL ENGINEERING (BSEE) 

Very Large Scale Integration (VLSI) Option
129 Semester Hours

## Freshman Year

| First Semester | Sem.Hrs. | Second Semester | Sem.Hrs. |
| :--- | :---: | :--- | :---: |
| ENG101 Composition I | 3 | ENG102 Composition II | 3 |
| MTH125 Calculus I | 4 | MTH126 Calculus II | 4 |
| CHE101/101L Gen. Chemistry/Lab | 4 | PHY105 Physics I | 4 |
| ORI101 Orientation | 1 | CMP 102 Intro. to Programming I | 3 |
| EE101 Intro. to Elec. Engineering | 3 | HIS101 World History I | $\underline{3}$ |
| \#Health Science (HS) | $\underline{2}$ |  | $\mathbf{1 7}$ |

## Sophomore Year

First Semester
HIS102 World History II
MTH227 Calculus III
PHY106 Physics II
EE201 Linear Circuit Analysis I
EE201L Linear Circuit Laboratory

Sem.Hrs Second Semester Sem.Hrs.
ENG 203 World Literature I 3
MTH238 App. Differential Equations 3
EE202 Linear Circuit Analysis II 3
EE203 Analog Circuit Design/Anal I 3
EE203L Analog Circuit I Laboratory 1
EE204 Digital Circuit Design/Analysis $\underline{3}$
15 16

## Junior Year

| First Semester | Sem.Hrs. | Second Semester | Sem.Hrs. |
| :--- | :---: | :--- | :---: |
| EE301 Signals \& Systems I | 3 |  |  |
| EE304 Num. Methods/Digital Comp | 3 | EE30300 Basic Economics | 3 |
| EE320 Computer Architecture | 3 | EE305 Semiconagnetic Field Theory | 3 |
| Engineering Science Elective | 3 | EE330 Microprocessors Engineering | 3 |
| ** Technical Elective | 3 | EE 350 VLSI Design \& Testing | 3 |
| \#\# Humanities Elective | $\underline{3}$ |  | $\underline{3}$ |
|  | $\mathbf{1 8}$ |  | $\mathbf{1 5}$ |

## Senior Year

| First Semester | Sem.Hrs. | Second Semester | Sem.Hrs. |
| :--- | :---: | :--- | :---: |
|  |  |  | 3 |
| @EE 4xx Elective | 3 | \#\# Humanities Elective | 3 |
| EE403 Feedback Sys Analysis/Design | 3 | ME481 Quality/Reliability Assurance | 3 |
| EE404 Communications Theory | 3 | EE431 Adv. Integrated Circuit Engr. | 3 |
| EE430 Integrated Circuit Engr. | 3 | EE452 VLSI Design \& Testing III | 3 |


| EE451 VLSI Design \& Testing II | 3 | EE471 Engineering Design II | $\underline{2}$ |
| :---: | :---: | :---: | :---: |
| EE470 Engineering Design I | $\underline{2}$ |  | 14 |
| 17 |  |  |  |
| 1. * EE 101 may be substituted for this course. |  |  |  |
| 2. ** TE may be chosen from One Technical Elective | ing, elec | ics or science courses with app Math 303, 305, 452, or 453. |  |
| 3. \# HS course can be chosen | HED | HM103, or FAS102. |  |
| 4. \#\# Humanities electives can | fr | 204, ENG 205, or Art/Music ele |  |
| 5. @ EE 4xx elective courses re | viso |  |  |

## 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.

EE 101 Introduction to Electrical Engineering - 3 hrs. Fundamental concepts in electrical engineering are introduced. Practical pre-calculus concepts are utilized. Students are required to develop an electrical project. Students develop communication skills through presentations of projects and research of historical topics in the electrical engineering discipline.

EE 201 Linear Circuit Analysis I - 3 hrs. Kirchoff's Laws, nodal analysis, mesh analysis, superposition, source transformation, Thevenin and Norton theorems, maximum power transfer; inductance and capacitance; sinusoidal waveforms; reactance, impedance; A.C. circuit analysis, power and power factor; and simple opamp circuits are covered in this course. Prerequisite: MTH $\mathbf{1 2 5}$ Corequisites: EE 201L (Offered Fall)

EE 201L Linear Circuit Analysis I Lab-1 hr. This course is the companion lab to EE 201. Corequisites: EE 201 (Offered Fall)

EE 202 Linear Circuit Analysis II - 3 hrs. This course entails the study of nonsinusoidal waves; Fourier series, circuit analysis; Laplace transforms, transient analysis of electrical circuits; Fourier transforms, filters; balanced 3-phase circuits; two port networks, and Z,Y,A,H parameters. Prerequisite: EE 201 (Offered Spring)

EE 203 Analog Circuit Design and Analysis I -- 3 hrs . An analysis of nonlinear semiconductor devices; PN junction diodes, bipolar junction and field-effect transistors, biasing concepts, worst case analysis, and discrete amplifier circuit design and analysis. Prerequisite: EE 201 Corequisite: EE 203L (Offered Spring)

EE 203L Analog Circuit Design and Analysis I Lab-- 1 hr . This course is the companion lab to EE 202, EE 203L, and EE 204. Corequisite: EE 202, EE 203, and EE 204 (Offered Spring)

EE 204 Digital Circuit Design and Analysis - 3 hrs. Analysis and design of those circuits where the nonlinearity of the active element is significant. Includes basic digital circuits, Boolean algebra, Karnaugh maps, encoding and decoding, flip-flops, finite state machines, and analog-digital conversion. Corequisite: EE 204L for non-EE majors (Offered Spring)

EE 301 Signals and Systems I-3 hrs. Continuous time signals and systems; impulse and step functions, signal synthesis, convolution integrals, impulse response, transfer functions, poles and zeros, system responses, and state space methods, introduction: discrete time Fourier series. Discrete time Fourier transforms, discrete time systems, difference equations, and Z-transforms are introduced in this course. Prerequisites: EE 202 and MTH 238 (Offered Fall)

EE 302 Signals and Systems II - 3 hrs. A study of random signals and random input systems; probability, density functions, random variables, random processes, Gaussian and Poisson processes; correlation functions, spectral density; random input systems, analysis, and signal-to-noise ratio concepts. Prerequisite: EE 301 (Offered Spring)

EE 303 Electromagnetic Field Theory - 3 hrs. A review of coordinate systems; vector analysis; study of electrostatics to include Coulomb's Law, Gauss's Law, electric field intensity, and flux density calculations, electric potential calculations; magnetostatics to include Biot-Savart law, Ampere's law, magnetic field intensity and flux density concepts; introduction to magnetic vector potential; time varying fields, Maxwell's equations; and transmission lines. Prerequisites: MTH 238 and EE 202 (Offered Spring)

EE 304 Numerical Methods and Digital Computation-3 hrs. In this course numerical techniques are applied to the solution of scientific and engineering problems. Topics include error analysis, approximation of power series, linear regression, Taylor series, Chebeyshev polynomials, and rational approximation. Solution of differential equations, integration, and roots of equations using numerical methods are also addressed. Prerequisites: CMP 102 and MTH 238 (Offered Fall)


EE 305 Semiconductor Engineering - 4 hrs. A study of the physics of semiconductor devices; properties of materials and devices used in electrical engineering; theory of operation of semiconductor devices to include semiconductor fundamentals; PN junction diodes; bipolar transistors; and field-effect devices. Prerequisites: EE 203 and MTH 238 (Offered Spring)

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 to non-EE majors only. Prerequisite: MTH 238. Corequisite: EE 311L (Offered as needed)

EE 311L Electrical Engineering Lab-1 hr. This course is a companion lab to EE 311. Corequisite: EE 311 (Offered as needed)

EE 320 Computer Architecture - 3 hrs. Basic concepts used in computer hardware design and computer system architecture are studied. The computer is presented as an infinite state machine. Basic computer functions such as address and data paths, instruction sets and memory cycles, components such as registers, arithmetic units, instruction decoders, and types of memories are discussed. A general purpose instruction set computer will be analyzed. Prerequisites: EE 204 (Offered Fall)

EE 330 Microprocessors - 3 hrs. A study of number systems, binary arithmetic, basic structure and operation of microcomputer systems. The microprocessor will be studied in both machine code and assembly language levels. Students will write code in assembly language, interface external devices to the microcomputer system, and study bus protocols. Prerequisite: EE 320 (Offered Spring)

EE 333 Analog Circuit Design and Analysis II - 3 hrs. This course is a continuation of the material presented in EE 203 and includes concepts of advanced electronic circuit design and analysis with special emphasis on VLSI circuits. Prerequisite: EE 203. Corequisite: EE 333L (Offered as needed)

EE 333L Analog Circuit Design and Analysis II Lab-1 hr. This course is the companion lab to EE 333. Corequisite: EE 333 (Offered as needed)

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 (Offered Fall)

EE $350 \quad$ VLSI Design and Testing I-Lect. 3, Lab. 1: 4 hrs. Principles of structured VLSI design; bipolar and MOS field effect transistor characteristics; VLSI fabrication techniques for MOS and bipolar circuits; circuit characterization and performance estimation, design and testing at the architectural, and register transfer logic levels are addressed. A project using high-level tools will also be included. Corequisite: EE 305 (Offered Spring)

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 Corequisite: EE 303 (Offered Spring)

EE 402 Electrical Machines -3 hrs. A study of energy conversion; D.C. machines, motors, generators, principles of operation, characteristics, and applications; transformers and induction machines, principles of operation, characteristics, and applications; and synchronous machines, alternators, synchronous motors, principles of operation, characteristics, and applications. Prerequisite: EE 303 (Offered as needed)

EE 403 Feedback System Analysis and Design-3 hrs. A study of open and closed loop systems; time domain analysis; transfer functions, poles, and zeros; frequency response, Bode plots; root locus methods; system stability, Routh-Hurwitz criterion, Nyquist criterion; system compensation and design; state space methods, state equations, state transition matrix, and system response. Prerequisite: EE 301 (Offered Fall)

EE 404 Communication Theory -3 hrs. A study of communication signals and systems; AM and FM methods; pulse code modulation; multiplexing, and digital communications. Prerequisite: EE 301 (Offered Fall)

EE 405L Simulation Techniques Lab. - 1 hr . This course is designed to provide hands on experience in the use of computer software and simulation tools. Application of software packages such as LabView, MatLab, Maple, MathCAD and others in the areas of control systems, signal processing, and communications will be covered. Corequisites: EE 403 and EE 404 (Offered Fall)

EE 410 Microwave Engineering - 3 hrs. A review of electromagnetic theory; transmission lines and waveguides; circuit theory for waveguide systems; impedance matching and transformation; passive microwave devices; electromagnetic resonators; and periodic structures and filters. Prerequisite: EE 303 (Offered Spring)

EE 410L Microwave Engineering Laboratory - 1 hr. This lab complements the course materials taught in EE 410, Microwave Engineering. Corequisite: EE 410 (Offered Spring)

EE 420 Power Systems I - 3 hrs. Fundamental concepts of power system analysis, transmission line parameters, basic system models, steady state performance, network calculations, power flow solutions, symmetrical components, fault studies, operating strategies and control are presented in this course. Prerequisite: EE 340L (Offered as needed)

EE 421 Power Systems II - 3 hrs. Generating station characteristics, transmission line calculations, load studies and economic operations, and stability are addressed in this course. Prerequisite: EE 420 (Offered as needed)

EE 424 Advanced Digital Systems - 3 hrs. This course is designed to provide seniors in electrical and computer engineering with real digital system design experience using the Verilog hardware description language (Verilog HDL). The history of descriptive hardware design and features of hardware description languages are explained along with design and simulation examples. With the use of the industry standard simulation and synthesis tools, designs will be constructed, synthesized, and configured in Field Programmable Gate Arrays (FPGA) or other Programmable Logic Devices. Experience gained in this class will prepare students to move directly into modern logic design environments. Prerequisite: EE 330 (Offered Fall).

EE 430 Integrated Circuit Engineering - 3 hrs. Analysis, design and fabrication of silicon, thin-film, and thick-film integrated circuits; circuit simulation studies aided with SPICE II software system; integrated operational amplifiers and logic gates ( $T^{2} L, I^{2} L$, MOS and CMOS) are treated in this course. Prerequisite: EE 305 (Offered Fall)

EE 431 Advanced Integrated Circuit Engineering - 3 hrs. The concepts presented in EE 430 are revisited in greater depth. Additional material on epitaxy, sputtering, diffusion schedules, DMOS, VMOS, SOS, and FET opamps are introduced. Gummel-Poon models, threshold logic, flip-flops and semiconductor memories are covered. Prerequisite: EE 430 (Offered Spring)

EE 441 Digital Signal Processing - 3 hrs. A review of discrete time signals and systems; sampling of continuous time signals, sampling theorem; discrete time Fourier transforms; Z-transforms; region of convergence; applications; discrete Fourier transforms; fast Fourier transforms; design of digital filters, IIR filters, FIR filters, and computer-aided design. Prerequisite: EE 301 (Offered as needed)

EE 445 Advanced Electromagnetic Theory - 3 hrs. Solution of Laplace's equation in two dimensions, circular harmonics, cylindrical harmonics, method of finite differences; wave propagation, perfect dielectrics, conductors, lossy dielectrics, transmission line analogy, Smith chart solutions; and computer applications are covered. Prerequisite: EE 303 (Offered as needed)

EE 451 VLSI Design and Testing II - Lect. 3, Lab. 1: 4 hrs . Device and circuit level optimization of digital building blocks; bipolar and MOS devices and parasitic models and second order effects; circuit design styles and arithmetic structures; interconnect models and parasites; driver design; and timing issues will be addressed. SPICE and/or MAGIC will be used for a design project. Prerequisite: Consent of instructor (Offered Fall)

EE $452 \quad$ VLSI Design and Testing III - Lect. 3, Lab. 1: 4 hrs. The theory and techniques of CMOS design and fabrication; layout rules and techniques, and CMOS subsystem design will be studied. VLSI CAD design tools will be used to design and model projects to include opamps and comparators. Prerequisite: Consent of instructor (Offered Spring)

EE 455 Optimal Control Theory - 3 hrs. A review of state space methods; optimal control problems, performance criterion, minimum time problems, minimum energy problems, and minimum fuel problems; optimization, using calculus of variations, Lagrange, Meyer, and Bolza problems, Lagrange equations, solution, applications; Pontryagin's maximum principle, formulation, costate variables, solution; dynamic programming, principle of optimality, discrete control processes; Hamilton-Jacobi approach, closed loop control law, matrix Riccati equation, applications; and stability in the sense of Lyapunov are covered. Prerequisite: EE 403 (Offered as needed)

EE 456 Nonlinear Control Systems - 3 hrs. A study of nonlinearities, classification, saturation, dead zone, hysteresis; phase plane formulation, phase portraits; describing function approach, limit cycles, and relay servomechanisms. Prerequisite: EE 403 (Offered as needed)

EE 470 Engineering Analysis and Design I-2 hrs. Students must demonstrate their complete engineering capabilities by participating in a capstone design project. This first course is provided to facilitate project selection, literature survey, and orientation. Meeting times are flexible. Prerequisite: Senior standing and consent of instructor (Offered Fall)

EE 471 Engineering Analysis and Design II - 2 hrs. This is a continuation of EE 470 and is provided to facilitate completion of the capstone design project. Meeting times are flexible. Prerequisite: EE 470 (Offered Spring)

EE 490 Special Topics - 3 hrs. This course focuses on topics based on modern trends in electrical engineering. This course can be taken multiple times with students receiving additional credit
each time. The specifics of each course will be identified at the beginning of each semester. (Offered as needed)

EE 497 Engineering Analysis and Design - 3 hrs. Students must demonstrate their complete engineering capabilities by participating in a one-semester design project. The purpose of this course is to provide the design experience necessary for students in the VLSI option. During the course, students in consultation with their professors decide on the project, search the literature, and design and develop the project. Prerequisite: Senior standing and consent of instructor (Offered Spring)

# DEPARTMENT OF MECHANICAL ENGINEERING 

Dr. Ruben Rojas-Oviedo, Chair<br>221 Carver Complex Hollins Wing<br>256-851-5890

The program in Mechanical Engineering at AAMU has been developed to meet the challenges of today's engineering profession. 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 system integration, propulsion systems, concurrent engineering, and other competitive manufacturing practices. Design for manufacture considers elements such as consumer satisfaction, time to market, and others.

The program in Mechanical Engineering at Alabama A\&M University, is designed to provide the necessary foundation in engineering analysis, design, manufacturing and engineering sciences leading to the Bachelor's of Science Degree in Mechanical Engineering. The common program includes courses in fluid and solid mechanics, heat transfer, thermodynamics, instrumentation, automatic 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 carryout engineering projects that cover concurrent engineering design practices. Therefore, each lab experiment contains elements of design and manufacturing. Students' instruction will include the use of modern computer simulation tools such as MatLab, CAD, Lab-View and others as appropriate in developing their designs. Additionally, students are required to take a two-semester capstone design course that addresses integration of design, manufacturing, reliability, economics, maintainability, and life cycle disposal in their projects.

Computer literacy is accomplished via a formal course in a computer language (FORTRAN or equivalent). Students are required to become familiar with different computer environments and PC software packages such as word processors, spreadsheets, and databases. 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.

## GENERAL 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 requirement; 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 a minimum 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 EDUCATIONAL OBJECTIVE

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.

## Program Educational Outcomes

1. The student will demonstrate the necessary competencies in fundamental education in areas of mechanical engineering, such as: thermal and mechanical sciences and 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.

## MECHANICAL ENGINEERING (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 | MTH 126 | Calculus II | 4 |
| MTH 125 | Calculus I | 4 | PHY 105 | Physics I | 4 |
| CHE 101/101L | General Chemistry I | 4 | ${ }^{3}$ EGC | 104 | Computer Programming |

${ }^{1}$ ENG 103 or 104 may be taken by international students
${ }^{2}$ FAS 101, HED 101, or NHM 103
${ }^{3}$ The equivalent general engineering course can be substituted with the corresponding ME course.

## Sophomore Year

| First Semester |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |
| :--- | :--- | :---: | :--- | :--- | :--- | ---: |
| MTH | 227 | Calculus III | 4 | MTH | 238 | Differential Equations |

${ }^{4}$ PHL 201, PSY 201, SOC 201 or GEO 213
${ }^{5}$ The equivalent general engineering course can be substituted with the corresponding ME course.

## Junior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| ECO | 200 | Basic Economics | 3 | EE | 203/203L | Analog Circuit Des/Anal./Lab | 4 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ME | 231 | Strength of Materials | 3 | ME | 300 | Math. Methods in M. E. | 3 |
| ME | 310 | Thermodynamics | 3 | ME | $301 / 301 \mathrm{~L}$ | Anal. \& Inst./Phys. Sys./Lab | 3 |
| ME | 320 | Kinematics/Dyn of Mach. | 3 | ME | 311 | Power Systems Integration | 3 |
| ME | $360 / 360$ L | Fluid Mechanics I/Lab | $\underline{4}$ | ME | 312/312L | Heat and Mass Transfer/Lab | $4 \frac{4}{7}$ |

## Senior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| ENG | 203 | World Literature I | 3 | ENG | 204 | World Literature II |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |

${ }^{4}$ Technical elective may be chosen from senior-level ME courses with approval of advisor
${ }^{6} 400$-level, advisor approved.

## MECHANICAL ENGINEERING (B.S.M.E.) <br> Manufacturing Option <br> 129 Credit Hours <br> 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 | MTH 126 | Calculus II | 4 |
| MTH 125 | Calculus I | 4 | PHY 105 | Physics I | 4 |
| CHE 101/101L | General Chemistry I | 4 | ${ }^{3}$ EGC 104 | Computer Programming | 3 |
|  | ${ }^{2}$ Health Science | 2 | ME 101/101L | Intro. to Mech. Eng Lab | $\underline{2}$ |
| ${ }^{4}$ EGC 101 | Eng. Drawing \& Graphics | $\underline{3}$ |  |  | 16 |

${ }^{1}$ ENG 103 or 104 may be taken by international students
${ }^{2}$ FAS 101, HED 101, or NHM 103
${ }^{3}$ The equivalent general engineering course can be substituted with the corresponding ME course.

## Sophomore Year

| First Semester |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |
| :--- | :--- | :---: | :--- | :--- | ---: |
| MTH | 227 | Calculus III | 4 | MTH 238 | Differential Equations |

${ }^{4}$ PHL 201, PSY 201, SOC 201 or GEO 213
${ }^{5}$ The equivalent general engineering course can be substituted with the corresponding ME course.

| Junior Year |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| First Semester |  |  | Sem. Hrs. | Second Semester |  | Sem. Hrs. |  |
| ECO | 200 | Basic Economics | 3 | EE | 203/203L | Analog Circuit Des/Anal./Lab | 4 |
| ME | 231 | Strength of Materials | 3 | ME | 300 | Math. Methods in M. E. | 3 |
| ME | 310 | Thermodynamics | 3 | ME | 301/301L | Anal. \& Inst./Phys. Sys./Lab | 3 |
| ME | 320 | Kinematics/Dyn of Mach. | 3 | ME | 370 | Concurrent Engineering | 3 |
| ME | 360/360L | Fluid Mechanics I/Lab | 4 | ME | 312/312L | Heat and Mass Transfer/Lab | 4 |
|  |  |  | 16 |  |  |  | $\overline{7}$ |

## 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./Lab | 4 |  |  | Art/Music Elective |

${ }^{4}$ Technical elective may be chosen from senior-level ME courses with approval of advisor
${ }^{6} 400$-level, advisor approved

| 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 | MTH 126 | Calculus II | 4 |
| MTH 125 | Calculus I | 4 |  | PHY 105 | Physics I |
| CHE 101/101L | General Chemistry I | 4 | ${ }^{3}$ EGC 104 | Computer Programming | 4 |
|  |  | ${ }^{2}$ Health Science | 2 | ME | 101/101L Intro. to Mech. Eng Lab |

${ }^{1}$ ENG 103 or 104 may be taken by international students
${ }^{2}$ FAS 101, HED 101, or NHM 103
${ }^{3}$ The equivalent general engineering course can be substituted with the corresponding ME course.

## Sophomore Year

First Semester
Sem. Hrs. Second Semester Sem. Hrs.

| MTH | 227 | Calculus III | 4 | MTH 238 | Differential Equations |
| :--- | :--- | :--- | :--- | :--- | :--- |
| PHY | 106 | Physics II | 4 | HIS 102 | World History II |

${ }^{4}$ PHL 201, PSY 201, SOC 201 or GEO 213
${ }^{5}$ The equivalent general engineering course can be substituted with the corresponding ME course.

## Junior Year

First Semester
Sem. Hrs. Second Semester
Sem. Hrs.

| ECO | 200 | Basic Economics | 3 | EE | 203/203L Analog Circuit Des/Anal./Lab | 4 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ME | 231 | Strength of Materials | 3 | ME | 300 | Math. Methods in M. E. | 3 |
| ME | 310 | Thermodynamics | 3 | ME | $301 / 301$ L Anal. \& Inst./Phys. Sys./Lab | 3 |  |
| ME | 320 | Kinematics/Dyn of Mach. | 3 | ME | 311 | Power Systems Integration | 3 |
| ME | 360/360L | Fluid Mechanics I/Lab | $\underline{4}$ | ME | 312/312L | Heat and Mass Transfer/Lab | $\frac{4}{7}$ |

## 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 | $412 / 412$ L | Anal./Syn. of Gas Turb./Comp. | 4 | ME | 413 | Rocket Propulsion | 3 |
| ME | $451 / 451 L$ | Auto. Control Systems/Lab | 3 | ME | 416 | Gas Dynamics | 3 |
| ME | 470 | Mech. Engineering Design Prj. | $\underline{2}$ | ME | 470 A | Mech. Engineer. Design Project | $\underline{3}$ |
|  |  | 15 |  |  |  | 15 |  |

[^3]
## COURSE DESCRIPTIONS

ME 101 Introduction to Mechanical Engineering - 1 hr . (Lec. 1 hr .) Mechanical engineering as a practice is reviewed briefly. Students are required to develop a basic engineering project to include: Market outlook, basic production techniques, economic assessment, planning and design, manufacturing, testing, and product evaluation. A final technical report is required. The report includes an oral presentation and documentation in writing. Emphasis is placed on team development, consistent use of engineering units, and computer usage. Project selection is under the approval of the instructor. Prerequisite: MTH 104 or consent of instructor (Offered - consult advisor) Co-requisite ME 101L.

ME 101L Introduction. to Mechanical Engineering Lab-1.hr. (Lab. 3 hrs ). This laboratory is required to develop the project/s associated with ME 101.

ME 205 Statics - 3 hrs. Principles of equilibrium, governing equations, free-body diagrams. Statics and the design problem. Vectorial representation of forces. Analysis of mechanical systems in equilibrium. Properties of forces, equivalent systems, moments, couples, and resultants. Applied problems in friction, centroids and area moments of inertia. Introduction to computer simulation techniques. Prerequisite: MTH 125 Corequisite PHY 106.

ME 206 Dynamics - 3 hrs . (Lec 3 hrs ) Principles of systems in motion. Fundamental governing equations for particles and rigid bodies. Dynamics and the design problem. Vectorial representation of velocity and acceleration. Relative motion, work, energy, impulse, and momentum. Introduction to computer simulation techniques. Prerequisite: ME 205, MTH 126 (or concurrently)

ME 210 Material Science - 3 hrs. Structure of matter. Physical and mechanical properties of materials including metals, polymers, ceramics, composites, and electronic materials. Equilibrium diagrams. Heat treatments, material selection for manufacturing and corrosion problems. Prerequisite: CHE 101, PHY 105 or advisor approval.

ME 231 Strength of Materials - 3 hrs . (Lec 3 hrs ) A study of the mechanics of deformable materials, durability, crack 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 (Offered - consult advisor)

ME 300 Mathematical Methods in Mechanical Engineering - 3 hrs . (Lec. 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, discrete events and or commonly, and polynomial equations. Applications in fluid mechanics, thermodynamics, kinematics, and design are covered. Prerequisites: MTH 238 and EGC 104/ME 104 (Offered consult advisor)

ME 301 Analysis and Instrumentation of Physical Systems - 2 hrs . (Lec. 2 hrs ) This course presents a unified introduction to dynamic engineering systems, including those with electrical, mechanical, and fluid elements. Mathematical modeling techniques subdivided in topics and used to gain insight in engineering systems and analytical as well as experimental techniques of general importance in engineering problems are presented. Basic concepts and the use of modern instrumentation, including digital systems, are covered in the lab. Prerequisite: PHY 106, EE 201, ME 306 and MTH 227 Co-requisite ME 301L.

ME 301L Analysis and Instrumentation of Physical Systems Lab. - 1 hr. (Lab 3 hrs .) This laboratory supports the required practices for ME 301.

ME 310 Thermodynamics - 3 hrs. (Lec. 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; basic applications are covered. Prerequisite: PHY 105 (Offered - consult advisor)

ME 311 Power Systems Integration-3 hrs. (Lec. 3 hrs ). This course analyzes the elements and the processes of power systems and their integration. Topics covered are: energy utilization, combustion, energy cycles, steam power plants, heat exchangers, power system performance, variable loads, station performance and energy cost. Prerequisites: ME 310 and ME 360 (Offered - consult advisor)

ME 312 Heat and Mass Transfer - 3 hrs. (Lec. 3 hrs .) Fundamentals of heat transfer by conduction, convection, and radiation; and mass transfer by convection is covered in this course. Engineering applications is are covered. Prerequisites: ME 310 and ME 360 Corequiste ME 312L. (Offered 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 320 Kinematics and Dynamics of Machines - 3 hrs. (Lec. 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: EGC 104 ME 104 and ME 206. (Offered - consult advisor)

ME 360 Fluid Mechanics $I$ - 3 hrs. (Lec. 3 hrs.) Fundamentals of fluid mechanics are covered. Newtonian fluids, review of systems of units, the perfect gas equation, incompressible flow, Bernoulli's equation, channel flow, boundary layers, subsonic flow, flow through converging-diverging passages, compressible flow, potential theory, flow through turbo machinery. Engineering applications covered. Prerequisite: MTH 227 (Offered - 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. (Lec. 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: ME 231 and 126 and/or equivalent engineering courses (Consult instructor)

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. (Lec 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 311 or instructor approved.

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. Corequisite ME 411 and ME 412L or Instructor Approved.

ME 412L Analysis and Synthesis of Gas Turbines and Components Lab - 1 hrs. (Lab. 3 hrs.) Supports projects/practices of ME 412. Co-requisite: ME 412

ME 413 Rocket Propulsion - 3 hrs. (Lec. 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 . (Lec 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 360 (Offered - consult advisor)

ME 415 Heating, Ventilating, Air Conditioning, Refrigeration-3 hrs. (Lec. 3 hrs ) A study of refrigeration cycles, psychrometrics, thermal comfort, ventilation, duct design, equipment sizing, energy recovery, and solar design concepts. Prerequisites: ME 312 and ME 360 (Offered - consult advisor)

ME 416 Gas Dynamics - 3 hrs . (Lec 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 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 231 and ME 320 (Offered - consult advisor) Co-requisite ME 432L

ME 432L Design for Manufacture and Reliability - 1 hrs. (Lab 3 hrs.) Supports Design work for ME 432. Corequisite: ME 432

ME 451 Automatic Control Systems - 2 hrs. (Lec 2 hrs.$)$. Knowledge of linear system properties from previous courses is amplified and used to accomplish modeling, identification, and feedback control of dynamic systems. Both classical and state feedback control concepts are developed in this course. Digital control theory and analysis is also applied to systems composed of linear elements. Laboratory experiments are hardware applications that verify these concepts using both analog and digital computers as appropriate. Prerequisites: ME 360 and EE 203 (Offered - consult advisor) Corequisite ME 451L

ME 451L Automatic Control Systems Lab-1 hrs. (Lab 3 hrs.) Supports projects and practices in ME 451. Corequisite ME 451.

ME 470 Mechanical Engineering Design Project - 2 hrs. (Lec. 1 hr., Lab 3 hrs.) Design or comprehensive analysis and development of an engineering product or process. The student is required to give an oral presentation of his work and submit an approved typewritten technical report. Prerequisite: Senior Standing and consent of instructor (Offered - consult advisor)

ME 470A Mechanical Engineering Design Project Continuation - 3 hrs. (Lec. 1 hr., Lab 6 hrs.) A continuation of ME 470. Prerequisite: ME 470 (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. Prerequisite: ME 300 and ME 370 or Instructor Approval

ME 472 Economic Evaluation of Design Project.- 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: ME 231, ME 311, and ME 360 or Instructor Approval.

ME 473 Logistics. - 3 hrs. (Lec. 3 hrs.) A study of the initial distribution and the subsequent sustaining lifecycle maintenance and support of a system of products throughout the consumer use phase is considered. Systems design will be re-evaluated with emphasis placed on maintenance and support, taking into consideration reliability, maintainability, human factors, and life cycle cost factors. Senior standing required.

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.

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, 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) Corequisite ME 485L

ME 485L Computer Aided Manufacturing Lab. - 1 hrs. (Lab. 3 hrs.) Supports projects and practices of ME 485. Co-requisite ME 485.

ME 490 Special Topics. - 1 to 3 hrs. This course covers, in additional depth, topics on Mechanical Engineering. It can be taken as individual work under the supervision of instructor. This course can be taken multiple times with students receiving additional credit each time. The specifics of each course will be identified at the beginning of each semester. Prerequisite: Senior standing and consent of instructor (Offered - consult advisor)

# DEPARTMENT OF TECHNOLOGY 

Dr. Edward L. Bernstein, Chair<br>205 Carver Complex Hollins Wing<br>256-851-5581

The Department of Technology includes the Engineering 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.

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 (See notations on accreditation under program headings.)

Engineering Technology provides instruction in civil, electrical, and mechanical engineering technology at the baccalaureate degree levels. Engineering technology combines engineering knowledge and methods with technical skills to support engineering activities. It differs from engineering in that its emphasis lies in practical applications rather than theory and design. Engineering technology stresses the application of today's technological know-how to current industrial practices and design procedures. Graduates usually work within the engineering team in applications-oriented or manufacturing positions or technical services.

## DUAL DEGREE PROGRAM WITH GEORGIA INSTITUTE OF TECHNOLOGY <br> 101 Credit Hours (plus completion of Georgia Tech Requirements)

This program offers an opportunity for students to transfer to Georgia Tech after completing a three-year curriculum at Alabama A\&M University. Upon acceptance by Georgia Tech, students may enroll in any of their specialty areas of engineering. Engineering programs currently offered are: Aerospace Engineering; Biomedical Engineering; Chemical Engineering; Civil and Environmental Engineering; Computer Engineering; Electrical Engineering; Environmental Engineering; Industrial and Systems Engineering; Materials Engineering; Mechanical Engineering; Nuclear Engineering and Health Physics; and Textile Engineering. Upon completion of the program at Georgia Tech, students receive a B.S. in Engineering Technology from Alabama A\&M University and a B. S. from Georgia Tech in their specialty area. Because of their classification as transfer students, Dual Degree applicants must meet all Georgia Tech requirements for transfer.

Students must select courses from the following categories in accordance with their expected major area at Georgia Tech. Some course subjects are offered in both the Engineering department and the Engineering Technology department.

## Freshman Year

First Semester
ORI 101 Survival Skills 1
ENG 101 Composition I 3
History 3
MDT 111L Technical Drafting 3
MTH 125 Calculus I 4
Health, PE or Military Science $\underline{2}$
16

Sem. Hrs.
ENG 102 Composition II 3
MTH 126 Calculus 4
TBC 102 Microcomputer Skills for Tech. 3
CHE 101 General Chemistry I 3
CHE 101L General Chemistry I Lab 1
${ }^{2}$ Social Science $\underline{3}$ 17

## Sophomore Year

First Semester

|  |  | Literature |
| :--- | :--- | :--- |
| MTH 227 | Calculus III |  |
| PHY | 105 | Physics I |
| TGC | 202 | Applied C++ for Engr Tech |
|  |  | ${ }^{2}$ Social Science |

Sem. Hrs. Second Semester
$3 \quad{ }^{1}$ Humanities or Fine Arts 3
4 CHE 102 General Chemistry II 3
4 CHE 102L General Chemistry II Lab 1
3 PHY 106 Physics II 4
3 TGC 217 Statics 3
17 MTH 238 Applied Differential Equations $\underline{3}$
MTH 238 Applied Differential Equations $\quad \underline{3}$
Junior Year
First Semester
Sem. Hrs. Second Semester
Sem. Hrs.
${ }^{1}$ Humanities or Fine Arts 3 Economics 3
Engr \& Tech Fundamental Course 3 ENG 205 General Speech 3
Engr \& Tech Fundamental Course 4 PHY 201 Intro to Modern Physics 3
MTH 237 Intro to Linear Algebra $\quad$ Engr Tech Fundamental or Elect. $\underline{9}$
TBC 201 Technical Communication $\underline{3}$
16
${ }^{1}$ Literature, Philosophy, Foreign Language, Art, Music, Theatre, or Dance. All students must take a six-semester credit hour sequence in literature or history.
${ }^{2}$ Economics, History, Anthropology, Geography, Political Science, Psychology, Sociology, etc. All students must take a six-semester credit hour sequence in literature or history.

## ENGINEERING AND TECHNOLOGY FUNDAMENTAL COURSES:

Course No.
MET 200
MET 202
EGC 206

## Course Name

ElectroMechanical Principles
Sem. Hrs.

Dynamics or
Dynamics
3
Course No.
MET 204
EGC 305
MET 206
ME 310
TGC 218
EGC 207

| Course Name | Sem. Hrs. |
| :--- | :---: |
| Fluid Mechanics and Hydraulics or | 4 |
| Fluid Mechanics | 3 |
| Thermodynamics \& Heat Transfer or | 4 |
| Thermodynamics | 3 |
| Strength of Materials or | 3 |
| Strength of Materials | 3 |

Sem. Hrs.
4
Fluid Mechanics 3
Thermodynamics \& Heat Transfer or 4
Thermodynamics 3
Strength of Materials or 3
Strength of Materials 3

## ENGINEERING AND TECHNOLOGY ELECTIVE COURSES:

The student may select any upper-level (300- or 400- level) Engineering and Technology course in accordance with the planned major at Georgia Tech, if the prerequisites for the course have been taken. Students may also select courses from other university programs such as computer science, chemistry, mathematics, or physics if their advisor approves them as related to academic goals.

## CIVIL ENGINEERING TECHNOLOGY

Graduates of this program enter careers in building and highway construction, structural design, transportation, hydraulics, site planning and environmental technology. Graduates may work as surveyors, field engineers, estimators, and project managers for municipal, state and federal agencies, private firms or public service companies or in military service.

## CIVIL ENGINEERING TECHNOLOGY

## 128 Credit Hours

Accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET).

111 Market Place, Suite 1050
Baltimore, MD 21202
(410) 347-7700

## Freshman Year

First Semester
ORI 101 Survival Skills 1
ENG 101 Composition I 3
History
MDT 111L Technical Drafting
${ }^{1}$ Humanities or Fine Arts Health, PE or Military Science
MTH 112 Precalculus Algebraㄹ

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Second Semester
ENG 102 Composition II3
MTH 113 Pre-Calculus Trigonometry ..... 3
TBC 102 Microcomputer Skills for Tech. ..... 3
Economics (Choice) ..... 3
History ..... 3

## Sophomore Year

First Semester
ENG Literature 3
MTH 125 Calculus I 4
TBC 201 Technical Communications 3
TGC 202 Applied C++ for Eng. Tech. 3
TGC 217 Statics 3
$\underline{3}$

Second Semester
Sem. Hrs.

ENG 205 General Speech 3
MTH 126 Calculus II 4
PHY 105 Physics I 4
TGC 218 Strength of Materials $\underline{3}$

| Junior Year |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| First Semester |  | Sem. Hrs. | Second Semester Sem. Hrs. |  |  |
| CET 205 | Surveying | 3 | CET 220 | Transportation Engineering | 3 |
| CET 225 | Construction Methods \& Safety | y 3 | CET 304 | Construction Planning \& Sched. | 3 |
| MET 204 | Fluid Mechanics \& Hydraulics | 3 | CET 403 | Steel \& Concrete Design | 3 |
| MET 330L | MET Lab 1 |  | ${ }^{1}$ Humanities or | Fine Arts | 3 |
| MET 202 | Dynamics | 3 | CHE 101 | General Chemistry | 3 |
| TBC 212 | Methods of Engr Analysis | $\underline{3}$ | CHE 101L | General Chemistry Lab | 1 |
|  |  | 16 |  |  | 16 |
| Senior Year |  |  |  |  |  |
| First Semester |  |  | Sem. Hrs. | Second Semester Sem. Hrs. |  |
| CET 208 | Soil Mechanics \& Foundations | 3 | CET | Elective | 3 |
| CET 451 | Senior Structural Project | 3 | CET 409 | Estimating, Contracts \& Specs. | 3 |
| ECO 300 | Engineering Economics | 3 | CET 445 | Environmental Technology | 3 |
| MDT 213 | Computer Graphics | 3 | MDT 206 | Architectural Drafting | 3 |
|  | ${ }^{2}$ Social Science | $\underline{3}$ | MET 200 | Electromechanical Principles | $\underline{3}$ |
|  |  | 15 |  |  | 15 |

${ }^{1}$ Literature, Philosophy, Foreign Language, Art, Music, Theatre, or Dance. All students must take a six-semester credit hour sequence in literature or history.
${ }^{2}$ Economics, History, Anthropology, Geography, Political Science, Psychology, Sociology, etc. All students must take a six-semester credit hour sequence in literature or history.

## TECHNICAL ELECTIVE COURSES

The student will select one of the following courses after approval by the student's advisor. Students may also select courses from other Engineering Technology programs if their advisor approves them as being related to the student's career goals.

Course No.
CET 407
CET 411

| Course Name | Sem. Hrs. |
| :--- | :---: |
| Advanced Surveying | 3 |
| Computer Methods in Structures | 3 |
| Engineering Technology Course approved by Advisor | 3 |

## COURSE DESCRIPTIONS

CET 201L Construction Materials and Testing - 3 hrs. A study of the properties and manufacturing processes of construction materials. Laboratory testing of wood, steel, concrete, and other samples for compression, tension, shear, and hardness. Application of test results to actual design methods.

CET 205L Elementary Plane Surveying - 3 hrs. Measurement and error calculation, leveling, traverse and area computation, topographic mapping. Field practice on construction surveying using levels, theodolite and transit. Introduction to the use of computerized electronic measuring equipment. Prerequisites: MTH 113, and sophomore standing.

CET 208 Soil Mechanics and Foundations - 3 hrs. Study of origin, formation, classification, identification and subsurface exploration of soil. Physical and mechanical properties of soils, shear strength, consolidation, settlement, lateral earth pressure and bearing capacity. Introduction to foundation analysis. Two hours lecture and 2 hours lab. Prerequisite: TGC 217 Statics.

CET 220 Transportation Engineering Technology - 3 hrs. Introduction to the planning and design of transportation systems such as highways, railroads, airports, pipelines and waterways. Consideration of urban transportation problems and traffic control, including planning, data collection and analysis, and program implementation.

CET 225 Construction Methods \& Safety - 3 hr . Introduction to the techniques, methods, and materials of building and road construction. Excavation, foundations, framing, masonry, roofing, finishing, and mechanical, electrical, and plumbing systems are covered. OSHA regulations and safety practices are presented. (Offered Fall)

CET 304 Construction Planning \& Scheduling - 3 hrs . Introduction to construction project planning and management. Value engineering in construction. Scheduling by network diagrams, use of probability and statistics in construction, and methods of selecting construction equipment. Introduction to construction methods for tunnels and bridges. Prerequisite: Junior standing.

CET 403 Steel and Concrete Design - 3 hr . Introduction to the structural analysis and design of steel and concrete structures. Selection of steel and concrete beams, columns, frames, and connections. Use of allowable stress and ultimate strength design methods for concrete and allowable stress and load resistance factor design (LRFD) methods for steel. A steel and concrete structure is designed as a student project. Prerequisite: TGC 218 Strength of Materials (Offered Spring)

CET 407 Advanced Surveying - 3 hrs. Contours, map construction, volumetric estimating from contour maps, transit and stadia mapping, topographic surveying, vertical and horizontal alignment for roads. Building and bridge surveying. Prerequisites: CET 205L and Junior standing

CET 409 Estimating, Contracts, and Specifications - 3 hrs. Introduction to contracting, bidding and specification writing. Analysis of the cost of materials, labor and equipment to determine costs both for preliminary and final estimates. Students will complete a project to estimate the cost of a building or other structure from plans and specifications. Prerequisite: CET 225.

CET 411 Computer Methods in Structures - 3 hrs. General elastic solution of indeterminate frame structures using matrix methods on the digital computer. Introduction to the fundamentals of finite element modeling. Prerequisite: TGC 218.

CET 445 Environmental Technology -- 3 hr . Basic environmental technology of water supplies, waste management, and pollution control. Sources and effects of air, water, and land pollution. Methods of transportation, storage, disposal, and treatment of solid and hazardous wastes are covered. Prerequisite: CHE 101 General Chemistry, MET 204 Fluid Mechanics and Hydraulics (Offered Spring)

CET 451 Senior Project in Structures - 3 hrs. Selection, investigation, and solution of a civil engineering technology building construction or structures problem. Includes data acquisition and analysis, evaluation of alternatives, preliminary and final solution, and written and oral presentation of results.

## Prerequisite: Senior standing

## 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 fast-growing field. Hands-on laboratory experience is emphasized, and graduates may work in industrial development, design, production, maintenance, or as customer field representatives. Many of the courses prepare the student to take the exams required to obtain the prestigious industry certifications such as A+, Network+, Microsoft and Cisco.

## ELECTRICAL ENGINEERING TECHNOLOGY

128 Credit Hours
Accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET)

111 Market Place, Suite 1050
Baltimore, MD 21202
(410) 347-7700

## Freshman Year

First Semester
Sem. Hrs. Second Semester Sem. Hrs.

| ORI | 101 | Survival Skills | 1 | ENG | 102 | Composition II | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ENG | 101 | Composition I | 3 |  |  | ${ }^{1}$ Humanities or Fine Arts | 3 |
| MDT | 111 L | Technical Drafting | 3 | MTH | 113 | Pre-Calculus Trigonometry | 3 |
| MTH 112 | Pre-Calculus Algebra | 3 | TBC | 102 | Microcomputer Skills | 3 |  |
| EET | 101L | Intro. to Electr. Engineer. Tech. | 3 | EET | 154L | DC Theory | 4 |
|  |  | Health, PE or Military Science | 2 |  |  | 4 |  |
|  |  | History | $\underline{3}$ |  |  | 16 |  |

First Semester

| MTH | 125 | Calculus I |
| :--- | :--- | :--- |
| EET | 186 | Microprocessor Basics |
| EET | 202 L | AC Theory |
| PHY | 105 | Physics I |

Physics I

## Sophomore Year

Sem. Hrs. Second Semester
EET 206L Solid State Theory 4
TBC 201 Technical Communication 3
EET 205L Digital Electronics 4
MTH 126 Calculus II 4
EET 230L Applied Instrumentation $\underline{3}$
18
Junior Year
Sem. Hrs. Second Semester
Sem. Hrs.
ENG 205 General Speech 3
Economics 3
EET 240L Microcontrollers 3
EET 219L AC \& DC Motors 4
MTH 227 Calculus III or
MTH 237 Intro to Linear Algebra or
MTH 238 Applied Differential Equations $\underline{3}$

## Senior Year

First Semester

| EET |  | Elective |
| :--- | :--- | :--- |
| EET | 422L | Programmable Controllers |
| EET | 428 | Capstone Design Phase I |
|  |  | History |
|  |  | Literature |

Sem. Hrs. Second Semester
3
4
1 3
$\underline{3}$

EET 421L Computer Design 3
EET 429 EET Capstone Design Phase II 1
EET Elective 3
${ }^{2}$ Social Science 3
Humanities or Fine Arts I
-
${ }^{1}$ Literature, Philosophy, Foreign Language, Art, Music, Theatre, or Dance. All students must take a six-semester credit hour sequence in literature or history.
${ }^{2}$ Economics, History, Anthropology, Geography, Political Science, Psychology, Sociology, etc. All students must take a six-semester credit hour sequence in literature or history.

## TECHNICAL ELECTIVE COURSES

The student will select two of the following courses after approval by the student's advisor. Students may also select courses from other Engineering Technology programs if their advisor approves them as being related to the student's career goals.

| Course No. | Course Name | Sem. Hrs. |
| :--- | :--- | :---: |
| EET 315 | Programmable Devices | 3 |
| EET 351 | Advanced Circuit Analysis | 3 |
| EET 357L | Linear Integrated Circuits | 4 |
| EET 411 | Data Communication Systems | 3 |
| EET 477 | Digital Signal Processing | 3 |
| EET 486 | Advanced Microprocessors | 3 |
| EET 490 | Special Topics in Electrical Engineering Technology | 1 to 4 |
| EET 499 | VLSI Circuit Design | 3 |
| Engineering Technology Course approved by Advisor | 3 |  |

## COURSE DESCRIPTIONS

EET 101L Introduction To Electrical Engineering Technology - 3 hr ( 2 hrs Lec, 3 hrs Lab) This course acquaints the beginning student with the tools, equipment, and language of the electrical and electronic fields. It provides an introduction to the concepts of electric charge, force, potential difference, current, and resistance. The fundamentals of circuit theory and practice are applied to DC circuits. Study of resistance in series, parallel, and series/parallel configurations and use of resistors as loaded and unloaded voltage dividers. Students learn to read and draw schematic diagrams, proper laboratory safety practice, and the proper use of measuring instruments. Introduces the use of computer programs for circuit simulation. (Offered Spring and Fall)

EET 154L DC Theory- 4 hrs. A study of further DC circuit concepts including Kirchhoff's Law, Thevenin's Theorem, Norton's Theorem, Superposition Theorem, and the basic design of DC instruments, magnetic circuits, and transient analysis. Laboratory work includes experimental study of these concepts. Prerequisite: EET 101L, MTH 112. (Offered Spring)

EET 186 Microprocessor Basics- 3 hr . An introduction to the organization and interconnection of microprocessor system components and how these relate to a computer system. Covers the IBM PC type architecture microcomputer system. Students will learn to design microcomputer systems using industry standard components and assemblies. Topics include machine architecture, operating systems, arithmetic logic, data handling, bus concepts, interrupt concepts, subroutines, stack operations, and elementary machine language programming. (Offered Fall)

EET 202L AC Theory - 4 hrs. A study of the basic principles of alternating circuits, vectors, phase relationships, inductance, capacitance, impedance, and reactance. Includes the application of network theorems to AC analysis, and investigation of resonance phenomena. Laboratory work to apply the concepts studied will be included in this course. Prerequisite: EET 154L.(Offered Spring)

EET 205L Digital Electronics - 4 hrs. A study of digital fundamentals, including Boolean Algebra, different base numbering systems, logic gates and combinational and sequential logic. Introduction to simplification techniques such as Karnaugh mapping. The basic concepts of digital design are presented. Includes laboratory. Corequisites: MTH 112 (Offered Fall)

EET 206L Solid State Theory- 4 hrs. An introduction to semiconductor physics, including electronic devices such as solid state diodes, BJT and FET transistor amplifier circuits. The emphasis is given on the understanding of basic circuit analysis. Computer methods are used for transient analysis. Includes laboratory. Prerequisite: EET 154L. (Offered Fall)

EET 218L Industrial Electronics I- 4 hrs. Design, analysis, and application of circuits using operational amplifiers, four-layer solid state devices such as SCR's and triacs, and linear integrated circuits. Discussion of AC/DC motors and generators, and other industrial control devices. Laboratory included. Prerequisites: EET 205L, EET 206L. (Offered Spring)

EET 219L A.C. \& D.C. Motors - 3 hr ( 2 hrs Lec, 3 hrs Lab ) Provides an understanding of electrical machinery. The study includes transformer theory and application, single-phase and three-phase connections, auto-transformers and special instrument transformers. The course also includes a study in the development of horsepower, torque, and efficiency as related to the operation of D.C. motors and generators, single-phase and three-phase motors, and alternators, step-motors, resolvers and synchros. Comparisons in the performance of machines are made. Covers design of circuits for single-phase \& three-phase AC \& DC motors. Laboratory experiments allow the demonstration of the concepts discussed in the classroom. Prerequisite: EET 202L AC Theory or Departmental Approval (Offered Spring)

EET 230L Applied Instrumentation - 3 hr ( 2 hrs Lec, 3 hrs Lab) Designed for all engineering technology students this course covers real-world applications of computers and devices for electronic instrumentation. Studies industrial devices most commonly used by industry in Automated Process Control Systems. Students learn about electrical and mechanical transducers used for the measurement of temperature, pressure, flow and position, and complete exercises using computers and computer interfacing to give a realistic approach to the industrial application of these devices. Prerequisite: MTH 112 (Offered Spring)

EET 280L Computer Networking - 4 hr ( 3 hrs Lec, $3 \mathrm{hrs} \mathrm{Lab} \mathrm{)} \mathrm{An} \mathrm{introduction} \mathrm{to} \mathrm{computer} \mathrm{networks}$. fundamentals of modern networking theory are covered. The course includes the terminology and technology of basic through state-of-the-art networking hardware and software. Network system concepts are examined from a wide range of applications including small workgroups, local area networks, wide area networks, and global networking. Applications to PC networks using Microsoft

Networks including the Internet and the World Wide Web will be presented. The course prepares the student to take the Network+ certification exam. (Offered Fall)

EET 309L Automatic Control Systems I-4 hrs. Review of Laplace transform techniques. An introduction to closed-loop control systems including elementary physical system models, the concept of a transfer function, block diagrams and signal flow graphs, and time domain analysis. First and second order systems are emphasized, utilizing computer analysis. Prerequisite: EET 218, EET 219. (Offered as needed)

EET 315 Programmable Devices- 3 hr . This course covers the design and implementation of digital systems utilizing modern programmable devices from companies such as Xilinx, Altera, and Intel. Prerequisite: EET 205L Digital Electronics (Offered as needed).

EET 318 Digital Systems - 3 hrs. A study of basic logic functions, random and sequential logic circuits, memory, analog-to-digital and digital-to-analog converters, code converters, and applications of logic circuits in digital systems. Prerequisites: EET 205L. (Offered Fall)

EET 351 Advanced Circuit Analysis - 3 hrs. A comprehensive coverage of circuit analysis utilizing the Laplace transform. Covers active filter design, and computer solutions using PSPICE. Prerequisites: EET 202L. (Offered as needed)

EET 357L Linear Integrated Circuits - 4 hrs . An introduction to operational amplifiers and linear integrated circuits. Applications of operational amplifiers including instrumentation, signal generation, filter and control circuits. Uses computer-aided circuit analysis. Laboratory included. Prerequisites: MTH 126, EET 206L. (Offered as needed)

EET 411 Data Communication Systems - 3 hrs. Overview of digital communication and an introduction to the concepts that lead to the implementation of digital systems. Topics covered are digital signal techniques, modulation and demodulation, error control coding and system synchronization, and application of phase-locked loops. The effects of noise and noise-induced design trade-offs are discussed and the complete design of a bit synchronizer is presented. Prerequisite: EET 206L. (Offered as needed)

EET 421 Computer Design \& Construction - 3 hr (2 hrs Lec, 3 hrs Lab) This course covers the current state of the art in computer design as applied to industrial applications and computer networking. This course covers the material necessary to take the A+ certification. Prerequisite: EET 280 (Offered Spring)

EET 422L Programmable Controllers - 4 hr ( 3 hrs Lec, 3 hrs Lab) Designed to introduce the student to a wide range of industrial automatic controls. The programmable logic controller is the base of study with the emphasis on programming. Included are the various types of transducers common to the industrial environment and the interfacing of I/O devices to the PLC. Modes of control, process response, and the final correcting devices are discussed. Prerequisite: EET 218L (Offered Fall)

EET 428 EET Capstone Design Phase I - 1 hr . Designed to demonstrate proficiency in analysis, layout, and completion of an electrical project. This first course is provided to facilitate project selection, project planning/scheduling, literature survey, and proposal writing. The student must complete an acceptable project proposal including presentation. Meeting times are flexible. . Prerequisite: Senior Standing (Offered Fall and Spring)

EET

EET Capstone Design Phase II - 1 hr . A continuation of EET 428, this course focuses on the completion of the project and presentation of the final results. The course is conducted to simulate the procedures utilized by local industries to conduct engineering projects. An objective of the course is to demonstrate and practice the diverse skills and teamwork required in the modern workplace. Prerequisite: EET 428 (Offered Fall and Spring)

Digital Signal Processing - 3 hr . This course provides an understanding of the applications for digital signal processors (DSP). Processor architectures are compared and industry standard evaluation tools are utilized to familiarize the student with DSP programming. Prerequisite: EET 240L Microcontrollers (Offered as needed).

Advanced Microprocessors - 3 hrs. A study of the 32-bit advanced processors from Motorola and Intel. Covers the architecture, memory design, and addressing, and the instruction set with machine language and C++ programming. Prerequisite: EET 240L, EET 318. (Offered as needed)

Special Topics in Electrical Engineering Technology - 1 to 4 hr . This course 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 as needed)

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. Prerequisites: EET 318.


## MECHANICAL ENGINEERING TECHNOLOGY

Graduates of this program apply scientific and engineering principles to power generation and transmission, tool and machine design, computerized manufacturing processes and techniques, computer-assisted design, and industrial materials and methods. Graduates find employment as designers of mechanical equipment, managers and supervisors of manufacturing processes, in technical sales, and as field engineers.

## MECHANICAL ENGINEERING TECHNOLOGY <br> 128 Credit Hours

Accredited by the Technology Accreditation Commission (TAC) of the
Accreditation Board for Engineering and Technology (ABET)
111 Market Place, Suite 1050
Baltimore, MD 21202

## Freshman Year

First Semester

| ORI | 101 | Survival Skills | 1 |
| :--- | :--- | :--- | :--- |
| ENG | 101 | Composition I | 3 |
| MDT | 111 L | Technical Drafting | 3 |
| MTH | 112 | Pre-Calculus Algebra | 3 |
|  |  | ${ }^{1}$ Humanities or Fine Arts | 3 |
|  |  | Health, PE or Military Science | $\underline{2}$ |
|  |  |  | 15 |

## Senior Year

First Semester

| ECO | 300 | Engineering Economics | 3 | ENG 205 | General Speech |
| :--- | :--- | :--- | :--- | :--- | :--- |
| MDT 302 | Technical Design Principles | 3 | MDT/MET | Electives | 3 |
| MET 413 | Quality Control \& Reliability | 3 | MET 402 | Machine Design | 6 |
| MDT/MET | Elective | 3 | MET 431L | MET Lab IV | 3 |
| MET 430L | MET Lab III | 1 |  | ${ }^{2}$ Social Science | 1 |
| TBC 201 | Technical Commun. | $\underline{3}$ |  |  | $\underline{3}$ |
|  |  | 16 |  | 16 |  |

${ }^{1}$ Literature, Philosophy, Foreign Language, Art, Music, Theatre, or Dance. All students must take a six-semester credit hour sequence in literature or history.
${ }^{2}$ Economics, History, Anthropology, Geography, Political Science, Psychology, Sociology, etc. All students must take a six-semester credit hour sequence in literature or history.

## TECHNICAL ELECTIVE COURSES

The student will select three advisor-approved courses from the following list. Students may also select courses from other Engineering Technology programs if their advisor approves them as being related to the student's career goals.

## ELECTIVES

Thermal Science

| MET | 405 | Hydraulic Power | 3 |
| :--- | :--- | :--- | :--- |
| MET | 407 | Fundamentals of HVAC | 3 |
| MET | 408 | Thermal Design | 3 |
| MET | 410 | Propulsion | 3 |
| MET | 490 | Special Topics in EET | 1 to 4 |
| Technology course approved by Advisor 3 | MDT |  |  |

## Mechanical Design

| MDT | $204 L$ | Electronics Drafting | 3 |
| :--- | :--- | :--- | :--- |
| MDT | 206 | Architectural Drafting | 3 |
| MDT | 210 | Piping \& Sheet Metal Draft | 3 |
| MDT | 301 | Descriptive Geometry | 3 |
| MDT | 306 | Structural Drafting | 3 |
| 313 | CAD | Design \& Drafting I | 3 |
| MDT | 414 | CAD Design \& Drafting II | 3 |
| MET | 409 | Mechanical Vibration | 3 |
| MET | 490 | Special Topics in EET | 1 to 4 |
| Technology Course approved by Advisor | 3 |  |  |

## Manufacturing

MET 414 Operations Planning \& Scheduling ..... 3
MET 415 Design of Manufacturing Facilities ..... 3
MET 416 Operations Research ..... 3
MET 421 Numerical Control of Machines ..... 3
MET 490 Special Topics in Electrical Engineering Technology ..... 1 to 4
Engineering Technology Course approved by Advisor ..... 3

## COURSE DESCRIPTIONS

MET 200 Electromechanical Principles - 3 hr. 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
knowledge of electromechanical devices and measuring instruments. Prerequisite MTH 113 Precalculus Trigonometry (offered Spring)

MET 202 Dynamics - 3 hr . A study of the movement of bodies and the description of their motion resulting from applied forces. The kinematical concepts of displacement, velocity, and acceleration, forcesystem kinetics, and the application of momentum and energy conservation laws are covered. Prerequisites: TGC 217 Statics,. (Offered Fall))

MET 204 Fluid Mechanics and Hydraulics - 3 hrs. A study of the fundamentals of fluid mechanics including fluid properties, fluid statics and dynamics, continuity and energy principles. Fluid flow in piping systems is covered, as well as open channel flow, pneumatics, and hydraulics. Use of the computer is required. Prerequisites: TGC 217 Statics. (Offered Fall)

MET 206 Thermodynamics and Heat Transfer - 3 hrs . A study of the basic laws of thermodynamics, the thermodynamic properties of fluids, and the flow of heat energy by conduction, convection, and radiation. Applications include power plants, internal combustion engines, compressors, turbines, Refrigeration, and heat exchangers. Use of the computer is required. Prerequisites: TGC 217 Statics, MTH 126 Calculus II. (Offered Spring)

MET 227 Manufacturing Processes -- 3 hr . _A study of the traditional manufacturing processes such as machining, casting, hot and cold forming, finishing, heat-treating, and joining. Nontraditional machining processes such as chemical machining, electrical discharge machining, laser beam machining, and plasma beam machining will also be covered. (Offered Spring)

MET330L Mechanical Engineering Technology Lab I - 1 hr . This course will include laboratory projects in statics, fluid mechanics, and hydraulics,. Lab preparation sessions will review theory before each project. Computer generated reports will be turned in by each student for each project. A specific lab report format will be adhered to. Prerequisites or co-requisites: TGC 217t Statics, MET 204 Fluid Mechanics \& Hydraulics (Offered Fall)

MET331L Mechanical Engineering Technology Lab 2-1 hr. This course will include laboratory projects in thermodynamics, heat transfer, and electromechanics. Lab preparation sessions will review theory before each project. Computer generated reports will be turned in by each student for each project. A specific lab report format will be adhered to. Prerequisites or co-requisites: MET 200 Electromechanical Principles, MET 206 Thermodynamics and Heat Transfer, (Offered Spring)

MET 402 Machine Design - 3 hrs. A study of the methodology of design. The steps in carrying out a project from conception, analysis, design, and costing to completion are covered. Students perform a real-life design projectPrerequisites: MDT 302 Technical Design Principles

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 204 Fluid Mechanics and Hydraulics, MET 206 Thermodynamics and Heat Transfer.

MET 407 Fundamentals of Heating, Ventilating, and Air Conditioning - 3 hrs. A study of the basic principles of commercial and residential air conditioning and heating systems. The calculation of heating and cooling loads and the use of the psychometric chart is covered. Use of the computer is required. Prerequisites: MET 206 Thermodynamics and Heat Transfer.

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. Prerequisites: MET 206 Thermodynamics and Heat Transfer.

MET 409 Mechanical Vibration - 3 hrs. A study of the response of structures to vibrational motion. Includes free and forced motion, and damped and undamped systems. Concepts of natural mode, natural frequency, and resonance phenomena are covered. Use of the computer is required. Prerequisites: MET 202 Dynamics, TGC 218 Strength of Materials.

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. MET 206 Thermodynamics and Heat Transfer.

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 in these manufacturing situations. Use of the computer is required. Prerequisite: Senior standing or permission of instructor..

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..

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..

MET 421 Numerical Control of Machines - 3 hrs. An introduction to numerical control as applied to drilling, milling, and turning operations. Mathematical methods 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. Prerequisites: MET 227 Manufacturing Processes.

MET 430L Mechanical Engineering Technology Lab 3-1 hr. This course will include laboratory projects in manufacturing processes, strength of materials, and properties of materials. Lab preparation sessions will review theory before each project. Computer generated reports will be turned in by each student for each project and some oral presentations will be required. A specific lab report format will be adhered to. Prerequisites or co-requisites: MET 227 Manufacturing Processes, TGC 218 strength of Materials, IT 311 Properties of Materials (Offered Fall)

MET431L Mechanical Engineering Technology Lab 4-1 hr. _This course will include laboratory projects in quality control and machine design. Lab preparation sessions will review theory before each project. Computer generated reports will be turned in by each student for each project and some oral presentations will be required. A specific lab report format will be adhered to. Prerequisites or co-
requisites: MET 413 Quality Control and Reliability, MET 402 Machine Design (Offered Spring)

MET 490 Special Topics in Mechanical Engineering Technology - 1 to 4 hr . This course focuses on topics based on modern trends in mechanical engineering technology. This course can be taken multiple times (in different topics) with students receiving additional credit each time. The specifics of each course will be identified at the beginning of each semester. Prerequisite: Junior Standing (Offered as needed)

MDT 111L Technical Drafting - 3 hrs ( 6 hrs . Drafting Lab). An introductory study of technical drawing theory and practice, including lettering, use of drafting instruments, orthographic projection, sections, auxiliary views, pictorial sketching, and dimensioning. An introduction to computer-aided-drafting (CAD) is included. Prerequisite: None (Offered Fall and Spring)

MDT 112L Machine and Tool Drafting - 3 hrs ( 6 hrs . Drafting Lab). A continuation of MDT 111L. Includes shop processes, theory and practice of dimensioning and tolerances, an introduction to detail and working drawings, pictorial drawing, reproduction of drawings, machine shop blueprint reading, and a continuation of CAD. Prerequisite: MDT 111L Technical Drafting (Offered Spring)

MDT 204L Electrical/Electronics Drafting - 3 hrs. (6 hrs. Drafting Lab) A study of specialized electronic drafting theory, practice of dimensions and tolerances. Detail and working drawings, pictorial drawing, and reproduction of drawings are covered. (An elective course in the Mechanical Design option) Prerequisite: MDT 111L Technical Drafting

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

MDT 210 Piping and Sheet Metal Drafting - 3 hrs . A course on designing and drafting pipe systems. It includes symbols, methods of representing pipe and pipe fittings, specification of parts and language of piping, layout, and drafting of sheet metal ducts. All work is done using CAD. (An elective course in the Mechanical Design option) Prerequisite: MDT 111L Technical Drafting

MDT 213 Computer Graphics - 3 hrs. A first course in the use of AutoCad ${ }^{\mathrm{TM}}$ software. Students are taught methods of computer graphical representation in two dimensions. Prerequisite: MDT 111L Technical Drafting (Offered Fall)

MDT 252 AutoCAD ${ }^{\mathrm{TM}}$ for Apparel - 3 hrs. (2 two-hour lecture/lab periods per week) An introductory study of AutoCAD ${ }^{\mathrm{TM}}$ 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. Prerequisites: none (Offered Spring)

MDT 301 Descriptive Geometry - 3 hrs. ( 6 hrs. Drafting Lab) A study of fundamental concepts of descriptive geometry through an emphasis on logical reasoning, visualization and practical applications. This course is based on the principles of orthographic projection: true length of a line, point of view of a line, edge view of a plane, and true shape of a plane. (An elective course in the Mechanical Design option) Prerequisite: MDT 112L Machine and Tool Drafting

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. (An elective course in the Mechanical Design option) Prerequisites: TGC 218 Strength of Materials and MDT 111L Technical Drafting

MDT 313 Computer-Aided Drafting and Design I-3 hrs. This course offers hands-on training in two- and three-dimensional computer-aided design software. (An elective course in the Mechanical Design option) Prerequisite: MDT 213 Computer Graphics.

MDT 407 Mechanical Design I-3 hrs. The study of basic fixture and jig design with emphasis on sources of reference materials and interpretation. Accepted methods of industrial procedure and practice are explained and followed. Detailing is prepared from existing layouts and designs. (An elective course in the Mechanical Design option) Prerequisite: MDT 112 Machine and tool Drafting

MDT 414 Computer-Aided Drafting and Design II - 3 hrs. A continuation of MDT 313. Creation of a fullscale three-dimensional computer model design; various checks, such as corridor clearance, and horizontal and vertical layout schemes that can be carried out using a model; and error-reduction design methods, not possible with two-dimensional modeling techniques, are presented. (An elective course in the Mechanical Design option) Prerequisite: MDT 313 Computer-Aided Drafting and Design I

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 ${ }^{\text {TM }}$, word processing for technical reports, and spreadsheet programs as a management and scientific tool. (Offered Fall and Spring)

TBC 201 Technical Communications - 3 hrs. A study of the demands for clear, concise expression of thoughts in written communication in a technical environment. Objectives, basic principles, and rules used in formal communication are explained. Procedures for organizing and writing technical reports and letters are covered and applied by students. Oral presentations and briefings are included (Offered Fall and Spring)

TBC 212 Methods of Engineering Analysis - 3 hrs . This course focuses on the application of algebra, trigonometry and calculus to engineering problems. Microsoft Excel ${ }^{\mathrm{TM}}$ is used for curve fitting, solving single and simultaneous algebraic and differential equations. Probability, statistics, and special functions are also addressed. Prerequisites: TBC 102 Microcomputer Skills for Technology, MTH 126 Calculus II (Offered Fall)

TGC 202 Applied C++ for Engineering Technology - 3 hrs. An introduction to the applications of the C++ programming language in the fields of engineering and technology. The course focuses on how C++ is used to solve engineering problems, integrate software into hardware systems and extend the functionality of many industry standard software applications. Prerequisite: TBC $\mathbf{1 0 2}$ Microcomputer Skills, MTH 113 Precalculus Trigonometry

TGC 217 Statics - 3 hrs. A study of force systems in equilibrium and their action on bodies at rest. Also covers the methods of joints and sections for the solution of trusses, friction, and first and second moments of areas. The course emphasizes development of problem solving skills. Prerequisite: MTH 113 Precalculus Trigonometry (Offered Fall and Spring)

TGC 218 Strength of Materials - 3 hrs. A study of the concepts of stress, strain, and Hooke's Law. Also studied is the strength and deformation of axial force members, shafts, beams, and columns, and an introduction to combined stress. Prerequisite: TGC 217 Statics, MTH 126 Calculus II (Offered Spring)

## CAREER/TECHNICAL EDUCATION AND INDUSTRIAL TECHNOLOGY Bachelor of Science Degree Programs

Industrial Technology is a field of study designed to prepare technical and/or management oriented professionals for employment in business, industry, education and government. Industrial Technology is primarily involved with the management, operation, and maintenance of complex technological systems while Engineering and Engineering Technology are primarily involved with the design and installation of these systems (National Association of Industrial Technology, 2000).

## PROGRAM OBJECTIVES

The objectives of the bachelor's degree program in Industrial Technology and teaching field programs in career/technical education are to provide students with knowledge and understanding of:

1. Diverse technology systems and their functions and applications in the four major areas of technology.
2. The nature of technology; and its relationships and impacts among technological achievements, the environment, the advancement of science, the individual, and society.
3. The application of technology systems, information, tools, and materials in solving individual, societal, and environmental problems.
4. The nature of technology in making ethical decisions about technological-related issues, including the development and use of technology, technology processes, and technology resources.
5. The safe, effective, efficient, and creative use of technological re-sources and materials in performing technological processes.
6. The application of mathematics, natural/physical sciences, social sciences and technological concepts in solving practical technology problems and extending human capabilities.
7. Principles, practices, and standards used in performing tasks represented of the technology based systems.
8. Principles and practices of owning and operating a technology or industrial related business.
9. Supervision of subordinates and management of technology systems in the production of consumer goods and services.
10. Design, develop, and deliver instruction in a career/technical education program at the secondary and post-secondary levels.

## STUDENT ORGANIZATIONS

Available student organizations are (1) The National Association of Industrial Technology for Industrial Technology major; (2) International Technology Education Association for Technology Education majors; and (3) Iota Lambda Sigma Fraternity for Technical Education majors.

## BACHELOR'S DEGREE PROGRAM

The Department offers a Bachelor of Science Degree Program in Industrial Technology with instructional programs as described below. Students who have completed an approved Associate of Science Degree Program (General Curriculum) from a regionally accredited 2-year college are encouraged to apply for admission to the
bachelor's degree program. Under the provisions of the Alabama Articulated General Studies Committee (AGSC), students may transfer 64-semester hours of course work in the General Studies component into the Bachelor of Science Degree Program in Industrial Technology.

1. Industrial Technology. Instructional programs are offered in:
a. General Industry and Technology Option.
b. Computer-Aided Manufacturing Option.
c. Computer-Aided Drafting and Design Option.
d. Graphic Arts Communication Option.
e. Construction Management Option.
f. Applied Technology Option.
g. Industrial Technology Education Option.
2. Teaching fields in Career/Technical Education. In cooperation with the Department of Curriculum and Instruction, School of Education, two teaching field majors are offered in Career/Technical Education. Specific admission requirements and the program of study for each teaching field are outlined in this bulletin under the School of Education
a. Technical Education.
b. Technology Education.

## MINOR IN INDUSTRIAL TECHNOLOGY

| ITE300 | Time and Motion Studies | 3-semester hours |
| :--- | :--- | :--- |
| ITE310 | Manufacturing Cost Analysis | 3-semester hours |
| ITE327 | Statistical Quality Controls | 3-semester hours |
| ITE341 | Occupational Safety and Health | 3-semester hours |
| ITE433 | Plant Layout and Materials Handling | 3-semester hours |
| ITE434 | Production and Inventory Controls | 3-semester hours |
|  | Total | 18-semester hours |
|  | Computer-Aided Manufacturing Option |  |
|  | 128 Semester Hours |  |

This option prepares students for careers in the application of modern technology to the design and manufacturing of products, consumer goods and services. Emphasis is placed on manufacturing processes, production management and computer-aided manufacturing. Graduates are prepared for entry-level employment in several functional areas of manufacturing, including production planning and controls, production systems, manufacturing management, and industrial materials and their processing.


## Sophomore Year

Fall Semester
ITE 205 Power and Energy Systems
PHY 103L General Physics I
TBC 201 Technical Communication or
OSM 310 Business Communication
ITE 221 Mfg. Materials and Processes II
ECO 232 Microeconomics
Total

Sem. Hrs.

Sem. Hrs.
ENG 205 General Speech 3
PHY 104L General Physics II 4
PSY 201 General Psychology or (3)
SOC 201 Introduction to Sociology
ITE 210 Mfg and Machines Tools Oper 3
ITE 207 CADAM $\underline{3}$
Total

## Junior Year

Fall Semester

| ENG | 203 | World Literature I | 3 |
| :--- | :--- | :--- | :--- |
| ECO | 231 | Macroeconomics or | $(3)$ |
| HIS | 102 | World History II | $(3)$ |
| ITE | 341 | Occupational Safety and Health | 3 |
| ITE | 300 | Time and Motion Studies | 3 |
| ITE | 316 | Introduction to CNC | 3 |
|  |  | Approved Elective | $\underline{3}$ |
|  |  | Total | 18 |

3
18

3 Total

Spring Semester
ENG 204 World Literature II
Sem. Hrs.
(3) ITE 327 Statistical Quality Controls 3
(3) ITE 317 Industrial Robotics 3
$\begin{array}{lllll}3 & \text { ITE } & 311 & \text { Properties of Materials } & 3 \\ 3 & \text { ITE } & 310 & \text { Manufacturing Cost Analysis } & \underline{3}\end{array}$
$\begin{array}{lllll}3 & \text { ITE } & 311 & \text { Properties of Materials } & 3 \\ 3 & \text { ITE } & 310 & \text { Manufacturing Cost Analysis } & \underline{3}\end{array}$

## Senior Year

Fall Semester
Sem. Hrs. Spring Semester
Sem. Hrs.

| ITE | 433 | Plant Layout and Mat. Handling | 3 | ITE | 434 | Prod. and Inventory Controls | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ITE | 430 | Design and Mfg. Problems | 3 | ITE | 484 | Introduction to CIM | 3 |
| ITE | 431 | Improved Mfg Systems | 3 | ITE | 421 | Tech. R\&D in a Global Society | 3 |
| ITE | 410 | Industrial Management | 3 | ITE | 405 | Industrial Supervision | 3 |
|  |  | Approved Elective | $\underline{3}$ |  | Approved Elective | $\underline{3}$ |  |
| Total |  | 15 | Total |  | 15 |  |  |



SCHOOL OF ENGINEERING AND TECHNOLOGY

## Computer-Aided Drafting and Design Option 129 Semester Hours

This option provides the student with opportunities to learn several computer graphics applications software packages ranging from AutoCAD to SilverScreen. Students become masters of CAD and learn how to create 3D technical animation. This option prepares the computer graphics professional for careers in many fields including: industrial design, architectural drafting, document management, career/technical education, and others.

## Freshman Year

Fall Semester

| ORI | 101 | Survival Skills | 1 |
| :--- | ---: | :--- | :--- |
| ENG | 101 | Communication I | 3 |
| ITE | 102 | Intro. to Technological Systems | 3 |
| MDT | 111 | Technical Drafting | 3 |
| MTH | 112 | Pre-Calculus Algebra | 3 |
| HIS | 101 | World History I | $\underline{3}$ |
|  |  | Total | $\mathbf{1 6}$ |

Sem. Hrs. Spring Semester
ENG 102 Communication II 3
ART 101 Art Appreciation 3
CMP 102 Intro to Programming I or
TBC 102 Microcomputer Skills for Tech.
MTH 113 Pre-Calculus Trigonometry
MDT 112 Machine Tools Drafting 3
Elective FAS102, HED101, NHM103, or PED elective
$\underline{2}$
Total 17
Sophomore Year
Sem. Hrs. Spring Semester
Sem. Hrs.
3 ITE 107 Mfg Materials and Processes 3
4 PHY 104L General Physics II 4
(3) PSY 201 General Psychology or
(3) SOC 201 Introduction to Sociology (3)

3 MDT 210 Piping/Sheet Metal Drafting 3
$\underline{3}$ ITE 207 CADAM $\underline{3}$
16 Total 16

## Junior Year

Fall Semester

| ENG | 203 | World Literature I | 3 | ENG 204 | World Literature II or | (3) |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ITE | 341 | Occupational Safety and Health | 3 | MUS 101 | Music Appreciation | (3) |  |
| HIS | 102 | World History II or | $(3)$ | ITE | 327 | Statistical Quality Controls | 3 |
| ECO | 231 | Macroeconomics | $(3)$ | MDT 302 | Technical Design Principles | 3 |  |
| MDT | 213 | Computer Graphics | 3 | ITE | 311 | Properties of Materials | 3 |
| MDT | 301 | Descriptive Geometry | $\underline{3}$ | ITE | 310 | Manufacturing Cost Analysis | $\underline{\mathbf{3}}$ |
|  |  | Total | $\mathbf{1 8}$ |  |  | Total | $\mathbf{1 5}$ |

## Senior Year

Fall Semester
Sem. Hrs. Spring Semester
Sem. Hrs.

MDT 306 Structural Drafting 3
ITE 300 Time and Motion Studies 3
MDT 313 Computer-Aided Draft/Design I 3
MET 200 Electromechanical Principles 3

Approved Elective

MDT 407 Mechanical Design I 3
MDT 414 Computer-Aided/Draft/Design II 3
ITE 421 Tech. R\&D in a Global Society 3
ITE 315 Computer Applications in Mfg. 3 Approved Elective 3
MET 331L MET Lab $2 \rightarrow 1$

## Graphic Arts Communication Option

This option involves studying the technology needs to produce the millions of printed products which are used in all aspects of our lives. The program also includes those courses needed to understands and operate a successful business and to be involved in supervision and management. Opportunities are unlimited in Graphic Communication. Qualified individuals are needed in all phases of the industry, including design and layout, copy preparation, photo and electronic conversion, image carriers, image transfer, and binding/finishing. In addition there is a high demand for entry-level supervisors, managers and sales representatives.

## Freshman Year

Fall Semester
Sem. Hrs. Spring Semester
Sem. Hrs.

| ORI | 101 | Survival Skills | 1 | ENG | 102 | Communication II | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ENG | 101 | Communication I | 3 | CMP | 102 | Intro to Programming I | (3) |
| ITE | 101 | Printing History/Typography | 3 | TBC | 102 | Microcomputer Skills for Tech. | (3) |
| ITE | 105 | Graphic Communication Tech. | 3 | ITE | 106 | Image Conversion | 3 |
| MTH 112 | Pre-Calculus Algebra | 3 | ITE | 110 | Graphic Arts Processes | 3 |  |
| MDT 111 | Technical Drafting | $\underline{3}$ | MTH 113 | Pre-Calculus Trigonometry | 3 |  |  |
|  |  | Total | $\mathbf{1 6}$ | Elective | FAS102, HED101, NHM103, |  |  |
|  |  |  |  |  | or PED elective | $\underline{2}$ |  |
|  |  |  |  | Total | $\mathbf{1 7}$ |  |  |

Fall Semester

| CHE | 111 | Applied Chemistry I | 3 |
| :--- | :--- | :--- | :--- |
| CHE | 113 L | Applied Chemistry I Lab | 1 |
| ECO | 232 | Microeconomics | 3 |
| HIS | 101 | World History I | 3 |
| ITE | 102 | Introduction to Tech. Systems | 3 |
| ITE | 213 | Offset-Image Transfer | $\underline{3}$ |
|  |  | Total | $\mathbf{1 6}$ |


| ART | 101 | Art Appreciation | 3 |
| :--- | :--- | :--- | :--- |
| CHE | 112 | Applied Chemistry II | 3 |
| CHE | 114L | Applied Chemistry II Lab | 1 |
| ITE | 217 | Graphic Arts Design/Planning | 3 |
| HIS | 102 | World History II or | $(3)$ |
| ECO | 231 | Macroeconomics | $(3)$ |
| ITE | 220 | Binding and Finishing | $\underline{3}$ |
|  |  | Total | $\mathbf{1 6}$ |

Junior Year
Fall Semester
Sem. Hrs. Spring Semester Sem. Hrs.

| ENG | 203 | World Literature I | 3 | ENG | 205 | General Speech | 3 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| ITE | 300 | Time and Motion Studies | 3 | ENG 204 | World Literature II or | $(3)$ |  |
| ITE | 307 | Printing Management/Estimating | 3 | MUS | 101 | Music Appreciation | $(3)$ |
| ITE | 341 | Occupational Safety and Health | 3 | ITE | 308 | Printing Ink and Substrates | 3 |
| TBC | 201 | Technical Communication or | $(3)$ | ITE | 327 | Statistical Quality Controls | 3 |
| OSM | 310 | Business Communication | $(3)$ | SOC | 201 | Introduction to Sociology or | $(3)$ |
| MGT 207 | Legal Environment/Ethics | $\underline{3}$ | PSY | 201 | General Psychology | $\frac{(3)}{15}$ |  |

## Senior Year

| Fall | Semester | Sem. Hrs. | Spring |  | Semester | Sem. Hrs. |  |
| :--- | :--- | :--- | :---: | :--- | :--- | :--- | :---: |
| ITE | 417 | Electronics Publishing I | 3 | ITE | 434 | Prod. and Inventory Controls | 3 |
| ITE | 433 | Plant Layout \& Materials Hand | 3 | ITE | 419 | Quality Controls in Printing Ind. | 3 |
| ITE | 456 | Senior Project/Seminar | 3 | ITE | 421 | Tech. R\&D in a Global Society | 3 |
| MKT | 315 | Principles of Marketing | 3 | ITE | 490 | Internship | 3 |
|  |  | Approved Elective | $\underline{3}$ |  |  | Approved Elective | $\underline{3}$ |
|  |  | Total | $\mathbf{1 5}$ |  |  | Total | $\mathbf{1 5}$ |

# INDUSTRIAL TECHNOLOGY MAJOR (INT) 

## Technological Studies Option

The Technological Studies Option within the Industrial Technology Major prepares students for a variety of managerial positions in industry. Students in this option must complete 18 -semester hours of course work in Industrial Distribution Technology (Minor in Marketing is required), Industrial Management Technology, Industrial Safety Management Technology; a minor anywhere on campus; or approved courses in science and mathematics.

First Semester Second Semester

## FRESHMAN YEAR

|  | FR |  |
| :--- | :--- | :--- |
|  |  |  |
| INT102 Intro. To Technological Systems/Computer | 2 |  |
| MDT111 Technical Drafting with CAD | 3 |  |
| MTH112 Pre-Calculus Algebra | 3 |  |
| ENG101 Composition I | 3 |  |
| ORI101 Survival Skills | 1 |  |
| PHY103 General Physics I | 4 |  |
| Health Education or physical fitness electives |  | $\underline{2}$ |
|  | Total | 18 |


| EET200 Basic Electricity/Electronics | 4 |  |
| :--- | :--- | :--- |
| INT206 Computer Applications in Industry | 3 |  |
| HIS101 or HIS201 | 3 |  |
| ENG201 or ENG203 | 3 |  |
| ENG205 General Speech | Total | $\underline{3}$ |
|  |  |  |


| INT314 Construction Technology | 3 |
| :--- | :--- |
| INT303 Mass Transportation Technologies | 3 |
| INT305 Energy Technologies | 3 |
| Approved Area II Elective | 3 |
| INT311 Properties of Materials | 3 |
| Concentration, Minor, or Approved Elective | $\underline{3}$ |
|  | Total |


| INT410 Industrial Management Technology | 3 |
| :--- | :--- |
| INT408 Human Factors Engineering Technology | 3 |
| INT414 Multiple Technology Systems | 3 |
| Concentration, Minor or Approved Electives | $\frac{6}{9}$ |

## SOPHOMORE YEAR

| INT105 Graphics Communication Technology | 3 |
| :--- | :--- |
| INT107 Industrial Materials and Processes | 3 |
| MTH113 Pre-Calculus Trigonometry | 3 |
| ENG102 Composition II | 3 |
| PHY104 General Physics II | $\underline{4}$ |
|  | Total |


| INT205 Power Technology | 3 |  |
| :--- | :--- | :--- |
| INT207 CAD/CAM | 3 |  |
| ECO231 or ECO232 | 3 |  |
| Approved Area II Elective | 3 |  |
| Approved IV Elective | $\underline{3}$ |  |
|  | Total | $\underline{15}$ |

## JUNIOR YEAR

| INT306 Information Technologies | 3 |
| :--- | :--- |
| INT304 Manufacturing Technology | 3 |
| Area IV Elective | 3 |
| INT327 Statistical Process Controls | 3 |
| Concentration, Minor, or Approved Elective | $\underline{3}$ |
|  | Total |

## SENIOR YEAR

| INT414 Technological Develop.in a Global Society | 3 |
| :--- | :--- |
| INT422 Waste Management \& Applied Technology | 3 |
| INT404 Productivity Improvements in Industry | 3 |
| Concentration, Minor, or Approved Electives | $\underline{6}$ |
|  | Total; |

# INDUSTRIAL/TECHNOLOGY EDUCATION MAJOR (ITE) 

Emphasis on Technological Studies
The Industrial/Technology Education Major prepares students for instructional positions in industrial/technology education program at the secondary or post-secondary levels. The major includes the teaching field content for admission to an Alternative-A ( $5^{\text {th }}$-Years) Teacher Education Program in Technology Education.

## FRESHMAN YEAR

|  | FR |  |
| :--- | :--- | :--- |
|  |  |  |
| INT102 Intro. To Technological Systems/Computer | 2 |  |
| MDT111 Technical Drafting with CAD | 3 |  |
| MTH112 Pre-Calculus Algebra | 3 |  |
| ENG101 Composition I | 3 |  |
| ORI101 Survival Skills | 1 |  |
| PHY103 General Physics I | 4 |  |
| Health Education or physical fitness electives |  | $\underline{2}$ |
|  | Total | 18 |

## SOPHOMORE YEAR

| EET200 Basic Electricity/Electronics | 4 |  |
| :--- | :--- | :--- |
| INT206 Computer Applications in Industry | 3 |  |
| HIS101 or HIS201 | 3 |  |
| ENG201 or ENG203 | 3 |  |
| ENG205 General Speech | Total | $\underline{3}$ |
|  |  |  |


| INT205 Power Technology | 3 |
| :--- | :--- |
| INT207 CAD/CAM | 3 |
| ECO231 or ECO232 | 3 |
| Approved Area II Elective | 3 |
| Approved IV Elective | Total |
|  | $\underline{3}$ |

JUNIOR YEAR

| INT314 Construction Technology | 3 |
| :--- | :--- |
| INT303 Mass Transportation Technologies | 3 |
| INT305 Energy Technologies | 3 |
| Approved Area II Elective | 3 |
| TTE302 Course Development \& Evaluation in CTE | 3 |
| TTE302 History, Objectives, and Principles of CTE | $\underline{3}$ |
|  | Total |


| INT306 Information Technologies | 3 |
| :--- | :--- |
| INT304 Manufacturing Technology | 3 |
| Area IV Elective | 3 |
| TTE305 Learning Resources \& Technology in CTE | 3 |
| TTE404 Classroom/Lab Mgt \& Student Leadership | $\underline{3}$ |
| Total |  |

## SENIOR YEAR

| INT414 Technological Develop. n a Global Society | 3 |
| :--- | :--- |
| INT422 Waste Management \& Applied Technology | 3 |
| TTE407 Career/Technical Student Organizations | 3 |
| TTE440 Special Needs in CTE | 3 |
| Approved 300-400 INT elective | $\underline{3}$ |
|  | Total |

## INSTRUCTIONAL PROGRAMS FOR TECHNICAL COLLEGE GRADUATES

Introduction. The Programs of Study for Technical College Graduates is similar to a $2+2$ program that is designed for students who have completed a qualified technical associate degree program (or its equivalency) and who are interested in completing the Bachelor of Science Degree Program in Industrial Technology. The program is also available to students who have completed a technical program of study in a government school or business and industry. All required Industrial Technology courses are offered entirely on the internet. These courses are delivered in weekly units allowing students great flexibility with regard to time and place.

Program Requirements. The following program requirements must be satisfied:

- Completion of an approved technical associate degree program or its equivalency prior to being admitted to the Bachelor of Science Degree Program in Industrial Technology.
- Completion of the General Studies courses. These courses may be completed at a regionally accredited junior college or senior college or university. Only courses with a ' $C$ ' grade or higher may be accepted for transfer credits.
- Thirty (30) semester hours must be completed with AAMU.
- Once an approved technical associate degree program (or its equivalency) has been completed, students are eligible to enter the University' Distance Learning Program in the Bachelor of Science Degree Program in Industrial Technology.
- Students must complete an orientation seminar before enrolling in a distance learning course.
- Completion of the minimum 127 semester hours with an overall GPA of $2.00(4.00$ scale) or higher and all other applicable University's requirements to receive the Bachelor of Science Degree. Each program of study includes 52 semester hours in General Studies, and 72 semester hours of specialized courses in the optional area of study.


## General Studies Component

Each program of study includes 52 semester hours of coursework in the subject areas below, . Courses that have been approved by the Alabama Articulated General Studies Committee (AGSC) may be completed at any regionally accredited junior college or senior college or university. The following courses are offered at AAMU.

| Area I: Written Communication (6-semester hours required). | Semester Hours |
| :--- | :---: |
| ENG101 Composition I | 3 |
| ENG102 Composition II | $\frac{3}{6}$ |

Total

Area II: Humanities and Fine Arts (12-semester hours required). Area II Elective
ENG203 World Literature I
ENG205 General Speech
Area II Elective

Semester Hours
3
3
3
Total $\quad \underline{3}$

Area III: Science and Mathematics (11-semester hours required). MTH112 Pre-Calculus Algebra
PHY103L General Physics I or Science I Sequence
Semester Hours
3

PHY104L General Physics II or Science II Sequence
4

Total

| Area IV: History, Behavioral and Social Sciences (12-semester hours required). | Semester Hours |
| :--- | :---: |
| ECO232 Microeconomics | 3 |
| HIS101 World History I or HIS201 American History | 3 |
| Area IV Elective | 3 |
| Area IV Elective | $\underline{3}$ |
|  | $\mathbf{1 2}$ |

## Total

Area V: Others Courses (11-semester hours). The following courses are required in Area V.
CMP102 Introduction to Programming I or TBC102 Microcomputer Skills for Technology
MTH113 Pre-Calculus Trigonometry or higher level mathematics or statistics course
TBC201 Technical Communication or OSM310 Business Communication
Elective course in health education or physical fitness
Semester Hours

## Total

Total for General Studie 52

## Component

## BACHELOR OF SCIENCE IN INDUSTRIAL TECHNOLOGY Applied Technology Option

This option prepares students for managerial, supervisory, and technical positions in today's industry. Students who complete this option maybe admitted to the Master of Science Degree Program in either Industrial Technology Management or Technology Education (Post-secondary teaching). Courses that are listed below meet the requirements for a concentration in industrial management and supervision. Students may also elect concentrations in electronics, computer-aided manufacturing, construction management, graphic arts communication, computer-aided drafting and design, mechanical technology, industrial distribution, or supervisory occupational development. The required courses for each concentration are available in the Department' s office.

## Course Numbers and Titles

I. General Studies Requirements. 52
II. Technical Requirements.

Completed technical associate degree or its equivalency.
(9- to 18 -semester hours awarded for 3 - to 6 -years validated work experience)
III. Professional Requirements

ITE341 Occupational Safety and Health 3
IE300 Time and Motion Studies 3
ITE327 Statistical Quality Controls 3
ITE433 Plant Layout and Materials Handling 3
ITE434 Production and Inventory Controls 3
Approved ITE electives, concentration, or minor area of study 18 33

## Total

IV. Additional technical courses as required to complete the instructional program.

Option
Total for Applied Technology
127

## BACHELOR OF SCIENCE IN INDUSTRIAL TECHNOLOGY Technical/Technology Education

This option prepares students with the knowledge and understanding to design and develop career/technical programs and deliver instruction in area vocational schools, centers for technology, adult training centers, technical college, government schools, and business and industry. It also prepares students for admission to Alternative $5^{\text {th }}$-Years Teacher Education Program in Technical Education. The student must meet the minimum work experience requirements for this option.
Course Numbers and Titles
Semester Hours
I. General Studies Requirements. ..... 52
II. Technical Requirements. ..... 45Completed technical associate degree or its equivalency.(9- to 18 -semester hours awarded for 3- to 6-years validated work experience)
III. Professional Requirements
TTE404 Classroom/Laboratory Management and Student Leadership Development ..... 3
TTE406 Methods of Teaching Career/Technical Education ..... 3
TTE407 Career/Technical Student Organizations ..... 3
TTE440 Special Needs in Career/Technical Education ..... 3
TTE442 History and Principles of Career/Technical Education ..... 3
TTE443 Course Development and Evaluation in Career/Technical Education ..... 3
TTE444 Learning Resources and Technology in Career/Technical Education ..... 3
TTE341 Occupational Safety and Health ..... 3
TTE475 Testing and Assessment in Career/Technical Education ..... 3
TTE450 Practicum or ..... (3)
TTE499 Supervised Occupational Development ..... (3)30
TotalTotal for Industrial Technology Education127
Option

## DESCRIPTION OF COURSES

ITE 101 Printing Industry/Typography - 3 hrs. Elementary principles of typesetting, including layout of the California job case and simple exercises in hand composition; setting simple jobs; advanced techniques of typesetting, composition of color forms, programs, announcements, invitations, and setting display composition. 2Lect/3lab.

ITE 102 Introduction to Technological Systems. 3 hrs . An introductory course in technology. This course explains technology, what it is, how it works, and how it affect our lives. The course centers on the four basic areas of industrial technology systems of manufacturing, construction, communication and transportation. It introduces students to important topics such as resources, design, production systems, and bio-related systems. It also help students develop problem-solving abilities, enhance creativity, assess and apply technology, and develop communication skills. Guided tours and field trips are included. Students are expected to choose specialized of study in Industrial Technology at the end of this course.

ITE 105 Graphic Communication Technology. 3 hrs. Course introduces the student to all major aspects of graphic communication; and covers electronic applications in all area of graphic communication from computer-based text generation and page composition to digital presses. It also includes text on electronic prepress and digital printing, digital image capture, color management, flexographic printing, and the business of printing. Provides the foundations for advanced study in ecological concerns, color science, and digital imaging.

ITE 106L Image Conversion - 3 hrs . Fundamentals of offset presswork; preparation of the one color presswork. 2Lect/3Lab

ITE 107 Manufacturing Materials and Processes I. 3 hrs. The first part of a 2-part course in which comprehensive instruction is provided on various methods of processing metals, plastics, ceramics, and composite materials. Provides the foundations for advanced instruction in manufacturing, industrial materials, automation, process planning, and quality controls.

ITE 110L Graphic Arts Processes - 3 hrs. A study of photographic processes for black and white copy, introduction to color applications, film processing, quality control. 2 Lect/2Lab

ITE 205 Power and Energy Systems - 3 hrs. A basic study of energy sources, means of harnessing and transmitting energy and the effects of power systems. The major types and sources and their selection and uses. Prerequisites: PHY104 and MTH113.

ITE 207 Computer-Aided Design and Manufacturing - 3 hrs. The use of computer in manufacturing design in process, converting design requirements into manufacturing requirements and downloading to CNC machines for manufacturing purposes. Prerequisite: TBC102 or CMP102 and MDT111.

ITE 208L Construction Systems - Three Semesters Hours. A study of the construction industry with regard to concepts of construction technology through experiences in planning, organizing, and controlling of all available resources to produce constructed products on and off-site. Student is expected to build a construction project in the laboratory.

ITE 210 Manufacturing and Machine Tools Operation - 3 hrs. A laboratory based course covering precision measurement, screw threads, cutting tool materials, cutting fluids, machinability of metals, the selection and production of metals, basic metallurgical theory, and heat treatment. 2Lect/2 Lab. Prerequisites: ITE107.

ITE 213L Offset-Image Transfer - 3 hrs. Fundamentals of offset presswork; preparation of the press, one color presswork; Methods of offset presswork; including press preparation, stripping and platemaking, make-ready, press running; mechanism and upkeep; running difficult papers and forms; and multicolor work. 2 Lect/3 Lab.

ITE 217 Graphic Design and Planning - Two Semester Hours. A computer based course in designing and composing such types of printing requirements as calling cards, invitations, announcements, broadsides, poster, tickets, booklets, catalogs, type and color harmony, color mixing, paper. 2Lect/2Lab

ITE 299 Technical Specialty Transfer Credits. Credits awarded for completed course work in a post-secondary community/technical college, military schools, or business and industry.

ITE 300 Time and Motion Studies - 3 hrs. Introduction to methods engineering in business and industry including improving methods of performing and measuring work completed by individual or groups
of employees through motion analysis, charting techniques, and principles of motion economy. Use of the computer is required.

ITE 303 Transportation Systems - 3 hrs. An investigation of transportation systems beyond the capability of man. Emphasis placed on air, land, water, and space travel. Required course for Technology Education Majors. Prerequisite: ITE205.

ITE 306 Communication Systems - 3 hrs. A laboratory based course designed to provide the technology education teacher with a work knowledge of various modes of communication. Prerequisites. TBC102 or CMP102, ITE105, and EET200.

ITE 307 Printing Management and Estimating - 3 hrs. A course in planning, organizing, and maintaining the printing plant from organization and operations of various departments, layout of the shop, equipment selection and acquisition, materials, and location; and a study of the responsibility of the estimator in the printing plant and the importance of estimating; estimating various kinds of composition, presswork, paper, and other cost elements which enter into production of typical jobs..

ITE 308L Printing Ink and Substrates - 3 hrs.
ITE 310 Manufacturing Cost Analysis - 3 hrs, Introduction to principles of accounting, and the concepts and techniques of cost accounting. Emphasis placed on the application of cost information to the production of manufacturing goods. Use of computer required: Prerequisite: TBC102 or CMP102, ITE221.

ITE 311 Properties of Materials - 3 hrs each. Study of the mechanical and physical properties of ferrous and nonferrous metals and nonmetallic materials. Prediction of failure mechanisms, including corrosion, fatigue, and fracture. Students will gain experience in use of laboratory testing machines. Prerequisite: INT221

ITE 315L Computer Applications in Manufacturing - 3 hrs . The course provides the Technology Education teacher with an introductory to computer numerical controls and robotics. Course covers computer interface, LED and switch modules, motor driven I/O module, motor and control component panel, control component and sensor panel, A to D and D to A modules, speech synthesizer, system program and software. Prerequisites: TBC102 or CMP102.

ITE 316L Introduction to Computer Numerical Controls - 3 hrs. Computer programming and manual programming for both NC mills and lathes. The transfer of part descriptions into a detailed process plan, tool selection and finally into NC machine code. Verification accomplished through computer graphics and laboratory work. Prerequisite: TBC102, MTH113, TBC102 or CMP102, TGC202.

ITE 317L Industrial Robotics - 3 hrs. A study of the principles, techniques, and applications of robotics and automated systems. Students will design and implement a computer control system of their own design. Prerequisites: ITE316L.

ITE 220 Binding and Finishing - 3 hrs.
ITE 327 Statistical Quality Controls - 3 hrs. Course covers fundamentals of statistical quality controls, capability analysis developments and interpretation of quality control charts for variables and attributes; and an introduction to the application of sampling and probability theory and application; use of quality standards in acceptance sampling and application of sampling distribution to quality assurance. Use of computer is required. Prerequisites: MTH113, TBC102 or CMP102.

ITE 341 Occupational Safety and Health - 3 hrs. An introductory study of the significance of maintaining quality occupational) safety and health standards in the work place; safety education and promotion; and occupational safety and health requirements.

ITE 342 Industrial Safety: Management \& Technology - 3 hrs . Principles and procedures for investigating industrial accidents; root cause analysis; preparation and maintenance of occupational safety and health reports; concept of hazardous avoidance, information systems, and controls; non-compliance and abatement. Prerequisite: INT200

ITE 361 Building Electrical Systems and Estimating. 3 hrs . Design and analysis of electrical and power systems consistent with applicable Electrical Codes. Emphasis on estimating, planning, and management of electrical and power distribution systems in building construction. Prerequisites: Junior standing.

ITE 362 Building Environmental Systems and Estimating. 3 hrs._Design and analysis of fluid distribution systems consistent with applicable codes. Emphasis on_estimating, planning, and management of installation of building systems. Prerequisites: Junior standing.

ITE 400 Quality Assurance and Materials Testing - 3 hrs . Destructive and nondestructive testing procedures and equipment for determining mechanical, physical, and other properties of ceramics, metals, woods, composite materials, and polymers. Prerequisite: ITE 221 and ITE 311.

ITE 401 Maintenance Management - 3 hrs. The organization and management of a factory or plant maintenance system involving the administration of maintenance personnel, planning and scheduling of work, maintenance of basic environment systems, project control and cost control for maintenance operation.

TTE 402 Methods of Teaching Technology Education - 3 hrs . An analysis of appropriate materials and methods of teaching technology education subjects in the public schools; designing materials and methods to accommodate students with special needs; vocational student organizations; and public relations in technology education programs. Prerequisite: Admission to the teacher education program.

TTE 403 Career Information and Guidance. - 3 hrs . Course covers research and development in theories of vocational development and occupational choice; and models of career education programs.

TTE 404 Classroom/Laboratory Management and Student Leadership Development - 3 hrs. Physical aspects of buildings, laboratories, and shops. Purchase and inventory of supplies, materials, and equipment; selection, acquisition and installation of equipment; equipment agreements and maintenance; development of desirable shop layout; The basic philosophy of exploratory and specialized occupational training; Industrial safety, public relations, use of instructional aids and development of programs for special groups.

TTE 405 Functions of the Coordinator - 3 hrs. Functions of the Coordinator - 3 hrs . A study of the role and responsibilities of the High School Program Coordinator; An examination of areas essential to planning, organizing, and maintaining cooperative vocational education program; and designing the related subject curriculum.

TTE 406 Methods of Teaching Career/Technical Education-3 hrs. An analysis of appropriate materials and methods used in teaching trade and technical subjects in a career/ technical education program. Designing instruction for students with special needs.

TTE 407 Career/Technical Student Organizations - 3 hrs . Course covers the role and responsibilities of the teacher in advising the career/technical education student organization.

TTE 408 Directed Teaching - Nine Semester Hours. Twelve week period of full-time student teaching in either technical education or technology education under the supervision of a master teacher. Students meet weekly on campus in a seminar arrangement to discuss problems and successes encountered during the student teaching experience. Students are required to prepare a folio outlining their activities and experiences in the schools.

ITE 410 Industrial Management - 3 hrs. Industrial Management - 3 hrs . Principles and practices in managing a business or industrial enterprise; organization and management structure; procurement; quality and quantity control; research and development; management science; personnel management; laboremployee relations; and marketing.

ITE 412 Research and Development in Bio-related Technology_- 3 hrs . 3 hrs . An analysis of the research and development activities on the practical applications of mechanical devices, products, substances, or organisms to improve health or contribute to the harmony between humans and their in their environment in the seven major areas of bio-related technology.
TTE 400 Contemporary Technology - 3 hrs. Contemporary Technology - 3 hrs . Recent developments in technology and their impacts on the individual, society, and environment.

ITE 414 Planning and Organizing Technology Education Programs - 3 hrs . A study of the equipment, materials, tools, and curriculum found in a typical Technology Education program at the middle school and high school levels.

ITE 417/418 Electronic Publishing I, II - 3 hrs Each. Photocomposition - Two Semester Hours each. Fundamental of computerized typesetting embracing systems commands for setting simple exercises, straight matter, tabular matter, ruling, run-arounds, and the more intricate types of composition. The mechanisms of the system is thoroughly analyzed.

ITE 419 Quality Controls in the Printing Industry. Three-semester hours. An analysis of industrial standards and methods of quality controls in printing industry.

ITE 420 Industrial Hygiene - 3 hrs. Course covers federal, state, and professional standards applicable to health and environmental controls, and personal protection equipment in factories and plants.

ITE 421 Technology Research and Development in a Global Society - 3 hrs . An investigation and analysis of current research and development activities in Industrial Technology. Students are expected to select and carry out a research project in their area of specialization. Prerequisites: Completion of 96semester hours in Industrial Technology.

ITE 422 Industrial Hazardous Materials Management - 3 hrs. Specific OSH, NRC, ANSI and other standards as applied to the usage, storage, transportation, and disposition of industrial hazardous materials. Prerequisites: senior standing

ITE 425/426 Industrial Safety Standards I, II - 3 hrs each. Specific federal and state OSH standard as applied building and facilities, materials handling and storage, machine and machine guarding, welding, electrical hazards, construction, and transportation in factories and plants. Prerequisites: senior standing.

ITE 430 Design and Manufacturing Problems - 3 hrs. A study of mechanical design procedures and problems of manufacturing recent developments, including critical path scheduling and machine relations are covered. Use of the computer is required. Prerequisite: ITE317.

ITE 431 Productivity Improvements in Industry - 3 hrs . An analysis of contemporary systems and theories for productivity improvements and quality management in industry. Prerequisite: Completion of 96semester hours in Industrial Technology.

ITE 433

ITE 434 Production and Inventory Controls - 3 hrs. Principles and techniques of minimizing cost of ordering, receiving, storing, issuing, scheduling, routing, dispatching, expediting, and controlling materials, parts, subassemblies, and final assembles of a manufacturing system.

ITE 435 Construction Documents - 3 hrs. Comprehensive study of the relationship of the construction documents to the construction process. Emphasis is the use of contracts, conditions, specifications, and related documents as they apply to the needs of the superintendent/project managers.

TTE 440 Vocational Education for Special Needs Students - 3 hrs. Materials and methods suited to the teaching of students with special needs at the secondary and post secondary levels

TTE 442
History and Principles of Career/Technical Education - 3 hrs. investigation of the origin of and development of career and technical education through significant periods; applicable federal and state public laws impacting career and technical education; and foundations of career and technical education.

TTE 443 Course Development and Evaluation in Career/Technical Education-3 hrs. An analysis of methods and procedures used in analyzing occupations for teaching content; organization and sequence of instruction; development of objectives and learning outcomes. Use of the computer is required

TTE 444 Learning Resources and Technology in Career/Technical Education - 3 hrs. A study of principles and methods essential to the development and use of technology in career or technical education program.

TTE 450 Practicum - 3 hrs. (maybe repeated one time). Practical experience in a instructional position at the secondary or post-secondary level. Approval of the chairperson is required to enroll in this course.

ITE 456 Senior Project/Seminar - 3 hrs. Selection by the student of a significant problem in his/her area of concentration for group or independent investigation, write-up and reporting. Students are required to attend weekly seminar sessions

ITE 457 Construction Project Management. 3 hrs. Examination of the role of the construction project manager. Emphasis on administrative procedures, quality controls, time and cost controls, resource management, field office practices, construction processes, job site meetings, and correspondence. Prerequisites. Senior standing.

TTE 470 Testing and Assessment in Career/Technical Education - 3 hrs. Methods and procedures for developing and administering achievement and performance tests in a career/technical education program at the secondary or post-secondary level.

ITE 302 Fire Prevention and Protection for Industry - 3 hrs. An analysis of equipment, principles, standards, and systems essential to an effective fire protection and prevention program in industrial factories or plants.

Industrial Supervision - 3 hrs. An analysis of supervisors' job with respect to their roles and responsibilities for supervising the work of subordinates and employing technology systems in the production of consumer goods and services.

ITE 484 Introduction to Computer Integrated Manufacturing - 3 hrs. A laboratory based course designed to integrate the total manufacturing system. Topics include flow line production, materials handling, group technology, and flexible and computer integrated manufacturing.

ITE 406 Research and Development in Industrial Psychology - 3 hrs . Research and development activities in industrial technology with emphasis on employee recruitment and selection, wage and salaries administration, labor organizations, marketing, employee motivation, and training and development.

ITE 408
Manufacturing and Human Factors - 3 hrs. Manufacturing and Human Factors - 3 hrs. Survey of human factor engineering theory, research and applications with particular reference to quality assurance and safety. Systems framework with specific emphasis on relationships among systems components. Emphasis on operator constraints in the design of work processes, work stations, and instrumentation.

ITE 490/491 Internship I, II - One, Two, and 3 hrs each. Practical experiences in the work environment in which the student in 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 advanced of the semester of enrollment. Prerequisites: Senior standing.

TTE 499 Supervised Occupational Development. Three to Twelve Semester Hours. An assessment of the students occupational knowledge and skills through individualized activities. Additional formal course work may be required. Prerequisites: Completion of the required minimum 1-year work experience is required.

## DEPARTMENT OF COMPUTER SCIENCE

Surendar R. Pulusani<br>111Carver Complex Hollins Wing<br>(256) 851-5570

The program area of Computer Science provides a course of study designed to give students a thorough grounding in both theoretical and practical areas of computer science. Computer Science continues to be a rapidly growing and changing field with a wide variety of occupational opportunities. The 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. 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. The program area of computer science also offers individual courses and minors to students in other disciplines.

## REQUIREMENT FOR GRADUATION

Majors in Computer Science must earn a grade of ' C ' or better in all required 300 and 400 level computer science courses. Students will be required to repeat the courses when the grade of ' $C$ ' or better is not achieved.

## CURRICULUM FOR A MINOR IN COMPUTER SCIENCE

Students may complete a minor in computer science by earning 18 semester hours of credit (including six computer science elective* hours) that must include the following:

## REQUIRED

| Course Number | Course Title | Semester Hours |
| :--- | :--- | :---: |
| CMP 102 | Intro to Programming I | 3 |
| CMP 103 | Computer Mathematics | 3 |
| CMP 109 | Intro to Programming II | 3 |
| CMP 215 | Data Structures | 3 |
| * Must be chosen from Computer Science Department electives. |  |  |

## COMPUTER SCIENCE DEPARTMENT ELECTIVES

CMP 309 Computer Graphics
CMP 311 Introduction to Simulation
CMP 320 Introduction to Multimedia Authoring
CMP 329 Object Oriented Design
CMP 330 Computerization in Society
CMP 440 Programming Languages
CMP 450 Artificial Intelligence
CMP 483 Compilers
CMP 484 Internship
CMP 485 Introduction to Data Communication \& Networks
CMP 490 High Performance Computing

## B.S. DEGREE IN COMPUTER SCIENCE 128 Credit Hours <br> Freshman Year

First Semester
ORI 101 Survival Skills
${ }^{1}$ ENG 101 Composition I
MTH 125 Calculus I
${ }^{3}$ HIS $\quad$ History I
CMP 102 Intro. to Programming I
${ }^{4}$ Health Science/Phys. Ed.

Sem. Hrs. Second Semester
${ }^{2}$ ENG 102 Composition II
MTH 126 Calculus II
${ }^{3}$ HIS History II
CMP 103 Computer Mathematics 3
CMP 109 Intro. to Programming II

Sem. Hrs.
3
4
3

3
${ }^{1}$ ENG 103 may be taken by international students; ${ }^{2}$ ENG 104 may be taken by international students; ${ }^{3}$ HIS 101 and HIS 102; or HIS 201and HIS 202; ${ }^{4}$ HED 101, NHM 103, or FAS 101

## Sophomore Year

| First Semester | Sem. Hrs. | Second Semester | Sem. Hrs. |  |  |
| :--- | :---: | :---: | :--- | :---: | :---: |
| ${ }^{5}$ ENG | Literature | 3 | ${ }^{5}$ ENG Literature | 3 |  |
| PHY | 105 Physics I | 4 | PHY | 106 Physics II | 4 |
| ${ }^{6}$ CHEorBIO | 4 | ART | 101 Art Appreciation | 3 |  |
| CMP | 204 Visual Programming | 3 | CMP | 215 Data Structures | 3 |
| CMP | 208 Logical Found. of Comp | $\underline{3}$ | CMP | 220 Intro. to Switching Theory | $\underline{3}$ |
|  |  | 17 |  |  | 16 |

${ }^{5}$ ENG 201 and ENG 202; or ENG 203 and ENG 204, ${ }^{6}$ CHE 101 and CHE 101L or BIO 103 and BIO 103L

## Junior Year

First Semester
ENG 205 General Speech
MTH 237 Intro. to Linear Algebra
CMP 303 Assembly Language
CMP 305 Numerical Analysis
**Elective

Sem. Hrs. Second Semester
3 Social Science 3 Sem. Hrs.

3 ECO 200 Basic Economics 3
3 CMP 380 Computer Organization 3
3 CMP 384 Operating Systems 3
3 **Elective 3
$15 \quad * *$ Elective $\underline{3}$
${ }^{7}$ PHL 201, PSY 201, SOC 201, or GEO 213

## Senior Year

First Semester

| MTH | 453 | Probability \& Statistics |
| :--- | :--- | :--- |
| CMP | 401 | Software Engineering |
| CMP | 425 | Theory of Algorithms |
| **Elective |  |  |
| **Elective |  |  |

Sem. Hrs. Second Semester

15

3 CMP 403 Senior Problem 3
3 CMP 410 Seminar 3
3 CMP 488 Intro. to Database Systems 3
3 **Elective 3
3 **Elective
Sem. Hrs.

3 3
**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.

## COURSE DESCRIPTIONS

CMP 101 Fundamentals of Computer and Information Systems - 3hrs. This course is designed to introduce students to computers and information processing. The beginning student is exposed to the historical, current, and projected roles of information systems as they affect organizations and society. Students are introduced to computing systems' components and systems development. Also, they are introduced to the concepts of formal problems and their solutions using computer applications. No credit to computer science majors. Prerequisite: None

CMP 102 Introduction to Programming I-3hrs. This course concentrates on the process of computer problem solving. The idea of an algorithm is covered and decision making skills are taught as a means of logical problem solving. The core elements of a high-level language are also taught. The student is expected to solve routine programming problems. Prerequisite: None

CMP 103 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: CMP 102

CMP 109 Introduction to Programming II - 3 hrs. A continuation of the subject matter of CMP 102. More advanced programming concepts are covered here. Topics include control structures, arrays, procedures, files, and recursion. Several programming exercises are assigned. Prerequisite: CMP 102

CMP 204 Visual Programming - 3hrs. This course introduces fundamental concepts of visual programming languages such as Visual Basic or Visual Java. Emphasis will be placed on solving real world problems. Students are asked to design and code using these languages in an efficient manner. Prerequisite: CMP 109

CMP 208 Logical Foundations of Computing - 3hrs. This is a math-oriented course that covers Boolean algebra, digital logic and combinatorial circuits, and Karnaugh maps. Programming assignments are a part of the course. Prerequisite: CMP 103

CMP 215 Data Structures - 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 109

CMP 220 Introduction to Switching Theory - 3hrs. This course contains a review of Boolean algebra and combinatorial circuits, then covers sequential circuits. The hardware implementations of routine digital system components such as counters and shift registers are also taught. Prerequisite: CMP 208

CMP 303 Assembly Language - 3hrs. The architecture and organization of a selected machine are discussed in this class. The assembly language of this machine is taught and students will learn the basics of addressing modes, representation of data control structures, memory organization, and the assembly/relocation process. Programming assignments are made to allow the student to become proficient in the assembly language. Prerequisites: CMP 103 and CMP 109

CMP 305 Numerical Analysis - 3hrs. This course investigates the use of several fundamental algorithms to solve mathematical problems common to science and engineering applications. Methods illustrated include numerical interpolation, integration, and the solution of differential equations. Programming assignments are given to illustrate the numerical concepts. Prerequisites: MTH 126 or MTH 146 and CMP 109

CMP 309 Computer Graphics - 3hrs. This course covers the means of visually displaying data. Hardware graphics systems are discussed, as well as the data structures and software techniques used in setting up graphical displays. Prerequisites: CMP 204, CMP 215 and MTH 237

CMP 311 Introduction to Simulation - 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 320 Introduction to Multimedia Authoring - 3hrs. This course focuses on the basic concepts of computerbased 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 current authoring tool. Each student is required to complete a semester project. Prerequisite: CMP 215

CMP 329 Object Oriented Design - 3hrs. This course deals with the concepts involved in the object-oriented approach to data structures and programming. Inheritance and object-oriented applications are dealt with and design/development Prerequisite: CMP 215

CMP 330 Computerization in Society - 3hrs. This course examines computing as a social process with emphasis on ethical issues and the social impact of computerization on local and global organizations. Prerequisites: junior standing

CMP 380 Computer Organization - 3hrs. The primary components, hardware and software, of a computer system are addressed in this course. The organizations 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 also be asked to code some of the design. Prerequisite: CMP 215, CMP 384, and senior standing

CMP 403 Senior Problem - 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 are also discussed. Prerequisites: CMP 401 and 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 lecturers may be used; students may be required to do individual research. Prerequisite: Senior standing

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 440 Programming Languages - 3hrs. In this course, comparisons are made among several modern programming languages. Language syntax, use, and structure are covered. Programming assignments in these languages may be made. Prerequisite: CMP 384

CMP 450 Artificial Intelligence - 3 hrs . This course 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 may 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 Introduction to Data Communication and Networks - 3hrs. This is a course covering data communications concepts and systems, communications networks, communications 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 is 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: Cooperative Extension participants affiliated with Alabama A\&M University are listed in the Faculty section of this bulletin.
$\begin{array}{ll}\text { Note: } & \text { A comprehensive roster of Cooperative Extension participants affiliated with Auburn University can be } \\ \text { located in the Auburn University Bulletin. }\end{array}$

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[^0]:    $14{ }^{3}$ UPL 103 Community and You

[^1]:    *Major Courses

[^2]:    ${ }^{1}$ 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.
    ${ }^{3}$ Health or military science may be taken instead of physical education.

[^3]:    ${ }^{4}$ Technical elective may be chosen from senior-level ME courses with approval of advisor ${ }^{6} 400$-level, advisor approved

