College of Arts and Sciences
Undergraduate Programs

Department of Aerospace Studies
Air Force Reserve Officer Training Corps (AFROTC)


Mission
The Department of Aerospace Studies (AFROTC) courses augment students’ normal academic programs to qualify them for an officer’s commission in the United States Air Force. Students who successfully complete the AFROTC program are commissioned second lieutenants when they graduate. Non-flying officers serve four years on active duty, navigators serve six years after training, and pilots ten years after training. Visit the TSU Air Force ROTC web site.

Programs
The AFROTC curriculum has two programs. The Professional Officer Course (POC) consists of four three-hour courses, (AS 3312, 3313, 4412, and 4413). The Aerospace Studies Minor consists of the addition of two approved three-hour courses to the POC program. In addition to the AS academic courses, there is a two hour leadership laboratory (AS L-series) each week. This consists of practical military activities and leadership training conducted within the cadet corps organization.

Eligibility

Professional Officer Course (AS 3300 and 4400 series)
To be eligible for the POC, a student must:
- a. Be able to commission prior to age 35.
- b. Be a United States citizen.
- c. Be a full-time student in good standing at Troy State University main campus.
- d. Obtain a qualifying score on the Air Force Officer Qualifying Test (AFOQT).
- e. Be physically qualified in accordance with Air Force standards.
- f. Be approved by the professor of aerospace studies.

The administrative processing for admission into the POC takes place as soon as the student decides to enter (year round). There is no military obligation until the student enlists in the Obligated Reserve Section of the US Air Force Reserve, and agrees to accept a commission as a second lieutenant.

Uniforms and Supplies
Uniforms, textbooks and other items required in the AFROTC program are loaned to the student at no charge. However, students are responsible for properly cleaning and maintaining their uniforms. POC students may elect to purchase their uniforms upon commissioning.

**Air Force ROTC College Scholarship Program**

**High School Students:** Full four-year Air Force College Scholarships are awarded on the basis of a nationwide competition to qualified high school seniors. Application should be made online at www.afrotc.com before December 1st of the student’s senior year. The scholarships can be utilized at any school offering the four-year AFROTC program as long as the student meets the entrance requirements. AFROTC Detachment 17 at Troy State University is a two-year AFROTC program, so we cannot accept Air Force ROTC four-year scholarship winners.

**AFROTC Cadets:** Two-year junior and senior scholarships are available to some qualified cadets in both flying and non-flying categories. The scholarships provide tuition, fees, and book allowance. For additional information, contact the assistant professor of aerospace studies, Troy State University, Troy, Alabama 36082, at (334) 670-3383, or e-mail: afrotc17@troyst.edu.

**AFROTC Incentive Scholarships:** Based on current Air Force needs and academic major, junior and senior AFROTC cadets with a minimum term GPA of 2.00 may receive an incentive scholarship to cover the cost of tuition, books and fees (up to $3,450 per academic year). Eligible cadets must be full-time students and enlisted in the Obligated Reserve Section of the US Air Force Reserve. Cadets must also meet military retention standards and must not reach his/her 31st birthday by 31 December of the year he/she commissions.

**Distinguished AFROTC Graduates:** Each year, the professor of aerospace studies designates a limited number of graduating cadets as Distinguished AFROTC Graduates. This honor is reflected in the graduate’s official Air Force personnel records.

**Aerospace Studies Minor (18 Hours)**

- AS 3312 (3) Air Force Leadership Studies I
- AS 3313 (3) Air Force Leadership Studies II
- AS 4412 (3) National Security Affairs/Preparation for Active Duty I
- AS 4413 (3) National Security Affairs/Preparation for Active Duty II

Select two three-hour courses from upper level political science (POL) courses, or substitute upper level courses from history (HIS), geography (GEO), or social science (SOC) courses with the approval of the Department of Aerospace Studies chair.

**Aerospace Courses (AS)**

- 3312 Air Force Leadership Studies I (3)
A study of leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied.

**L312 Leadership Laboratory I (1)**
Leadership laboratory is mandatory for AFROTC cadets and it complements this course by providing cadets with advanced leadership experiences in officer-type activities thus giving students the opportunity to apply leadership and management principles of this course.

**3313 Air Force Leadership Studies II (3)**
A study of leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied.

**L313 Leadership Laboratory II (1)**
Leadership laboratory is mandatory for AFROTC cadets and it complements this course by providing cadets with advanced leadership experiences in officer-type activities thus giving students the opportunity to apply leadership and management principles of this course.

**4412 National Security Affairs/Preparation for Active Duty I (3)**
A course that examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis is given to refining communication skills.

**L412 Leadership Laboratory I (1)**
Leadership laboratory is mandatory for AFROTC cadets and it complements this course by providing cadets with advanced leadership experiences, giving students the opportunity to apply the leadership and management principles of this course.

**4413 National Security Affairs/Preparation for Active Duty II (3)**
A course that examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis is given to refining communication skills.

**L413 Leadership Laboratory II (1)**
Leadership laboratory is mandatory for AFROTC cadets and it complements this course
by providing cadets with advanced leadership experiences, giving students the opportunity to apply the leadership and management principles of this course.

Archival Studies Minor

Expected Student Outcomes

Upon completion of the political science minor, the student will:

- Understand the importance of record keeping and archives in society.
- Understand the relationship between archives and research.
- Understand the relationship between archival and records management.
- Demonstrate the ability to complete technical archival tasks from appraisal of collections through providing access.
- Exhibit a knowledge of the political, social, historical, or business text within which archives operate.

To complete the requirements for a minor in archival studies, students must take 18 hours.

Required courses:

- HIS 3360 Introduction to Archives: Theory and Issues (3)
- HIS 3362 Archival Methods and Practice (3)
- HIS 4472 Records Management (3)
- HIS 4473 Archives Practicum (3)

Electives: Choose two of the following, at least one at the 4000 level (6)

- GEO/HIS 3316 History & Geography of Alabama (3)
- GEO/SOC 4406 Urbanism (3)
- HIS 4405 History of the Old South (3)
- HIS 4406 History of the New South (3)
- HIS/POL 4441 American Constitutional Development (3)
- HIS 4470 Oral History (3)
HIS 4471 Local History (3)
MGT 4471 Organizational Behavior (3)
MGT 4474 Business & Society (3)
MIS 3340 Management Information Systems (3)
MIS 4450 Information Systems Project Management (3)
POL 3321 Introduction to Public Administration (3)
SOC 4433 The Community (3)
SOC 4435 Sociology of Complex Organizations (3)

DEPARTMENT OF BIOLOGICAL AND ENVIRONMENTAL SCIENCES

Faculty: Glenn M. Cohen, Ph.D., professor; J. William Dapper, Ph.D., professor; Stephen C. Landers, Ph.D., professor; Paul M. Stewart, Ph.D., professor; Michael Woods, Ph.D., professor; Neil Billington, Ph.D., associate professor; Jeffery Cavanaugh, D.V.M., associate professor; Nancy G. Kincaid, Ph.D., associate professor; Christi Magrath, Ph.D., associate professor; Debbie Moore, Ph.D., associate professor; Sigurdur Greipsson, Ph.D., assistant professor; Teresa Moore, M.S., assistant professor; Philip Reynolds, Ph.D., assistant professor; Alicia Whatley, Ph.D., assistant professor; Susan Baxley, M.A., instructor; Alvin R. Diamond, M.S., instructor; Janet Gaston, M.S., instructor.

The Department of Biological and Environmental Sciences prepares students for graduate studies, health professional fields, teaching positions, and careers in business and government. The Department offers programs in biology (with concentrations in general biology and medical technology), environmental science, biomedical sciences, and marine biology. The Department offers majors in biology and biology education and minors in biology and environmental science.

The biology program provides a strong core curriculum. The general biology concentration offers a broad exposure to coursework for careers in the biological and health sciences. It also provides the academic and field experience for graduate studies and career opportunities in ecology, limnology, field botany, wildlife biology, or fisheries biology. The medical technology concentration provides a strong background in the biological sciences for courses in medical technology and other health-related fields.
The biomedical sciences program prepares students for career opportunities in the biotechnological fields and for graduate studies or professional schools.

The marine biology program provides the academic and field experiences for careers in marine science, such as conducting research at universities and marine laboratories or working at state and federal environmental agencies.

The interdisciplinary environmental science program provides a broad background in natural, physical, and environmental sciences. Graduates are prepared for careers in federal and state regulatory agencies, consulting, nonprofit environmental organizations, industry, and research.

The biology major prepares students for careers at research laboratories, in industry, and with state and local governments. In addition many students with a biology major seek graduate degrees or enter professional schools in medicine, dentistry, pharmacy, or veterinary science.

The minors in biology and environmental science strengthen backgrounds in these areas and expose students to the major themes in these area.

**Pre-Health Professions Curricula** (medicine, optometry, dentistry, pharmacy, veterinary medicine, physical therapy, etc.)

Students who are interested in careers in the health professions should take BIO 2205 (Career Opportunities in Medicine and Allied Health Professions), preferably during the sophomore or junior year. The course prepares students for interviews, the application process, and reaching career goals.

Because admission to professional schools is extremely competitive, each student is assigned two advisors: a Primary Advisor and a Secondary (Health Professions) Advisor. The Primary Advisor oversees the progress in the student’s academic discipline (biology, mathematics, chemistry, etc.) and also provides guidance for fulfilling the specific degree requirements of the student’s program/major.

The Secondary Advisor works closely with students on matters affecting admission to professional schools, such as:
1. Explaining admission requirements and application procedures to professional schools.
2. Conducting informational seminars and workshops.
3. Writing letters of recommendation and assisting in preparing application forms.
4. Inviting speakers (physicians, pharmacists, dentists, etc.) to speak to students about careers in the health professions.
5. Providing counseling for students on career choices.
All students pursuing an undergraduate degree in the Biology, Environmental Science, Biomedical Science and Marine Biology Programs must complete the following course of study:

| General Studies                              | 63 semester hours |
| General Biology Concentration, Environmental Science Program, Biomedical Program or Marine Biology Program | 55 semester hours |
| Upper-level Electives                        | 8 semester hours |
| Total                                         | 126 semester hours |

All students pursuing an undergraduate degree in the Biology Program with the Medical Technology Concentration must complete the following course of study:

| General Studies                              | 63 semester hours |
| Medical Technology Concentration             | 76 semester hours |
| Total                                         | 139 semester hours |

All students pursuing an undergraduate degree in the Biology Major must complete the following course of study:

| General Studies                              | 63 semester hours |
| Biology Major                                | 43 semester hours |
| Academic minor                               | 18-20 semester hours |
| Upper-level electives                        | 0-2 semester hours |
| Total                                         | 126 semester hours |

General Studies requirements for the Biology, Environmental Science, Biomedical Sciences, and Marine Biology Programs and the Biology Major (63 semester hours)

Area I: (6 SH)

6 SH English Composition

Area II: (13 SH)

4 SH selected from:
- 2 SH Art Appreciation
- 2 SH Music Appreciation
- 2 SH Intro to Drama

3 SH Speech
3 SH Survey of Literature

3 SH selected from:
- Foreign Language
- Literature
- Philosophy
Area III: (12 SH)

BIO 1100 (3 SH) Principles of Biology
BIO L100 (1 SH) Principles of Biology Lab
CHM 1142 (3 SH) General Chemistry I
CHM L142 (1 SH) General Chemistry I Lab
MTH 1125 (4 SH) Calculus I

Area IV: (12 SH)

3 SH History
NOTE: Students MUST complete 6 SH sequence in literature (Area II) or history (Area IV).
9 SH hrs electives from:
   Anthropology
   World Geography
   General Psychology
   Developmental Psychology
   History
   Microeconomics
   Macroeconomics
   Sociology
   World Politics
   US Government

Area V: (20 SH)

3 SH Computer Applications Course
1 SH graded University Orientation course
BIO 1101 (3 SH) Organismal Biology
BIO L101 (1 SH) Organismal Biology Lab
CHM 1143 (3 SH) General Chemistry II
CHM L143 (1 SH) General Chemistry II Lab
PHY 2252 (3 SH) General Physics I or PHY 2262 Physics I with Calculus*
PHY L252 (1 SH) General Physics I Lab or PHY L262 Physics I with Calculus Lab*
PHY 2253 (3 SH) General Physics II or PHY 2263 Physics II with Calculus*
PHY L253 (1 SH) General Physics II Lab or PHY L263 Physics II with Calculus Lab*

* Physics is not required for the Medical Technology Concentration.

TOTAL GENERAL STUDIES HOURS = 63
BIOLOGY PROGRAM
Students in the Biology Program may select either the General Biology Concentration (55 hours) or the Medical Technology Concentration (76 hours).

Core (23 semester hours). Lectures and their corresponding labs must be taken together.
BIO 2229 (3 SH) General Ecology
BIO L229 (1 SH) General Ecology Lab
BIO 3320 (3 SH) Genetics
BIO L320 (1 SH) Genetics Lab
BIO 3372 (3 SH) Microbiology
BIO L372 (1 SH) Microbiology Lab
CHM 3342 (3 SH) Organic Chemistry I
CHM L342 (1 SH) Organic Chemistry I Lab
CHM 3343 (3 SH) Organic Chemistry II
CHM L343 (1 SH) Organic Chemistry II Lab
MTH 2210 (3 SH) Applied Statistics

• General Biology Concentration

Select one botany course with its corresponding lab:
BIO 3325 (3 SH) Plant Form and Function
BIO L325 (1 SH) Plant Form and Function Lab
BIO 3326 (3 SH) Plant Diversity
BIO L326 (1 SH) Plant Diversity Lab
BIO 4402 (4 SH) Spring Flora
BIO 4425 (4 SH) Fall Flora

Select one zoology course with its corresponding lab:
BIO 3307 (3 SH) Invertebrate Zoology
BIO L307 (1 SH) Invertebrate Zoology Lab
BIO 3308 (3 SH) Vertebrate Zoology
BIO L308 (1 SH) Vertebrate Zoology Lab
BIO 4405 (3 SH) Entomology
BIO L405 (1 SH) Entomology Lab
BIO 4410 (3 SH) Animal Behavior
BIO L410 (1 SH) Animal Behavior Lab
BIO 4420 (4 SH) Field Vertebrate Zoology
BIO 4432 (3 SH) Comparative Vertebrate Anatomy
BIO L432 (1 SH) Comparative Vertebrate Anatomy Lab
BIO 4445 (3 SH) Ichthyology
BIO L445 (1 SH) Ichthyology Lab
BIO 4446 (3 SH) Herpetology
BIO L446 (1 SH) Herpetology Lab
BIO 4447 (3 SH) Ornithology
Select one ecology/environmental course with its corresponding lab:
BIO 4413 (3 SH) Limnology
BIO L413 (1 SH) Limnology Lab
BIO 4416 (3 SH) Environmental Microbiology
BIO L416 (1 SH) Environmental Microbiology Lab
BIO 4421 (3 SH) Population Ecology
BIO L421 (1 SH) Population Ecology Lab
BIO 4479 (3 SH) Environmental Assessment
BIO L479 (1 SH) Environmental Assessment Lab

Select one physiology/cell/molecular course with its corresponding lab:
BIO 3347 (3 SH) Human Anatomy and Physiology I
BIO L347 (1 SH) Human Anatomy and Physiology I Lab
BIO 3348 (3 SH) Human Anatomy and Physiology II
BIO L348 (1 SH) Human Anatomy and Physiology II Lab
BIO 3382 (3 SH) Immunology
BIO L382 (1 SH) Immunology Lab
BIO 3386 (3 SH) Hematology
BIO L386 (1 SH) Hematology Lab
BIO 4414 (3 SH) Food Microbiology
BIO L414 (1 SH) Food Microbiology Lab
BIO 4430 (3 SH) Applied Genetics
BIO L430 (1 SH) Applied Genetics Lab
BIO 4433 (3 SH) Embryology
BIO L433 (1 SH) Embryology Lab
BIO 4451 (3 SH) Toxicology
BIO L451 (1 SH) Toxicology Lab
BIO 4478 (3 SH) Cell Biology
BIO L478 (1 SH) Cell Biology Lab
BIO 4480 (3 SH) Histology
BIO L480 (1 SH) Histology Lab
BIO 4482 (3 SH) Molecular Biology
BIO L482 (1 SH) Molecular Biology Lab

Select 16 additional semester hours (four courses with labs) from the four above categories (botany, zoology, ecology/environmental, and physiology/cell/molecular). Guided Independent Research (BIO 4491/4492) or Guided Independent Study (BIO 4493/4494) may be taken for up to 6 of these credits. BIO 4491 and 4493 may be mixed and taken in any sequence for up to 6 credits. However, the two course sequences of BIO 4491/4492 and BIO 4493/4494 may not be taken for more than 6 credits regardless of the
mix. The 16 hours chosen should be based on the student’s future plans (employment, graduate school, or professional school).

Upper-level general electives (8 SH)

Total 126 SH

• Medical Technology Concentration

Students must complete 29 semester hours on the Troy campus prior to applying for an internship.

Lectures and their corresponding labs must be taken together.
BIO 3347 (3 SH) Human Anatomy and Physiology I
BIO L347 (1 SH) Human Anatomy and Physiology I Lab
BIO 3348 (3 SH) Human Anatomy and Physiology II
BIO L348 (1 SH) Human Anatomy and Physiology II Lab
BIO 3382 (3 SH) Immunology
BIO L382 (1 SH) Immunology Lab
BIO 3386 (3 SH) Hematology
BIO L386 (1 SH) Hematology Lab
BIO 4471 (3 SH) Parasitology
BIO L471 (1 SH) Parasitology Lab

In addition to the above courses, including core courses, students must complete 33 semester hours of hospital internship MT 4400-4413 Medical Technology hospital internship courses.

Total 139 SH

ENVIRONMENTAL SCIENCE PROGRAM (55 Hours)

Core (23 semester hours). Lectures and their corresponding labs must be taken together.
BIO 2229 (3) General Ecology
BIO L229 (1) General Ecology Lab
BIO 3320 (3) Genetics
BIO L320 (1) Genetics Lab
BIO 3372 (3) Microbiology
BIO L372 (1) Microbiology Lab
CHM 3342 (3) Organic Chemistry I
CHM L342 (1) Organic Chemistry I Lab
CHM 3343 (3) Organic Chemistry II
CHM L343 (1) Organic Chemistry II Lab
MTH 2210 (3) Applied Statistics

Environmental Science Core (32 semester hours):
BIO 2202 (3 SH) Principles of Environmental Science
BIO L202 (1 SH) Principles of Environmental Science Lab
BIO 4428 (3 SH) Environmental Pollution & Control
BIO L428 (1 SH) Environmental Pollution & Control Lab
BIO 4413 (3 SH) Limnology
BIO L413 (1 SH) Limnology Lab
BIO 4451 (3 SH) Toxicology
BIO L451 (1 SH) Toxicology Lab
BIO 4452 (3 SH) Industrial Hygiene
BIO L452 (1 SH) Industrial Hygiene Lab
BIO 4479 (3 SH) Environmental Assessment
BIO L479 (1 SH) Environmental Assessment Lab

Select 8 semester hours of approved upper-level courses:
Elective (8 SH) BIO, CHM, or MTH
BIO 4488/4489/4490 (1-8 SH) Internship in Environmental Science

Upper-level general electives (8 SH)

Total 126 SH

BIOMEDICAL SCIENCES PROGRAM (55 Hours)

General Core (23 semester hours). Lectures and their corresponding labs must be taken together.
BIO 2229 (3 SH) General Ecology
BIO L229 (1 SH) General Ecology Lab
BIO 3320 (3 SH) Genetics
BIO L320 (1 SH) Genetics Lab
BIO 3372 (3 SH) Microbiology
BIO L372 (1 SH) Microbiology Lab
CHM 3342 (3 SH) Organic Chemistry I
CHM L342 (1 SH) Organic Chemistry I Lab
CHM 3343 (3 SH) Organic Chemistry II
CHM L343 (1 SH) Organic Chemistry II Lab
MTH 2210 (3 SH) Applied Statistics

Biomedical Sciences Core (32 semester hours).
Choose 24 to 32 semester hours from the courses listed below. With their advisor’s approval, students have the option of selecting one botany course and/or one zoology course and may substitute one or both for an equal number of credits from the courses listed below. Also, Guided Independent Research (BIO 4491/4492) or Guided Independent Study (BIO 4493/4494) may be taken for up to 6 of these credits. BIO 4491 and 4493 may be mixed and taken in any sequence for up to 6 credits. However, the two course sequences of BIO 4491/4492 and BIO 4493/4494 may not be taken for more than 6 credits regardless of the mix.
BIO 3347 (3 SH) Human Anatomy and Physiology I
BIO L347 (1 SH) Human Anatomy and Physiology I Lab
BIO 3348 (3 SH) Human Anatomy and Physiology II
BIO L348 (1 SH) Human Anatomy and Physiology II Lab
BIO 3382 (3 SH) Immunology
BIO L382 (1 SH) Immunology Lab
BIO 3386 (3 SH) Hematology
BIO L386 (1 SH) Hematology Lab
BIO 4414 (3 SH) Food Microbiology
BIO L414 (1 SH) Food Microbiology Lab
BIO 4416 (3 SH) Environmental Microbiology.
BIO L416 (1 SH) Environmental Microbiology Lab
BIO 4430 (3 SH) Applied Genetics
BIO L430 (1 SH) Applied Genetics Lab
BIO 4432 (3 SH) Comparative Vertebrate Anatomy
BIO L432 (1 SH) Comparative Vertebrate Anatomy Lab
BIO 4433 (3 SH) Embryology
BIO L433 (1 SH) Embryology Lab
BIO 4451 (3 SH) Toxicology
BIO L451 (1 SH) Toxicology Lab
BIO 4471 (3 SH) Parasitology
BIO L471 (1 SH) Parasitology Lab
BIO 4478 (3 SH) Cell Biology
BIO L478 (1 SH) Cell Biology Lab
BIO 4480 (3 SH) Histology
BIO L480 (1 SH) Histology Lab
BIO 4482 (3 SH) Molecular Biology
BIO L482 (1 SH) Molecular Biology Lab
CHM 3357 (3 SH) Biochemistry I
CHM L357 (1 SH) Biochemistry I Lab
CHM 3358 (3 SH) Biochemistry II

Upper-level general electives (8 SH)

Total 126 SH

**MARINE BIOLOGY PROGRAM (55 Hours)**
See the General Studies section for General Studies course requirements. Students must take courses at both TU and Dauphin Island Sea Lab.

*Core (23 semester hours). Lectures and the corresponding labs must be taken together.*
BIO 2229 (3 SH) General Ecology
BIO L229 (1 SH) General Ecology Lab
BIO 3320 (3 SH) Genetics
BIO L320 (1 SH) Genetics Lab
BIO 3372 (3 SH) Microbiology
BIO L372 (1 SH) Microbiology Lab
CHM 3342 (3 SH) Organic Chemistry I
CHM L342 (1 SH) Organic Chemistry I Lab
CHM 3343 (3 SH) Organic Chemistry II
CHM L343 (1 SH) Organic Chemistry II Lab
MTH 2210 (3 SH) Applied Statistics

**TU Courses:**
BIO 3307 (3 SH) Invertebrate Zoology
BIO L307 (1 SH) Invertebrate Zoology Lab
Select three additional upper-level (3000 or above) advisor-approved biology courses (12 SH). Lectures and their corresponding labs must be taken together.

**Dauphin Island Sea Lab Courses (16 semester hours).**
Select three out of four:
MB 4403 (4 SH) Marine Vertebrate Zoology
MB 4404 (4 SH) Marine Botany
MB 4410 (4 SH) Introduction to Oceanography
MB 4406, 4418, or 4423 (4 SH) Marsh Ecology, Marine Behavioral Ecology, or Marine Ecology (Select only one.)

Select Marine Biology elective(s). (4 semester hours)

DISL courses are offered during the summer term. Students are required to take the following prerequisites before attending DISL: CHM 1143, L143, BIO 1101, L101, BIO 2229, L229. Students must also comply with all DISL catalog prerequisites for individual courses.

Upper-level general electives (8 SH)

Total 126 SH

**BIOLOGY MAJOR (43 Hours)**
BIO 2229 (3 SH) General Ecology
BIO L229 (1 SH) General Ecology Lab
BIO 3320 (3 SH) Genetics
BIO L320 (1 SH) Genetics Lab
BIO 3372 (3 SH) Microbiology
BIO L372 (1 SH) Microbiology Lab
CHM 3342 (3 SH) Organic Chemistry I
CHM L342 (1 SH) Organic Chemistry I Lab
CHM 3343 (3 SH) Organic Chemistry II
CHM L343 (1 SH) Organic Chemistry II Lab
MTH 2210 (3 SH) Applied Statistics

Select one botany course with its corresponding lab:
BIO 3325 (3 SH) Plant Form and Function
BIO L325 (1 SH) Plant Form and Function Lab
BIO 3326 (3 SH) Plant Diversity
BIO L326 (1 SH) Plant Diversity Lab
BIO 4402 (4 SH) Spring Flora
BIO 4425 (4 SH) Fall Flora

Select one zoology course with its corresponding lab:
BIO 3307 (3 SH) Invertebrate Zoology
BIO L307 (1 SH) Invertebrate Zoology Lab
BIO 3308 (3 SH) Vertebrate Zoology
BIO L308 (1 SH) Vertebrate Zoology Lab
BIO 4405 (3 SH) Entomology
BIO L405 (1 SH) Entomology Lab
BIO 4410 (3 SH) Animal Behavior
BIO L410 (1 SH) Animal Behavior Lab
BIO 4420 (4 SH) Field Vertebrate Zoology
BIO 4432 (3 SH) Comparative Vertebrate Anatomy
BIO L432 (1 SH) Comparative Vertebrate Anatomy Lab
BIO 4445 (3 SH) Ichthyology
BIO L445 (1 SH) Ichthyology Lab
BIO 4446 (3 SH) Herpetology
BIO L446 (1 SH) Herpetology Lab
BIO 4447 (3 SH) Ornithology
BIO L447 (1 SH) Ornithology Lab
BIO 4448 (3 SH) Mammalogy
BIO L448 (1 SH) Mammalogy Lab
BIO 4471 (3 SH) Parasitology
BIO L471 (1 SH) Parasitology Lab

Select one ecology/environmental course with its corresponding lab:
BIO 2202 (3 SH) Principles of Environmental Science
BIO L202 (1 SH) Principles of Environmental Science Lab
BIO 4413 (3 SH) Limnology
BIO L413 (1 SH) Limnology Lab
BIO 4416 (3 SH) Environmental Microbiology
BIO L416 (1 SH) Environmental Microbiology Lab
BIO 4421 (3 SH) Population Ecology
BIO L421 (1 SH) Population Ecology Lab
BIO 4479 (3 SH) Environmental Assessment
BIO L479 (1 SH) Environmental Assessment Lab

Select one physiology/cell/molecular course with its corresponding lab:
BIO 3347 (3 SH) Human Anatomy and Physiology I
BIO L347 (1 SH) Human Anatomy and Physiology I Lab
BIO 3348 (3 SH) Human Anatomy and Physiology II
BIO L348 (1 SH) Human Anatomy and Physiology II Lab
BIO 3382 (3 SH) Immunology  
BIO L382 (1 SH) Immunology Lab  
BIO 3386 (3 SH) Hematology  
BIO L386 (1 SH) Hematology Lab  
BIO 4414 (3 SH) Food Microbiology  
BIO L414 (1 SH) Food Microbiology Lab  
BIO 4430 (3 SH) Applied Genetics  
BIO L430 (1 SH) Applied Genetics Lab  
BIO 4433 (3 SH) Embryology  
BIO L433 (1 SH) Embryology Lab  
BIO 4451 (3 SH) Toxicology  
BIO L451 (1 SH) Toxicology Lab  
BIO 4478 (3 SH) Cell Biology  
BIO L478 (1 SH) Cell Biology Lab  
BIO 4480 (3 SH) Histology  
BIO L480 (1 SH) Histology Lab  
BIO 4482 (3 SH) Molecular Biology  
BIO L482 (1 SH) Molecular Biology Lab  

Select one upper-level (3300 or above) advisor-approved biology course and its corresponding lab. (4 SH)  

An 18-20 semester hour minor  

Upper-level general electives (0-2 SH)  

Total 126 SH  

BIOLOGY EDUCATION  
Students seeking Alabama teacher certification should select “biology” as a first major and “education” as a second major. Students should consult with their advisers concerning all certification requirements.  

BIOLOGY MINOR (18-20 Semester Hours)  
Lectures and the corresponding labs must be taken together:  
BIO 1101 (3 SH) Organismal Biology  
BIO L101 (1 SH) Organismal Biology Lab  
BIO 2229 (3 SH) General Ecology  
BIO L229 (1 SH) General Ecology Lab  
BIO 3320 (3 SH) Genetics  
BIO L320 (1 SH) Genetics Lab  
BIO 3372 (3 SH) Microbiology  
BIO L372 (1 SH) Microbiology Lab  

Select 2-4 additional semester hours of approved upper-level (3300 or above) biology courses with corresponding labs.
ENVIRONMENTAL SCIENCE MINOR (18-20 Semester Hours)

Except as noted, lectures and the corresponding labs must be taken together for all courses listed below:

- BIO 2202 (3 SH) Principles of Environmental Science
- BIO L202 (1 SH) Principles of Environmental Science Lab
- BIO 4428 (3 SH) Environmental Pollution & Control
- BIO L428 (1 SH) Environmental Pollution & Control Lab

Select 12 hours from the following:
- BIO 4451 (3 SH) Toxicology
- BIO L451 (1 SH) Toxicology Lab
- BIO 4452 (3 SH) Industrial Hygiene
- BIO L452 (1 SH) Industrial Hygiene Lab
- BIO 4479 (3 SH) Environmental Assessment
- BIO L479 (1 SH) Environmental Assessment Lab
- BIO 4420 (4 SH) Field Vertebrate Zoology (combined lecture and lab)
- BIO 4425 (4 SH) Fall Flora or BIO 4402 Spring Flora (combined lecture and lab)
- BIO 4476 (1-4 SH) Special Topics (combined lecture and lab)
- BIO 4491 (1-4 SH) Guided Independent Research (combined lecture and lab)
- CHM 3350 (3 SH) Principles of Physical Chemistry
- CHM L350 (1 SH) Principles of Physical Chemistry Lab
- CHM 3357 (3 SH) Biochemistry I
- CHM L357 (1 SH) Biochemistry I Lab
- CHM 4445 (3 SH) Instrumental Analysis
- CHM L445 (1 SH) Instrumental Analysis Lab

UNDERGRADUATE COURSE DESCRIPTIONS

BIOLOGY COURSES (BIO)

BIO 1100  Principles of Biology (3)
Biological principles including chemistry of life, cell structure and function, bioenergetics, cell reproduction, heredity, and ecology. Credit for this course cannot be applied toward any curriculum in biology. Prerequisites: None. Corequisite: BIO L100.

BIO L100  Principles of Biology Lab (1-2)
Measurements, microscopy, ecology, cell structure, bioenergetics, cell reproduction, and heredity. Prerequisites: None. Corequisite: BIO 1100.

BIO 1101  Organismal Biology (3)
Biological concepts and life processes of protists, fungi, plants, and animals. *Prerequisites: BIO 1100, L100. Corequisite: BIO L101.*

**BIO L101  Organismal Biology Lab (1-2)**
Survey of organisms from selected phyla, including anatomy, phylogeny, and life histories. *Prerequisites: BIO 1100, L100. Corequisite: BIO 1101.*

**BIO 1110  Survey of the Human Body (3)**
Biological principles related to the role of humans in an ecosystem, with emphasis on the structure and function of the human body. *Credit for this course cannot be applied toward any curriculum in biology. Prerequisites: None. Corequisite: BIO 1110.*

**BIO L110  Survey of the Human Body Lab (1-2)**
Human physiology and the role that humans play in the biosphere. *Credit for this course cannot be applied toward any curriculum in biology. Prerequisites: None. Corequisite: BIO 1110.*

**BIO 2202  Principles of Environmental Science (3)**
The consequences of human activities on the environment, emphasizing current global problems, social attitudes, and potential solutions. *Prerequisites: BIO 1100, L100. Corequisite: BIO L202.*

**BIO L202  Principles of Environmental Science Lab (1-3)**
Laboratory and field-oriented experiences designed to enhance understanding of environmental concepts and issues. *Prerequisites: BIO 1100, L100. Corequisite: BIO 2202.*

**BIO 2205  Career Opportunities in Medicine and Allied Health Professions (1)**
An introduction to medicine and allied health professions, including academic requirements, job opportunities, and future trends. Professionals from different fields will discuss their specialties to provide students with realistic perspectives. *Prerequisites: None.*

**BIO 2229  General Ecology (3)**
The relationships of living organisms to one another and to the nonliving environment. Basic ecological concepts with the emphasis on bioenergetics, limiting factors, adaptation to a changing environment, the niche, ecological pyramids, and succession. *Prerequisites: BIO 1101, L101 and CHM 1143, L143. Corequisite: BIO L229.*

**BIO L229  General Ecology Lab (1-3)**
Introduction to the terminology, procedures and equipment for sampling biotic and abiotic components of ecosystems, the functional and dynamic
features of ecosystems, and biotic interactions. Prerequisites: BIO 1101, L101 and CHM 1143, L143. Corequisite: BIO 2229.

BIO 3307 Invertebrate Zoology (3)

BIO L307 Invertebrate Zoology Lab (1-3)

BIO 3308 Vertebrate Zoology (3)

BIO L308 Vertebrate Zoology Lab (1-3)

BIO 3320 Genetics (3)
Principles of heredity, from basic Mendelian concepts through molecular genetics. Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143, MTH 1112 or equivalent and MTH 2210 or equivalent, or permission of chair. Corequisite: BIO L320.

BIO L320 Genetics Lab (1-3)
Basic laboratory techniques in genetics, including the genetics of common laboratory organisms. Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143, MTH 1112 or equivalent and MTH 2210 or equivalent, or permission of chair. Corequisite: BIO 3320.

BIO 3325 Plant Form and Function (3)
The development, structure, and function of plant tissues and organs. Primary emphasis on anatomical, morphological, and physiological features of angiosperms. Prerequisites: BIO 1101, L101. Corequisite: BIO L325.

BIO L325 Plant Form and Function Lab (1-3)
The development, structure, and function of plant tissues and organs, with the primary emphasis on structures. Prerequisites: BIO 1101, L101. Corequisite: BIO 3325.

BIO 3326 Plant Diversity (3)
Taxonomy, structures, reproduction, and life cycles of fungi, algae, bryophytes, and vascular plants. *Prerequisites: BIO 1101, L101.
Corequisite: BIO L326.*

**BIO L326**  **Plant Diversity Lab (1-3)**
Taxonomy, structures, reproduction, and life cycles of fungi, algae, bryophytes, and vascular plants. *Prerequisites: BIO 1101, L101.
Corequisite: BIO 3326.*

**BIO 3347**  **Human Anatomy and Physiology I (3)**
Anatomical terminology, a survey of cell types and tissues, and detailed coverage of the integumentary, skeletal, muscular, and nervous systems of humans. *Prerequisites: BIO 1100, L100 or BIO 1110, L110 and CHM 1142, L142 or CHM 1115, L115. Corequisite: BIO L347.*

**BIO L347**  **Human Anatomy and Physiology I Lab (1-3)**
Anatomical terminology, a survey of cell types and tissues, and detailed coverage of the integumentary, skeletal, muscular, and nervous systems of humans. *Prerequisites: BIO 1100, L100 or BIO 1110, L110 and CHM 1142, L142 or CHM 1115, L115. Corequisite: BIO 3347.*

**BIO 3348**  **Human Anatomy and Physiology II (3)**
The endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems of humans. *Prerequisites: BIO 3347, L347.
Corequisite: BIO L348.*

**BIO L348**  **Human Anatomy and Physiology II Lab (1-3)**
The endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems of humans. *Prerequisites: BIO 3347, L347.
Corequisite: BIO 3348.*

**BIO 3372**  **Microbiology (3)**
Fundamentals of microbiology including historical perspectives, anatomy and growth of bacteria, microbial metabolism, diseases caused by them, and interrelationships of microorganisms with the environment. *Prerequisites: BIO 1100, L100 or 1110, L110 and CHM 1142, L142 or 1115, L115. Corequisite: BIO L372.*

**BIO L372**  **Microbiology Lab (1-3)**
Fundamentals of microscopy, sterile techniques, staining procedures, isolation techniques, identification of unknowns, and biochemical tests. *Prerequisites: BIO 1100, L100 or 1110, L110 and CHM 1142, L142 or 1115, L115. Corequisite: BIO 3372.*

**BIO 3382**  **Immunology (3)**

**BIO L382  Immunology Lab (1-3)**

**BIO 3386  Hematology (3)**
The study of blood cells and blood forming organs under normal and diseased states. Prerequisites: BIO 3320, L320, 3372, L372, CHM 3342, L342. Corequisite: BIO L386.

**BIO L386  Hematology Lab (1-3)**

**BIO 4402  Spring Flora (4-7)**
Survey of vascular plants from different habitats in southeast Alabama. Principles of plant taxonomy, including history and systems of classification and nomenclature, the use of dichotomous keys, and general herbarium techniques. Emphasis is placed on plant identification and habitat types. Prerequisites: BIO 1101, L101, 2229, L229.

**BIO 4405  Entomology (3)**
Orders of insects with the emphasis on morphology, taxonomy, and life cycles. Prerequisites: BIO 1101, L101. Corequisite: BIO L405.

**BIO L405  Entomology Lab (1-3)**

**BIO 4410  Animal Behavior (3)**
Classical and current concepts of animal behavior including individual and social behavioral patterns. Prerequisites: BIO 3320, L320. Corequisite: BIO L410.

**BIO L410  Animal Behavior Lab (1-3)**
Experimental and observational techniques in behavior. Prerequisites: BIO 3320, L320. Corequisite: BIO 4410.

**BIO 4413  Limnology (3)**
The physical, chemical, geological, and biological aspects of freshwater ecosystems as influenced by activities in surrounding watersheds.

Prerequisites: BIO 2229, L229, CHM 1143, L143. Corequisite: BIO L413.

BIO L413  Limnology Lab (1-3)
Field and laboratory exercises in lake and stream science, including instrumentation, measurement, sampling, and analysis. Prerequisites: BIO 2229, L229, CHM 1143, L143. Corequisite: BIO 4413.

BIO 4414  Food Microbiology (3)

BIO L414  Food Microbiology Lab (1-3)
Advanced microbiological laboratory techniques including enumeration and analysis of bacteria in food, water, and dairy products. Prerequisites: BIO 3372, L372, CHM 3342, L342. Corequisite: BIO 4414.

BIO 4416  Environmental Microbiology (3)
The taxonomy, diversity, and ecology of microbial populations in ecosystems, with the emphasis on the roles that they play in biogeochemical cycles, their contributions to metabolic diversity, their interactions with animals and plants, their niches and bioremediation. Prerequisites: BIO 3372, L372, CHM 3342, L342. Corequisite: BIO L416.

BIO L416  Environmental Microbiology Lab (1-3)
Environmental microbiological laboratory techniques including isolation, identification, and enumeration of microorganisms from aquatic and terrestrial environments. Prerequisites: BIO 3372, L372, CHM 3342, L342. Corequisite: BIO 4416.

BIO 4420  Field Vertebrate Zoology (4-7)
The basics of vertebrate identification, with emphasis on phylogeny, anatomy, morphology, life histories, habitats, distributions, and conservation. Prerequisites: BIO 1101, L101, CHM 1143, L143.

BIO 4421  Population Ecology (3)
Animal and plant populations, food supply, competition, disease, fecundity, distribution, and other environmental factors. Management of endangered species and protected ecosystems are included. Prerequisites: BIO 2229, L229, 3320, L320, CHM 1143, L143, and MTH 2210. Corequisite: BIO L421.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Description</th>
<th>Prerequisites</th>
<th>Corequisites</th>
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</thead>
<tbody>
<tr>
<td>BIO 4425</td>
<td>Fall Flora (4-7)</td>
<td>Survey of vascular plants from different habitats in southeast Alabama. Principles of plant taxonomy, including history and systems of classification and nomenclature, the use of dichotomous keys, and general herbarium techniques. Emphasis is placed on plant identification and habitat types.</td>
<td>Prerequisites: BIO 1101, L101, 2229, L229.</td>
<td></td>
</tr>
<tr>
<td>BIO 4428</td>
<td>Environmental Pollution &amp; Control (3)</td>
<td>Sources, effects, and methods of control for air, water, land, and noise pollution.</td>
<td>Prerequisites: BIO 2202, L202, 2229, L229, CHM 1143, L143. Corequisite: BIO L428.</td>
<td></td>
</tr>
<tr>
<td>BIO L428</td>
<td>Environmental Pollution &amp; Control Lab (1-3)</td>
<td>Field and laboratory techniques for air, water, land, and noise pollution.</td>
<td>Prerequisites: BIO 2202, L202, 2229, L229, CHM 1143, L143. Corequisite: BIO 4428.</td>
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</tr>
<tr>
<td>BIO 4430</td>
<td>Applied Genetics (3)</td>
<td>Advanced studies in genetics with emphasis on cytogenetics and molecular genetics.</td>
<td>Prerequisites: BIO 3320, L320, 3372, L372, CHM 3343, L343. Corequisite: BIO L430.</td>
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<tr>
<td>BIO L430</td>
<td>Applied Genetics Lab (1-3)</td>
<td>An introduction to procedures and equipment used in the study of cytogenetics and molecular genetics.</td>
<td>Prerequisites: BIO 3320, L320, 3372, L372, CHM 3343, L343. Corequisite: BIO 4430.</td>
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<tr>
<td>BIO 4432</td>
<td>Comparative Vertebrate Anatomy (3)</td>
<td>Detailed study of vertebrate organ-systems with emphasis on structural and functional morphology and evolutionary relationships.</td>
<td>Prerequisites: Any 3000-level BIO lecture and lab. Corequisite: BIO L432.</td>
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</tr>
<tr>
<td>BIO L432</td>
<td>Comparative Vertebrate Anatomy Lab (1-3)</td>
<td>Detailed study of the shark, mudpuppy, and cat with emphasis on structural and functional morphology.</td>
<td>Prerequisites: Any 3000-level BIO lecture and lab. Corequisite: BIO 4432.</td>
<td></td>
</tr>
<tr>
<td>BIO 4433</td>
<td>Embryology (3)</td>
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</tbody>
</table>
Embryonic development of vertebrates. This course links cellular and molecular mechanisms to morphogenesis. **Prerequisites:** BIO 3320, L320, 3372, L372, CHM 3343, L343. **Corequisite:** BIO L433.

**BIO L433**  
Embyrology Lab (1-3)  
Embryonic development of vertebrates as illustrated by the frog, chick, and pig. Lab includes experimental investigations of developing systems. **Prerequisites:** BIO 3320, L320, 3372, L372, CHM 3343, L343. **Corequisite:** BIO 4433.

**BIO 4445**  
Ichthyology (3)  
Morphology, anatomy, physiology, taxonomy, life histories, distribution, and adaptations of fishes. **Prerequisites:** BIO 1101, L101, 2229, L229. **Corequisite:** BIO L445.

**BIO L445**  
Ichthyology Lab (1-3)  
Structural features, identification, and classification of freshwater and marine fishes. **Prerequisites:** BIO 1101, L101, 2229, L229. **Corequisite:** BIO 4445.

**BIO 4446**  
Herpetology (3)  
Morphology, anatomy, physiology, taxonomy, life histories, distribution, and adaptations of amphibians and reptiles. **Prerequisites:** BIO 1101, L101, 2229, L229. **Corequisite:** BIO L446.

**BIO L446**  
Herpetology Lab (1-3)  
Structural features, identification, and classification of amphibians and reptiles. **Prerequisites:** BIO 1101, L101, 2229, L229. **Corequisite:** BIO 4446.

**BIO 4447**  
Ornithology (3)  
Morphology, anatomy, physiology, taxonomy, life histories, distribution, and adaptations of birds. **Prerequisites:** BIO 1101, L101, 2229, L229. **Corequisite:** BIO L447.

**BIO L447**  
Ornithology Lab (1-3)  
Structural features, identification, and classification of birds. **Prerequisites:** BIO 1101, L101, 2229, L229. **Corequisite:** BIO 4447.

**BIO 4448**  
Mammalogy (3)  
Morphology, anatomy, physiology, taxonomy, life histories, distribution, and adaptations of mammals. **Prerequisites:** BIO 1101, L101, 2229, L229. **Corequisite:** BIO L448.

**BIO L448**  
Mammalogy Lab (1-3)
Structural features, identification, and classification of mammals.  
*Prerequisites: BIO 1101, L101, 2229, L229. Corequisite: BIO 4448.*

**BIO 4451**  
**Toxicology (3)**  
Principles related to the adverse effects of chemicals on living organisms.  
*Prerequisites: CHM 3342, L342. Corequisite: BIO L451.*

**BIO L451**  
**Toxicology Lab (1-3)**  
Assessment of the toxicity of chemical agents following standard protocols.  
*Prerequisites: CHM 3342, L342. Corequisite: BIO 4451.*

**BIO 4452**  
**Industrial Hygiene (3)**  
Identification and correction of chemical, biological, and physical hazards in and around the workplace.  
*Prerequisites: CHM 3343, L343. Corequisite: BIO L452.*

**BIO L452**  
**Industrial Hygiene Lab (1-3)**  
Methods and procedures for sampling, analyzing, and evaluating chemical, biological, and physical agents in the workplace.  
*Prerequisites: CHM 3343, L343. Corequisite: BIO 4452.*

**BIO 4471**  
**Parasitology (3)**  
Taxonomy, structure, life histories, distribution, pathogenesis, and control of parasitic protozoa, helminths, and arthropods, with the emphasis on those of medical importance.  
*Prerequisites: Any 3000-level BIO lecture and lab. Corequisite: BIO L471.*

**BIO L471**  
**Parasitology Lab (1-3)**  
Laboratory study of parasitic protozoa, helminths, and arthropods, with the emphasis on those of medical importance.  
*Prerequisites: Any 3000-level BIO lecture and lab. Corequisite: BIO 4471.*

**BIO 4476**  
**Special Topics in Biology (1 to 4 credit hours per course per semester)**  
Specialized topics not generally included in course offerings.  
*Prerequisite: Permission of instructor.*

**BIO 4478**  
**Cell Biology (3)**  
Cell structure and function with the emphasis on biochemical and molecular mechanisms. Topics include cell division, movement, differentiation, and recognition.  
*Prerequisites: BIO 3320, L320, 3372, L372, CHM 3343, L343. Corequisite: BIO L478.*

**BIO L478**  
**Cell Biology Lab (1-3)**  
Experimental approaches for studying cells at the biochemical and molecular levels.  
*Prerequisites: BIO 3320, L320, 3372, L372, CHM 3343, L343. Corequisite: BIO 4478.*
BIO 4479  Environmental Assessment (3)
An examination of theory and practices required in performing stream environmental assessment as currently practiced by state and federal agencies in their attempt to preserve biological integrity. Sustainable management of natural resources and a systems approach to environmental problem solving will be emphasized. Topics covered include water quality, habitat assessment, indicator species used in ecological inventory with a concentration on macroinvertebrate and fish assemblages, and the index of biological integrity. Prerequisites: BIO 1101, L101; 2202, L202 or 2229, L229. Corequisite: BIO L479.

BIO L479  Environmental Assessment Lab (1-3)
Laboratory instruction and hands-on field training regarding stream environmental assessment as currently practiced by state agencies in their attempt to preserve biological integrity. Topics covered include measurement of water quality, habitat, and practice sampling techniques, with a concentration on fish and macroinvertebrate assemblages. In addition, students will learn the use of the index of biological integrity using their own collections of fish assemblages. Prerequisites: BIO 1101, L101; 2202, L202 or 2229, L229. Corequisite: BIO 4479.

BIO 4480  Histology (3)
Microscopic anatomy and function of cell types and tissues of mammalian organs. Prerequisites: BIO 1101, L101. Corequisite: BIO L480.

BIO L480  Histology Lab (1-3)
Microscopic anatomy of cell types and tissues of mammalian organs. Prerequisites: BIO 1101, L101. Corequisite: BIO 4480.

BIO 4481  Methods and Materials for the Secondary Teacher (4)
A survey of teaching methods and materials appropriate for teaching in the content areas for grades 6-12. Topics addressed will include teacher evaluation in the public schools, collaboration with special education teachers, and lesson planning formats. In addition, teaching methods, selections organization and use of biology/science materials for grades 6-12 will be covered in detail. A professional laboratory experience is included in this course.

BIO 4482  Molecular Biology (3)
Fundamental principles of chromosomal organization and gene expression, with emphasis on the structure and function of nucleic acids and proteins. Prerequisites: BIO 3320, L320, 3372, L3372, CHM 3343, L343. Corequisite: BIO L482.
BIO L482  Molecular Biology Lab (1-3)
Experimental approaches in molecular analyses of nucleic acids and proteins, with the emphasis placed on common techniques utilized in clinical and research settings.  
*Prerequisites:*  BIO 3320, L320, 3372, L3372, CHM 3343, L343.  
*Corequisite:*  BIO 4482.

BIO 4488  Internship in Environmental Science (1 to 3 credit hours per course per semester)
Supervised work experience in a governmental agency, business or industry, public service organization, or other working environment in which a student will apply knowledge of environmental science.  
*Prerequisites:*  Approval of the student’s academic advisor and department chair.

BIO 4489  Internship in Environmental Science

BIO 4490  Guided Independent Research (1 to 4 credit hours per course per semester)
Additional information is indexed under “Guided Independent Research and Study.”

BIO 4491  Guided Independent Study (1 to 4 credit hours per course per semester)
Additional information is indexed under “Guided Independent Research and Study.”

**MARINE BIOLOGY COURSES (MB)**
*Offered at Dauphin Island Sea Lab (DISL) only*

*Courses are offered during the summer semester only. Since course offerings change, check current DISL summer bulletin for specific course offerings and descriptions.*

MB 3301  Marine Biology (4)
A general survey of marine plants, invertebrates, and vertebrates, the communities that they form and the physical and chemical factors that influence them.  
*Prerequisites:*  BIO 1101, L101, CHM 1143, L143.  

MB 4402  Marine Invertebrate Zoology (4)
A study of the natural history, systematics, and morphology of marine invertebrates from a variety of habitats in the Gulf of Mexico.  
Participation in extended field trips is a required part of the course.  
*Prerequisites:*  BIO 1101, L101, 2229, L229, CHM 1143, L143.  

MB 4403  Marine Vertebrate Zoology (4)
Biology of marine vertebrates emphasizing systematics, behavior, physiology, and ecology of local forms. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, CHM 1143. Su**

**MB 4404  Marine Botany (4)**
A general survey of algae and vascular plants associated with the marine and estuarine environment. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su**

**MB 4406  Marsh Ecology (4)**
A study of the floral and faunal elements of various marine marsh communities. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su**

**MB 4410  Introduction to Oceanography (4)**
A general introduction to the physics, chemistry, geology, and biology of the oceans. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su**

**MB 4416  Marine Fish Diseases (4)**
Introduction to aquatic animal diseases, specifically fish and shellfish. Student will learn practical microbiological techniques for isolation and identification. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su**

**MB 4418  Marine Behavioral Ecology (4)**
Examination of how animal behavior is influenced by and interacts with its environment, and the ecological and evolutionary significance of these behaviors in a marine setting. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su**

**MB 4421  Marine Technical Methods (2)**
An introduction to the techniques, instrumentation and equipment necessary to perform marine research, emphasizing field methods. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su**

**MB 4423  Marine Ecology (4)**
Lecture and laboratory studies of bioenergetics, community structure, population dynamics, predation, competition, and speciation in marine ecosystem. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su**

**MB 4425  Coastal Ornithology (4)**
Study of coastal and pelagic birds with emphasis on ecology, taxonomy, and distribution. **Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su**
MB 4426 Coastal Zone Management (2)
A review of ecological features and management policies for coastal communities, with a description of relevant state and federal programs. Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su

MB 4430 Dolphins and Whales (2)
Lectures, audiovisual presentations, and practical exercises to guide students to further study of cetaceans. Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143, BIO 4432, L432 or MB 4403. Su

MB 4434 Marine Geology (4)
A study of the geology of the ocean basins, with special emphasis on the continental shelves, their sediments, and the sedimentary processes at work there. Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143, introductory geology and MTH 4423. Su

MB 4435 Coastal Geomorphology (2)
An introduction to coastal sediment processes and applied geomorphology with emphasis on waves, tides, and sediments. Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su

MB 4437 Coastal Climatology (2)
Study of the controlling factors and features of the world’s climates, with particular attention to coastal areas and application and interpretation of climate data. Prerequisites: BIO 1101, L101, 2229, L229, CHM 1143, L143. Su

MB 4460 Introduction to Neurobiology (4)
The study of the structure, development, physiology, and pharmacology of the nervous systems and sense organs. Prerequisites: BIO 4478, L478, PHY 2253, L253. Su

MEDICAL TECHNOLOGY COURSES (MT)
(Offered in hospital internship only)

MT 4400 Clinical Urinalysis (1)
The imparting of skills for performing and interpreting routine urinalyses as well as special urinalysis procedures.

MT 4401 Clinical Urinalysis Lab (1)
This lab section includes specimen handling, procedure manual, audiovisual, quality control, record keeping, and reporting system.
MT 4402 Clinical Microbiology (4)
This lecture course covers areas of bacteriology, mycology, and virology.

MT 4403 Clinical Microbiology Lab (2)
This lab teaches identification methods, isolation methods, and current clinical techniques for working with bacteria, molds, viral, and rickettsial organisms.

MT 4404 Clinical Parasitology (1)
Discussions concerning proper collection and handling of specimens for detection of parasites, techniques used to detect parasites and morphological features, and life cycles of important organisms.

MT 4405 Clinical Parasitology Lab (1)
Use of the laboratory procedures and techniques for isolation and identification of parasitic organisms.

MT 4406 Clinical Hematology (4)
Detailed studies of blood which include cell types, functions, number of cells, clotting mechanisms, coagulation disorders, platelet disorders, and other pertinent topics.

MT 4407 Clinical Hematology Lab (2)
Special studies and training involving cell counts, hemoglobin and hematocrit determinations, and other special hematology procedures.

MT 4408 Immunohematology (3)
This block involves blood banking, studies of the ABO blood group system, the Rh system, blood typing, antibody studies, and effects of transfusion.

MT 4409 Immunohematology Lab (1)
Blood banking studies and techniques. Clinical applications of procedures under direct supervision.

MT 4410 Clinical Serology (2)
Lectures emphasizing the principles and interpretations of immunological procedures. The study of the immune systems of the body. Antigen-antibody studies and techniques.

MT 4411 Clinical Serology Lab (1)
In this lab, the student becomes proficient in running and interpreting serology (immunology) tests.

MT 4412 Clinical Chemistry (6)
This lecture course focuses on the principles and interpretations of biochemical analytical methods, clinical calculations, and quality control.

**MT 4413 Clinical Chemistry Lab (4)**
This lab rotation provides the practical experience of running biochemical tests and interpreting their results. Some prior experience with instrumentation is required in order to understand how to use and care for clinical instruments.

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**DEPARTMENT OF CHEMISTRY**

Faculty: Christopher King, Ph.D., assistant professor, acting chair; Rodney Beaver, Ph.D., professor; Magdalena E. Wojciechowska, Ph.D., professor; Stacey Mixon, Ph.D., associate professor; Kenneth Sundberg, Ph.D., assistant professor; Jonathan Thompson, Ph.D., assistant professor

The department of chemistry offers the baccalaureate degree in chemistry and a minor in chemistry. The curriculum is designed to provide a comprehensive background in the fundamentals of chemistry and to contribute to the general education of the Troy University student. Graduates may be employed by either industry or government. Some graduates also major in education so that they are qualified to teach secondary level chemistry. Some graduates choose to go on obtain a master’s or Ph.D. in chemistry; others go on to become medical doctors, dentists, pharmacists, or veterinarians.

The mission of the department is to teach the science of chemistry within an enjoyable and enthusiastic atmosphere and to make chemistry concepts understandable though direct hands-on laboratory work.

All students pursuing an undergraduate degree in the Chemistry Program at Troy University must complete the following course of study:

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies</td>
<td>62</td>
</tr>
<tr>
<td>Chemistry Program</td>
<td>51</td>
</tr>
<tr>
<td>Upper-level Electives</td>
<td>7</td>
</tr>
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<td>Total</td>
<td>120</td>
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**General Studies Requirements**

**Area I**
6 SH English Composition

**Area II**
4 SH selected from:
- 2 SH Art Appreciation
- 2 SH Music Appreciation
-- 2 SH Intro to Drama

3 SH Speech

3 SH Survey of Literature
3 SH selected from:
-- Foreign Language
-- Literature
-- Philosophy
-- Ethics
-- Mythology
-- World Religion

Area III

4 SH Principles of Bio w/lab

CHM 1142, General Chemistry I
CHM L142, General Chemistry I Lab
MTH 1115, Pre-calculus Algebra and Trigonometry

Area IV

3 SH History
NOTE: Students MUST complete a 6 SH sequence in literature (Area II) or history (Area IV).
NOTE: 6 SH from Area II/Area IV must be global/international in scope.

9 SH hrs electives from:
-- Anthropology
-- World Geography
-- General Psychology
-- Developmental Psychology
-- History
-- Micro-Econ
-- Macro-Econ
-- Sociology
-- World Politics
-- US Government

Area V

3 SH Computer Applications Course
1 SH University Orientation Course
15 SH of General Studies Electives

CHEMISTRY PROGRAM (51 Hours)
Chemistry, Mathematics, and Physics Core Courses (46 Hours)
CHM 1143 (3) General Chemistry II
CHM L143 (1) General Chemistry II Laboratory
CHM 2242 (3) Analytical Chemistry
CHM L242 (1) Analytical Chemistry Laboratory
CHM 3342 (3) Organic Chemistry I
CHM L342 (1) Organic Chemistry I Laboratory
CHM 3343 (3) Organic Chemistry II
CHM L343 (1) Organic Chemistry II Laboratory
CHM 3381 (3) Physical Chemistry I
CHM L381 (1) Physical Chemistry I Laboratory
CHM 3382 (3) Physical Chemistry II
CHM 4444 (3) Advanced Inorganic Chemistry
CHM 4445 (3) Instrumental Analysis
CHM L445 (1) Instrumental Analysis Laboratory
MTH 1125 (4) Calculus I
MTH 1126 (4) Calculus II

Select one series:
PHY 2252 (3) General Physics I
PHY L252 (1) General Physics I Laboratory,
PHY 2253 (3) General Physics II
PHY L253 (1) General Physics II Laboratory

or
PHY 2262 (3) Physics with Calculus I
PHY L262 (1) Physics with Calculus I Laboratory,
PHY 2263 (3) Physics with Calculus II
PHY L263 (1) Physics with Calculus II Laboratory

Chemistry Electives (select 5 hours)
CHM 3357 (3) Biochemistry I and CHM L357 (1) Biochemistry Laboratory
CHM 3358 (3) Biochemistry II
CHM L382 (1) Physical Chemistry II Laboratory
CHM 4400 (3) Special Topics
CHM 4403 (3) Advanced Organic Chemistry (offered only at Dothan)
CHM L444 (1) Advanced Inorganic Chemistry Laboratory
CHM 4491/2 (1 - 3) Guided Independent Research
CHM 4493/4 (1 - 3) Guided Independent Study
CHM 4499 (1) Senior Research Seminar

All students pursing an undergraduate degree in the chemistry major at Troy University must complete the following course of study:

<table>
<thead>
<tr>
<th>Component</th>
<th>Hours</th>
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<td>General Studies</td>
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<td>Chemistry Major</td>
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<td>Upper-level electives</td>
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<td>Total</td>
<td>120</td>
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General Studies Requirements
Area I
6 SH English Composition

Area II
4 SH selected from:
   -- 2 SH Art Appreciation
   -- 2 SH Music Appreciation
   -- 2 SH Intro to Drama
3 SH Speech
3 SH Survey of Literature
3 SH selected from:
   -- Foreign Language
   -- Literature
   -- Philosophy
   -- Ethics
   -- Mythology
   -- World Religion

Area III
4 SH Principles of Bio w/lab

CHM 1142, General Chemistry I
CHM L142, General Chemistry I Lab
MTH 1115, Pre-calculus Algebra and Trigonometry

Area IV
3 SH History
NOTE: Students MUST complete a 6 SH sequence in literature (Area II) or history (Area IV).
NOTE: 6 SH from Area II/Area IV must be global/international in scope.

9 SH hrs electives from:
   -- Anthropology
   -- World Geography
   -- General Psychology
   -- Developmental Psychology
   -- History
   -- Micro-Econ
   -- Macro-Econ
   -- Sociology
   -- World Politics
   -- US Government

Area V
3 SH Computer Applications Course
1 SH University Orientation Course
3 SH Approved General Studies electives
4 SH MTH 1125 Calculus I

Select one series:
PHY 2252 (3) General Physics I
PHY L252 (1) General Physics I Laboratory,
PHY 2253 (3) General Physics II
PHY L253 (1) General Physics II Laboratory

or
PHY 2262 (3) Physics with Calculus I
PHY L262 (1) Physics with Calculus I Laboratory,
PHY 2263 (3) Physics with Calculus II
PHY L263 (1) Physics with Calculus II Laboratory

CHEMISTRY MAJOR (37 Hours)
Chemistry Core (34 Hours)
CHM 1143 (3) General Chemistry II
CHM L143 (1) General Chemistry II Laboratory
CHM 2242 (3) Analytical Chemistry
CHM L242 (1) Analytical Chemistry Laboratory
CHM 3342 (3) Organic Chemistry I
CHM L342 (1) Organic Chemistry I Laboratory
CHM 3343 (3) Organic Chemistry II
CHM L343 (1) Organic Chemistry II Laboratory
CHM 3381 (3) Physical Chemistry I
CHM L381 (1) Physical Chemistry I Laboratory
CHM 3382 (3) Physical Chemistry II
CHM 4444 (3) Advanced Inorganic Chemistry
CHM 4445 (3) Instrumental Analysis
CHM L445 (1) Instrumental Analysis Laboratory
MTH 1126 (4) Calculus II

Chemistry Electives (select 3 hours)
CHM 3357 (3) Biochemistry I and CHM L357 (1) Biochemistry Laboratory
CHM 3358 (3) Biochemistry II
CHM L382 (1) Physical Chemistry II Laboratory
CHM 4400 (3) Special Topics
CHM 4403 (3) Advanced Organic Chemistry (offered only at Dothan)
CHM L444 (1) Advanced Inorganic Chemistry Laboratory
CHM 4491/2 (1 - 3) Guided Independent Research
CHM 4493/4 (1 - 3) Guided Independent Study
CHM 4499 (1) Senior Research Seminar

CHEMISTRY EDUCATION MAJOR
Students seeking Alabama teacher certification should select “chemistry” as a first major and “education” as a second major. Students should consult with their advisers concerning all certification requirements. To be considered highly qualified, education majors should select CHM 3357, Biochemistry I, as a chemistry elective.

**CHEMISTRY MINOR (20 hours)**
CHM 1142 (3) General Chemistry I  
CHM L142 (1) General Chemistry I Laboratory  
CHM 1143 (3) General Chemistry II  
CHM L143 (1) General Chemistry II Laboratory  
CHM 3342 (3) Organic Chemistry I  
CHM L342 (1) Organic Chemistry I Laboratory  
CHM 3343 (3) Organic Chemistry II  
CHM L343 (1) Organic Chemistry II Laboratory  
Select 4 additional hours of advanced chemistry courses, such as  
CHM 2242/L242 Analytical Chemistry and lab (offered even years)  
CHM 3357/L357 Biochemistry I and lab (offered every year)

*Note:* The minor requires 20 hours in addition to the hours required for a major. For example, the biology major requires Organic Chemistry II and lab, so a student majoring in biology would need to select 8, not 4, additional hours of advanced chemistry courses.

### Chemistry Courses (CHM)

Unless otherwise noted, all courses are offered only on the Troy and Dothan campuses. (GS) designates a course meeting a general studies requirement

**CHM 1115 Survey of Chemistry (3 - 3)**  
The course will provide an overview of some of the basic concepts and principles of chemistry. Starting with the structure of the atom the course will proceed on to basic chemical reactions, the formation of ions, states of matter, chemical equilibrium, chemical bonding, and will incorporate examples from the biological sciences. Only offered at Montgomery. *Corequisite:* CHM L115

**CHM L1115 Survey of Chemistry Lab (1 - 2)**  
The laboratory sessions will provide an overview of some of the basic concepts and techniques of general chemistry experiments. The students will conduct experiments which illustrate the concepts and principles learned in the Survey of Chemistry course lectures. Only offered at Montgomery. *Corequisite:* CHM 1115

**CHM 1142 (GS) General Chemistry I (3 - 3)**  
*F, Sp, Su*  
Emphasis is placed on the periodic table and stoichiometry, including chemical properties, physical states, and structure. *Prerequisite:* Pass MTH 1112 with at least a C (or a score of 0, 1, or 5 on the math placement exam). Offered at Troy, Dothan, and Montgomery. *Corequisite:* CHM L142
CHM L142 (GS) General Chemistry I Laboratory (1 - 3)  F, Sp, Su
Experiments dealing with the periodic table, atomic structure, the gas laws, and stoichiometry. Offered at Troy, Dothan, and Montgomery.  Corequisite: CHM 1142.

CHM 1143 General Chemistry II (3 - 3)  F, Sp, Su
Acid-base theory, solutions, chemical equilibria, thermodynamics, kinetics, and electrochemistry. Prerequisites: CHM 1142 and L142. Corequisite: CHM L143.

CHM L143 General Chemistry II Laboratory (1 - 3)  F, Sp, Su

CHM 2242 Analytical Chemistry (3 - 3)  F, even years

CHM L242 Analytical Chemistry Laboratory (1 - 3)  F, even years
The practice of modern quantitative wet-chemical techniques in analytical chemistry. Corequisite: CHM 2242.

CHM 3342 Organic Chemistry I (3 - 3)  F, Sp, Su
An introduction to the chemistry of carbon compounds which develops the theoretical principles underlying organic materials. Prerequisites: CHM 1143 and L143. Corequisite: CHM L342.

CHM L342 Organic Chemistry I Laboratory (1 - 3)  F, Sp, Su
Experimental techniques and skills for preparing, manipulating, and reacting organic molecules. Corequisite: CHM 3342.

CHM 3343 Organic Chemistry II (3 - 3)  F, Sp, Su
A continued of CHM 3342 with emphasis on modern organic synthesis. Prerequisites: CHM 3342 and L342. Corequisite: CHM L343.

CHM L343 Organic Chemistry II Laboratory (1 - 3)  F, Sp, Su
Experimental techniques and skills for preparing, manipulating, and reacting organic molecules. Corequisite: CHM 3343.

CHM 3350 Principles of Physical Chemistry (3 - 3)  F, odd years, on demand
An introduction to the principles of chemical thermodynamics, reaction kinetics and chemical equilibriuim. Prerequisites: CHM 3343; PHY 2253 and PHY L253, or PHY 2263 and PHY L263. Corequisite: CHM L350.

CHM L350 Principles of Physical Chemistry Laboratory (1 - 3)  F, odd years, on demand
Practical applications of thermochemistry, colligative properties, and reaction kinetics. *Corequisite:* CHM 3350.

**CHM 3357 Biochemistry I** (3 - 3) *F*
Physical and chemical properties of proteins, nucleic acids, fatty acids, and carbohydrates with emphasis on the relationship between chemical structure and biological function. *Prerequisite:* CHM 3343. *Corequisite:* CHM L357.

**CHM L357 Biochemistry Laboratory** (1 - 3) *F*
Laboratory experiments emphasizing the biochemical techniques used in isolation and characterization of macromolecules. *Corequisite:* CHM 3357.

**CHM 3358 Biochemistry II** (3 - 3) *Sp, even years*
Catabolism and anabolism of carbohydrates, fatty acids, and amino acids with emphasis on regulation and the major metabolic pathways, including glycolysis, citric acid cycle, electron transport, gluconeogenesis, and pentose phosphate. *Prerequisite:* CHM 3357.

**CHM 3381 Physical Chemistry I** (3 - 3) *F, odd years*
Theory and applications of thermodynamics, reaction kinetics, and transport properties with an emphasis on the description of ideal/non-ideal gases and solutions. *Prerequisite:* CHM 3343; PHY 2253 and L253 or PHY 2263 and L263; MTH 1126. *Corequisite:* CHM L452.

**CHM L381 Physical Chemistry I Laboratory** (1 - 3) *F, odd years*
Introduction to methods and techniques used in the physical chemistry laboratory, including experiments in calorimetry, phase equilibria, reaction kinetics, and transport properties. *Corequisite:* CHM 3381.

**CHM 3382 Physical Chemistry II** (3 - 3) *Sp, even years*
A continuation of CHM 3381 with an introduction to surface phenomena, quantum chemistry, and spectroscopy with an emphasis on properties of surfaces, atomic and molecular structure, molecular orbital theory, and photochemistry. *Prerequisite:* CHM 3381.

**CHM L382 Physical Chemistry II Laboratory** (1 - 3) *Sp, even years*
A continuation of CHM L381 with an introduction to methods and techniques in computational chemistry and spectroscopy. *Co- or pre-requisite:* CHM 3382.

**CHM 4400 Special Topics in Chemistry** (3 - 3)
A study of topics of special interest, such as advanced physical chemistry, advanced analytical chemistry, advanced organic, group theory, surface chemistry, and colloid chemistry. *Prerequisites:* CHM 2242 and CHM 3343.

**CHM 4403 Advanced Organic Chemistry** (3 - 3)
A more in-depth study of many of the topics studied in Organic Chemistry I and II. Topics include reaction mechanisms, synthetic methods, structure determination using
spectroscopic techniques, and stereochemistry. Offered only at Dothan. **Prerequisites:** CHM 3343 and L343.

**CHM 4444 Advanced Inorganic Chemistry (3 - 3) Sp, odd years**
Spectroscopy of inorganic molecules, detailed molecular orbital applications, descriptive chemistry of the transition elements, including organometallic and bioinorganic compounds. **Prerequisites:** CHM 2242 and 3381.

**CHM L444 Advanced Inorganic Laboratory (1 - 3) Sp, odd years**
Preparation and characterization of inorganic compounds. Experience will be provided in techniques such as using a tube furnace and handling air-sensitive compounds with a glove gab and Schlenk line. **Co- or pre-requisite:** CHM 4444.

**CHM 4445 Instrumental Analysis (3 - 3) Sp, even academic years**
The operating principles of modern analytical instrumentation for determining composition and concentration. **Prerequisites:** CHM 2242, CHM 3343; PHY 2253 and L253 or PHY 2263 and L263. **Corequisite:** CHM L445.

**CHM L445 Instrumental Analysis Laboratory (1 - 3) Sp, even academic years**
The practical application of select modern analytical instruments to qualitative and quantitative examination of matter. Considerable attention is given to the instrument and elementary electronics involved in each. **Corequisite:** CHM 4445.

**CHM 4481 Methods and Materials for the Secondary Teacher (4)**

**CHM 4491/2 Guided Independent Research (1 - 3 credit hours per course per semester).**
Additional information is listed under “Independent Research and Study” in the section on Academic Regulations.

**CHM 4493/4 Guided Independent Study (1 - 3 credit hours per course per semester).**
Additional information is listed under “Independent Research and Study” in the section on Academic Regulations.

**CHM 4499 Senior Seminar (1 - 3) F**
Principles of preparing and presenting an oral presentation on a selected chemical topic in the current literature.

**Department of Classical and Modern Languages**

**Faculty**
- Peter N. Howard, Ph.D., chair, professor; James L. Sherry, Ph.D., coordinator of modern languages, associate professor; Kenneth R. LaBrant II, Ph.D., associate professor; Ray Mayfield, Ph.D., lecturer
Mission

The study of foreign languages, literatures and cultures provides students with the knowledge and skills to understand better their own language and culture and prepares them to function intelligently and sensitively within the context of a multicultural society. The study of foreign languages is especially relevant for those students preparing for graduate school in any of the traditional arts and sciences disciplines and for those students entering the areas of international commerce and trade. Language study is also a vital complement to the undergraduate endeavors of students planning careers in such professional domains as art, music, journalism, and criminal justice.

The Department of Classical and Modern Languages offers a full range of undergraduate courses in French and Spanish and a four-course elementary and intermediate sequence in German. Students pursuing non-teaching degrees may complete an 18-hour minor in either French or Spanish. The department also offers a full range of courses in Latin and classical civilization, as well as introductory courses in ancient Greek. Students pursuing non-teaching degrees may complete an 18-hour minor in Latin or classics. Contract majors are available both in modern languages and in classics.

In addition to its on-campus offerings, the department has an established six-credit-hour course in French culture on location (FRN 3310-3311) and a six-credit-hour course in Hispanic culture on location (SPN 3350-3357).

Classical and Modern Language Minors - French, Latin or Spanish

Note: Select 18 hours of approved courses from one of the above languages.

Classics Minor (18 Hours)
CLA 2260 (3) Classical Mythology
CLA 3311 (3) Civilization of Greece
CLA 3312 (3) Civilization of Rome

Note: If CLA 2260 is taken as General Studies, an additional course must be elected below.

Elective courses (9 or 12) hours:
CLA 3330 (3) Classical Epic
CLA 3350 (3) Classical Drama
CLA 4400 (3) Special Topics in Classics
LAT (3) one Latin course
GRK (3) one Greek course

Placement in Foreign Language Courses

Students who have never studied a foreign language or who have studied a language for less than two years in high school will usually begin at the introductory level. Students who have studied a language for two or more years in high school will begin their study at the level appropriate to their ability as determined by the department.
Because of the sequential nature of courses, students are urged to begin the study of a foreign language as early as possible in their academic careers and preferably during the fall semester. Native speakers may not enroll in introductory-level courses, except in unusual cases and only with the permission of the instructor. Students who have completed a high school Advanced Placement program and have scored a “3” or higher on the Advanced Placement examination will, on petition, be granted appropriate credit.

Native speakers and non-native speakers who have acquired proficiency in a modern language through traditional or non-traditional study, e.g., institutes, service schools, or long-term residency abroad, may earn six semester hours credit through the CLEP program. Students interested in validating or seeking credit by examination should refer to that section of the Bulletin.

**Classics Courses (CLA)**

**2260 Classical Mythology (3-3)**
Myths of the Greeks and Romans and their influence. F, Sp

**3311 Civilization of Greece (3-3)**
Historical and cultural achievements of the Greeks and their legacy to the modern world. 
**Note:** May be taken for credit as an elective in the Department of History. F

**3312 Civilization of Rome (3-3)**
Historical and cultural achievements of the Romans and their legacy to the modern world. 
**Note:** May be taken for credit as an elective in the Department of History. Sp

**3330 Classical Epic (3-3)**
Homer’s *Iliad* and *Odyssey*, Virgil’s *Aeneid*, and the epic tradition. F

**3350 Classical Drama (3-3)**
The ancient theatre and its influence with selected plays by Greek and Roman playwrights. Sp

**4400 Selected Topics in Classics (3-3)**
Selected topics in classical studies generally not covered in other courses. 
**Note:** May be repeated once for credit. On demand.

**4491 Guided Independent Research (1 to 3 credit hours per course per semester)**
Additional information is indexed under “Guided Independent Research and Study.”

**4492 Guided Independent Research (1 to 3 credit hours per course per semester)**
Additional information is indexed under “Guided Independent Research and Study.”

**4493 Guided Independent Study (1 to 3 credit hours per course per semester)**
Additional information is indexed under “Guided Independent Research and Study.”

**4494 Guided Independent Study (1 to 3 credit hours per course per semester)**
Additional information is indexed under “Guided Independent Research and Study.”
French Courses (FRN)

Note: For additional information, see “Placement in Foreign Language Courses.”

1101 Introductory French I (3-3)
Introduction to the French language and culture. F

1102 Introductory French II (3-3)
Introduction to the French language and culture. Sp

2201 Intermediate French I (3-3)
Reinforcement of fundamental skills, study of sophisticated language structures and reading of simple French prose and poetry. Prerequisite: FRN 1102 or equivalent. F

2202 Intermediate French II (3-3)
Reinforcement of grammatical skills, reading of simple French prose and poetry, composition and conversation. Prerequisite: FRN 2201 or equivalent. Sp

3301 Advanced French I (3-3)
Advanced-level reading, intensive work on composition, comprehensive treatment of French phonetics. Prerequisite: FRN 2202 or equivalent. F

3302 Advanced French II (3-3)
Advanced-level reading, intensive work on composition, aural comprehension, and practical conversation facility. Prerequisite: FRN 2202 or equivalent. Sp

3303 French Culture and Civilization (3-3)
A survey of the geography, history, cultural achievements, institutions and daily life of the French. Prerequisite: FRN 3301 or equivalent. F

3310 French Culture on Location I (3-TBA)
An in-depth presentation of French culture combining lectures, readings, films, audiotapes, discussions and intensive language practice on the TSU main campus with on-site visit of a Francophone environment. Prerequisite: Permission of the instructor. Su

3311 French Culture on Location II (3-TBA)
An in-depth presentation of French culture combing lectures, readings, films, audiotapes, discussions and intensive language practice on the TSU main campus with on-site visit of a Francophone environment. Prerequisite: Permission of the instructor. Su

4401 French Literature I (3-3)
French literature from the Middle Ages through the Revolution of 1789. Prerequisite: FRN 3301 or 3302. F

4402 French Literature II (3-3)
French literature of the 19th and 20th centuries. Prerequisite: FRN 3301 or 3302. Sp
4491-4492 Guided Independent Research (1-3 credit hours per course per semester)
Additional information is indexed under “Guided Independent Research and Study.”

4493-4494 Guided Independent Study (1-3 credit hours per course per semester)
Additional information is indexed under “Guided Independent Research and Study.”

**German Courses (GER)**

**Note**: For additional information, see “Placement in Foreign Language Courses.”

1121 Introductory German I (3-3)
Introduction to the German language and culture. F, on demand

1122 Introductory German II (3-3)
Introduction to the German language and culture. Sp, on demand

2221 Intermediate German I (3-3)
Emphasis on basic language skills and knowledge of German culture. Prerequisite: GER 1122 or equivalent. F, on demand

2222 Intermediate German II (3-3)
Emphasis on basic language skills and knowledge of German culture. Prerequisite: GER 2221 or equivalent. Sp, on demand

4493-4494 Guided Independent Study (1-3 credit hours per course per semester)
Additional information is indexed under “Guided Independent Research and Study.”

**Greek Courses (GRK)**

**Note**: For additional information, see “Placement in Foreign Language Courses.”

1111 Introductory Greek I (3-3)
Introduction to the ancient Greek language with emphasis on pronunciation, basic vocabulary, fundamentals of grammar, and graded readings. F, on demand.

1112 Introductory Greek II (3-3)
Continuation of GRK 1111. Prerequisite: GRK 1111. Sp, on demand

**Note**: The study of Greek may be continued under the headings of CLA4400 Special Topics in Classics and CLA 4493-4494 Guided Independent Study.

**Latin Courses (LAT)**

**Note**: For additional information, see “Placement in Foreign Language Courses.”

1131 Introductory Latin I (3-3)
Introduction to the Latin language with emphasis on pronunciation, basic vocabulary,
fundamentals of grammar, and graded readings. F

**1132 Introductory Latin II (3-3)**
Continuation of LAT 1131. Prerequisite: LAT 1131. Sp

**2231 Intermediate Latin I (3-3)**
Continuation of LAT 1131-1132. Prerequisite: LAT 1132. F

**2232 Intermediate Latin II (3-3)**
Continuation of LAT 2231, culminating in the reading of authentic passages from selected Latin authors. Prerequisite: LAT 2231. Sp

**3331 Readings in Latin Literature (3-3)**
Readings in a selected author, period, or genre. **Note:** May be repeated for credit. Prerequisite: LAT 2232. F, Sp

**Spanish Courses (SPN)**

**Note:** For additional information, see “Placement in Foreign Language Courses.”

**1141 Introductory Spanish I (3-3)**
Introduction to the Spanish language and Hispanic cultures. F

**1142 Introductory Spanish II (3-3)**
Introduction to the Spanish language and Hispanic cultures. Sp

**2241 Intermediate Spanish I (3-3)**
A review of grammar and readings in Spanish literature and civilization. Prerequisite: SPN 1142 or equivalent. F

**2242 Intermediate Spanish II (3-3)**
Reinforcement of grammatical skills, reading of simple Spanish prose and poetry, composition and conversation. Prerequisite: SPN 2241 or equivalent. Sp

**3332 Advanced Spanish I (3-3)**
Advanced-level reading, intensive work on composition, comprehensive treatment of Spanish phonetics. Prerequisite: SPN 2242 or equivalent. F

**3333 Advanced Spanish II (3-3)**
Advanced-level reading, intensive work on aural comprehension and practical conversation facility, continued development of composition skills. Prerequisite: SPN 2242 or equivalent. Sp

**3350 Hispanic Culture on Location I (3-TBA)**
An in-depth presentation of Hispanic culture combining lectures, readings, films, audiotapes, discussions and intensive language practice on the TSU main campus with on-site visit of an Hispanic environment. Prerequisite: Permission of the instructor. Su
**3357 Hispanic Culture on Location II (3-TBA)**
An in-depth presentation of Hispanic culture combining lectures, readings, films, audiotapes, discussions and intensive language practice on the TSU main campus with on-site visit of an Hispanic environment. Prerequisite: Permission of the instructor. SU

**4447 Readings in Hispanic Literature (3-3)**
In-depth study of the works of a selected major author, period or genre in the literature of Spain or Spanish America. Prerequisite: SPN 2242 or equivalent. May be repeated for credit. Sp

**4450 Hispanic Culture and Civilization (3-3)**
A survey of the geography, history, cultural achievements, institutions and daily life of Spain and other Hispanic countries. Prerequisite: SPN 2242. F

**4491-4492 Guided Independent Research (1-3 credit hours per course per semester)**
Additional information is indexed under Guided Independent Research and Study.

**4493-4494 Guided Independent Study (1-3 credit hours per course per semester)**
Additional information is indexed under Guided Independent Research and Study.

### COMPUTER SCIENCE

All students pursuing an undergraduate degree in the Computer Science Program at Troy University must complete the following course of study:

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<thead>
<tr>
<th></th>
<th>61 semester hours</th>
<th>49 semester hours</th>
<th>10 semester hours</th>
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<tr>
<td>General Studies</td>
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<tr>
<td>Upper-level electives</td>
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<tr>
<td>Total</td>
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### General Studies Requirements

**Area I (6 SH)**
6 SH English Composition

**Area II (13 SH)**
4 SH selected from:
- 2 SH Art Appreciation
- 2 SH Music Appreciation
- 2 SH Intro to Drama
- 3 SH Speech
- 3 SH Survey of Literature
3 SH selected from:
- Foreign Language
Literature  
Philosophy  
Ethics  
Mythology  
World Religion

**AREA III (12 SH)**  
4 SH Principles of Biography w/lab  
4 SH Natural Science w/lab from:  
   Chemistry  
   Physics  
   Physical Science  
   Earth Science  
4 SH MTH 1125 Calculus I

**AREA IV (12 SH)**  
3 SH History  

NOTE: Students MUST complete a 6 SH sequence in literature (Area II) or history (Area IV).  
NOTE: 6 SH from Area II/Area IV must be global/international in scope.

9 SH electives from:  
   Anthropology  
   World Geography  
   General Psychology  
   Developmental Psychology  
   History  
   Micro-Economics  
   Macro-Economics  
   Sociology  
   World Politics  
   US Government

**AREA V (18 SH)**  
3 SH CS 2244 Computer Science I  
1 SH University Orientation Course  
14 SH Approved General Studies Electives

**COMPUTER SCIENCE PROGRAM** (49 Semester Hours)  
MTH 1126 Calculus II  
MTH 2215 Applied Discrete Mathematics  
CS 2260 Computer Science II  
CS 2261 Foundations of Computer Science Concepts  
CS 3323 Data Structures  
CS 3329 Analysis of Algorithms  

46
CS 3332  Software Engineering I  3 SH
CS 3343  Formal Languages and the Theory of Computation  3 SH
CS 3357  Logical Structures of Computer Design  3 SH
CS 3365  Intro to Computer Organization and Architectures  3 SH
CS 3370  Nature of Programming Languages  3 SH
CS 4420  Introduction to Database Management Systems  3 SH
CS 4445  Data Communication and Networking  3 SH
CS 4448  Operating Systems  3 SH

Select two of the following:
MTH 2210  Applied Statistics  3 SH
CS 3325  Operations Research  3 SH
CS 3331  Fundamentals of Artificial Intelligence  3 SH
CS 3339  Fundamentals of Object-Oriented Programming  3 SH
CS 4401  Special Topics in AI  3 SH
CS 4443  Web Based Software Development  3 SH
CS 4447  Systems Analysis and Design  3 SH
CS 4451  Computer Security and Reliability  3 SH
CS 4461  Software Engineering II  3 SH
CS 4462  Special Topics in Object-Oriented Technology  3 SH

All students pursuing an undergraduate degree in the Applied Computer Science Major at Troy University must complete the following course of study:

<table>
<thead>
<tr>
<th>Course Type</th>
<th>Hours</th>
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<tbody>
<tr>
<td>General Studies</td>
<td>60</td>
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<td>Applied Computer Science Major</td>
<td>36</td>
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<td>Academic Minor</td>
<td>18</td>
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<tr>
<td>Upper-level Electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
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</table>

General Studies Requirements

Area I (6 SH)
6 SH English Composition

Area II (13 SH)
4 SH selected from:
   2 SH Art Appreciation
   2 SH Music Appreciation
   2 SH Intro to Drama
3 SH Speech
3 SH Survey of Literature
3 SH selected from:
   Foreign Language
   Literature
   Philosophy
Ethics
Mythology
World Religion

**AREA III (11 SH)**
4 SH Principles of Biography w/lab
4 SH Natural Science w/lab from:
   Chemistry
   Physics
   Physical Science
   Earth Science
3 SH MTH 2201 Business Calculus

**AREA IV (12 SH)**
3 SH History
9 SH electives from:
   Anthropology
   World Geography
   General Psychology
   Developmental Psychology
   History
   Micro-Economics
   Macro-Economics
   Sociology
   World Politics
   US Government

**AREA V (18 SH)**
3 SH CS 2244 Computer Science I
3 SH IS 2240 Computer Applications
1 SH University Orientation Course
3 SH MTH 2215 Applied Discrete Mathematics
8 SH Approved General Studies Electives

**APPLIED COMPUTER SCIENCE MAJOR** (36 Semester hours)
CS 2244  Computer Science I       3 SH
CS 2260  Computer Science II     3 SH
CS 2265  Advanced Programming I    3 SH
CS 3330  Data Structures and Algorithms  3 SH
CS 4420  Intro To Database Management Systems  3 SH
CS 4443  Web Based Software Development  3 SH
CS 4445  Data Communication and Networking  3 SH
CS 4447  Systems Analysis and Design  3 SH
CS 4448  Operating Systems  3 SH

*Select three of the following:*
Computer Science Minor (18 Semester Hours)
CS 2244 Computer Science I
CS 2260 Computer Science II

Select 12 semester hours of computer science courses with at least one course being at the 4000 level.

Computer Science Courses

CS 2244 Computer Science I (3)
An introduction to a programming language. Programming fundamentals include program structure, assignment, data types, repetition, input/output, flow of control, and functions. Program design development and testing is emphasized. Prereq. MTH1112.

CS 2248 Business Systems Programming (3)
The study and application of a business oriented programming language. Students apply a structured, multiphase program development process that features a series of steps involving understanding of problems, formal problem definition, design methodologies, program specification, breakdown, and files. Topics include file processing, data validation, table handling, calculations, input/output techniques, and report writing as practiced in the application of computers to business data processing. Prerequisite: CS 2260

CS 2260 Computer Science II
A continuation of Computer Science I to include advanced programming techniques including application of arrays and advanced input/output. Students design, implement, and test a number of moderately large programs. Prereq. CS2244, MTH1125.

CS 2261 Foundations of Computer Science Concepts (3)
A broad perspective of computer science concepts intended as preparation for more in-depth coverage in higher-level courses. Topics include machine and assembly language programming, computer system organization and operation, logic circuits, finite-state diagrams and programming language grammar, Prereq. CS2244.

CS 2265 Advanced Programming 1 (3)
Provides student the opportunity to gain experience and training in an additional high level language. The course focuses on advanced topics including: objects, structures, applets, graphics, exception handling, files, and streaming. Prerequisite: CS 2260
CS 3323 Data Structures (3)
A survey of data structures that includes lists, ordered lists, linked lists, stacks, queues and trees. Also included are measurement of program performance and how program performance is affected by alternative data structures. These concepts are presented within an object-oriented framework. Programming labs are included. Prereq. CS2260, MTH 2215 Applied Discrete Mathematics

CS 3329 Analysis of Algorithms (3)
Alternative techniques to solve computer science problems are presented. Problems include sorting, searching, and graph traversal, lists, ordered lists, linked lists, stacks, queues, and trees. These concepts are presented within an object-oriented framework. Prereq. CS3323

CS 3330 Data Structures and Algorithms (3)
A course in fundamental data structures concepts and alternative techniques for solving real-world problems in computer science. Concepts and application covered include analysis of data representation and associated algorithms, including linked lists, queues, stacks, arrays, graphs, trees, searching, sorting, string matching, and the application of recursive techniques. The course will place an emphasis on the implementation of various algorithms and data structures. Prerequisite: CS 2260 and MTH 2215 Applied Discrete Mathematics (3)

CS 3331 Fundamentals of AI (3)
Approaches to the definition of artificial intelligence and to the design and implementation of intelligent computer systems. Topics include the Turing Test, Searle’s Chinese Room, blackboard systems, logic programming, knowledge based systems, scripts and schemas, and heuristic search techniques. Prereq. CS3329 or CS3330

CS 3332 Software Engineering I (3)
Topics are presented that focus on the design and development techniques for large high quality software systems. They include project management issues, analysis and design methods, and approaches to testing. Prereq. CS3323 or CS 3330.

CS 3339 Fundamentals of Object-Oriented Programming (3)
The conceptual framework for object-oriented programming and systems. Topics include classes, data hiding, modularity, inheritance, and reusable code. They are presented through the use of some object-oriented language. Prereq. CS3323.

CS 3343 Formal Languages and the Theory of Computation (3)
Formal language theory, including the Chomsky hierarchy is presented. Emphasis is placed on regular and context free grammars, finite state automata, and translators. Prereq. CS3370.

CS 3345 Advanced Programming II (3)
Provides student the opportunity to gain experience and training in an additional high level language. Topics include interactive techniques, arrays, multiple forms, data files
and databases, grids, graphics, OLE, DLL's and custom objects. Emphasis is on finding creative solutions to application problems. Prerequisite: CS 2260

CS 3357 Logical Structures (3)
Boolean algebra and design and minimization of combinatorial and sequential circuits. This course includes laboratories that demonstrate how simple circuits are designed and what problems may be encountered in design, such as hazards and race conditions. Prereq. CS2261, MTH 2215 Applied Discrete Mathematics

CS 3365 Introduction to Computer Organization and Architecture (3)
Organization and operation of computer systems. Topics include hardware components of digital computers, micro-programming, memory management, interrupt organization, addressing modes, and instruction formats. Prereq. CS3357.

CS 3370 Nature of Programming Languages (3)
Basic principles and concepts of programming languages including what a programming language is, various paradigms that a language can follow, and how its syntactical and semantic structures can be specified. The traditional object-oriented paradigm will be presented as well as non-traditional paradigms based on symbolic logic (logic programming) and on functions in lambda calculus (functional programming). Prereq. CS3343.

CS 4401 Special Topics in AI (3)
A continuation of Fundamentals of AI. A topic of research including logic programming, fuzzy sets genetic algorithms, artificial neural networks, or pattern analysis is included. Prereq. CS3331.

CS 4420 Introduction to Database Systems (3)
The fundamental concepts and structures necessary for the design and implementation of a database management system. Students design, loads, and query a database using tools such as E-R diagrams and SQL. Also includes data normalization and file and index organization. Prereq. CS3323 or CS 3330

CS 4443 Web-Based Software Development (3)
The essentials of Internet programming. Students will design and write Web page application utilizing internet programming techniques including scripting languages and hypertext. Programs will manipulate many forms of data including hypertext, graphics, audio, and video. Students use state-of-the-art development tools and design methods to implement an enterprise web applications. Prerequisite: CS 4420

CS 4445 Data Communication and Networking (3)
An overview of local-area and wide-area systems. Issues discussed include standards, topologies, management, and security. Prereq. CS3329 or CS 3330.

CS 4447 Systems Analysis and Design (3)
Study of the analysis and of computer-based information systems. Emphasis is placed on analysis, specifications development, design, and development of information systems, including the software and databases that support the business needs of organizations. Both data-oriented and process-oriented design methods are covered. Topics include the systems analyst, the systems development life cycle, methodologies, development technology, systems planning, project management, systems analysis, systems design, systems implementation, and systems support. Prereq: CS 3323 or CS 3330.

CS 4448 Operating Systems (3)
An overview of operating system functions and components. Issues include process definition, scheduling, and memory management. Various modern operating systems are compared. Prereq. CS 4445 and CS3329 or CS 3330.

CS 4449 – Applied Networking (3)
Computer networks and the use of computer networks in industry environments. Topics covered include client-server networks, network hardware and software, distributed computing, user requirements, considerations in physical media and topology, selection of Network Operating Systems (NOS), computing platforms, network administration, applications software, internetworking components, and key issues in network management.  Prerequisite: CS 4445. CS 4448 recommended

CS 4451 – Computer Security (3)
Basic security concepts and principles applied to real-world applications. Introduces the major elements that go into a security implementation, including encryption, authentication, access control lists, execution control lists, vulnerability of operating systems, auditing, performing vulnerability analysis and risk assessment, developing a security plan and protecting data, systems and infrastructure. This course also builds on the fundamentals of reliability and safety engineering, which includes software reliability, growth models, testing and stopping-rules, safety methods and redundancy.  Prerequisite: CS 3329 or 3330.  CS 4448 recommended.

CS 4461 Software Engineering II (3)
This course is a continuation of Software Engineering I. With additional topics that include software quality insurance, testing techniques. Students will design, implement and test a large project. Prereq. CS3329 or CS 3330.

CS 4462 Special Topics Object-Oriented Programming (3)
This course is a continuation of CS3339. It presents the conceptual framework for the design of object-oriented systems. Topics that include re-factoring designs and design patterns are discussed. They are presented through the use of some object-oriented language. Prereq. CS3339.

CS 4495 Special Topics in Computer Science (3)
Topics in computer science that are not included in regular course offerings. Specific contents are announced in the course schedule for a given term. Prerequisites: senior standing or consent of instructor.
DEPARTMENT OF CRIMINAL JUSTICE AND SOCIAL SCIENCES

The courses offered in the Department of Criminal Justice major are designed to provide broad academic exposure to the field of criminal justice and the opportunity for concentrated study in areas of law enforcement, courts and the justice system, and corrections. The 36-hour major is designed to develop a general understanding of the multidisciplinary nature of criminal justice in order to prepare students for graduate study or for careers in the criminal justice field. The curriculum provides an overview of the American justice system and develops the student’s ability to critically analyze the problems associated with criminal justice. The program is directed toward developing a criminal justice generalist in the belief that graduate study or specialization in professional law enforcement, the legal field, or correctional practices should be founded upon a broadly based undergraduate education.

All students pursuing an undergraduate degree in Criminal Justice at Troy University must complete the following course of study:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies</td>
<td>60</td>
</tr>
<tr>
<td>Criminal Justice Major</td>
<td>36</td>
</tr>
<tr>
<td>Academic Minor</td>
<td>18</td>
</tr>
<tr>
<td>Upper-level electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
</tr>
</tbody>
</table>

General Studies Requirements

Area I (6 SH)

6 SH English Composition

Area II (13 SH)

4 SH selected from:
- 2 SH Art Appreciation
- 2 SH Music Appreciation
- 2 SH Intro to Drama

3 SH Speech

3 SH Survey of Literature

3 SH selected from:
- Foreign Language
- Literature
- Philosophy
- Ethics
- Mythology
World Religion

AREA III (11 SH)

4 SH Principles of Biography w/lab
4 SH Natural Science w/lab from:
   Chemistry
   Physics
   Physical Science
   Earth Science
3 SH Math, finite or higher

AREA IV (12 SH)

3 SH History

NOTE: Students MUST complete a 6 SH sequence in literature (Area II) or history (Area IV).
NOTE: 6 SH from Area II/Area IV must be global/international in scope.

9 SH electives from:
   Anthropology
   World Geography
   General Psychology
   Developmental Psychology
   History
   Micro-Economics
   Macro-Economics
   Sociology
   World Politics
   US Government

AREA V (18 SH)

3 SH Computer Application Course
1 SH University Orientation Course
14 SH Approved General Studies Electives

CRIMINAL JUSTICE MAJOR (36 Hours)
Criminal Justice majors are encouraged to take two semesters of Spanish or another foreign language as part of their General Studies requirements.

Required courses 24 SCH
CJ 1101 (3) Introduction to Criminal Justice
CJ 2221 (3) Survey of Law Enforcement
CJ 2231 (3) Survey of Corrections
CJ 2241 (3) Survey of Law and Criminal Procedure
Select 12 additional hours of advanced (2000) or upper (3000-4000) level Criminal Justice courses, as approved by faculty adviser.

CRIMINAL JUSTICE MINOR (18 Hours)
CJ 1101 (3) Introduction to Criminal Justice

Select 15 additional hours of upper level (3000-4000) criminal justice courses as approved by the faculty adviser.

Criminal Justice Courses (CJ)

1101 Introduction Criminal Justice (3-3)
Agencies and processes involved in the administration of criminal justice. This course is a prerequisite for all 3000-and 4000-level courses unless waived by student’s adviser.

2221 Survey of Law Enforcement (3-3)
A survey of policing, covering developmental history, the system of law enforcement organizations in the U.S., personnel administration, police roles and behavior, operations, and major issues such as discretion, civil liability, risk, and excessive force.

2231 Survey of Corrections (3-3)
Philosophy, theory, and practices involved in the treatment of convicted law violators, the examination, and the appraisal of the effects of correctional treatment upon post-correctional behavior.

2241 Survey of Law and Criminal Procedure (3-3)
An examination of the American legal system with emphasis on the analysis and processing of criminal offenses, including an examination of constitutional criminal procedure concerning arrest, pre-trial and trial processes.

3302 Criminal Justice Administration (3-3)
A survey of public administration as it applies to criminal justice organizations. The major dimensions of criminal justice organizations examined include organizational theory, organizational design, leadership and decision making, interpersonal and organizational communication, human resource management, legal aspects of administration, financial management, and organizational change.
3310 Psychology for Criminal Justice Officials (3-3)
Behavior of subjects and police officers in normal and unusual conditions, arrest, interrogation, detention, incarceration, protest, demonstrations, riots, public calamities, reactions of special interest groups, minorities, and specialized tests.

3325 Juvenile Justice (3-3)
To provide a basic overview of the American juvenile justice system, beginning with the development of the juvenile court, and addressing the jurisdiction, role, responsibilities, administration, and organization of the juvenile justice system. Also examined are the interfaces between police, schools, and the court, the issues of child abuse, and the operation of treatment programs.

3335 Private and Public Security Administration (3-3)
An introduction to the administration of private security, the analog to the police in the public sector. Issues in private security concerning ethics, law, and policy, as well as administration, are considered.

3345 Criminology (3-3)
An examination of crime, overall and by category, and an examination of theories of crime causation, their research support and their impact on social policy, categories of crime, etc. The criminological theories covered will be classical, biological, sociological, psychological, economic, and multidisciplinary.

3352 Constitutional Law in Criminal Justice (3-3)
Constitutional provisions which are relevant to criminal law and procedure, their construction and development through court interpretation, and their application in criminal proceedings.

3365 Victims of Crime (3-3)
This course provides an opportunity for the student to gain an understanding of the crime victim’s position and issues with the criminal justice system. Specifically, trends, applied responses to victimization, offender-victim relationships, typologies, measuring victimization, and prevention are examined.

3367 History of Criminal Justice (3-3)
Upon completion of the course the student must have demonstrated his/her knowledge of criminal justice systems from approximately 1700 BC to the present. With that knowledge and comprehension, the student should be able to analyze and apply lessons learned from that historical context to current situations in the United States Criminal Justice System.
3375 **Introduction to Social Scientific Inquiry (3-3)**
Principles of pure and applied research for the social sciences. Special emphasis is given to the types of research methods employed by social scientists including survey techniques, field research, quasi-experimental designs and analytical procedures currently used in the social sciences.  
*Prerequisite: General Studies math*

3376 **Application of Social Scientific Inquiry (3-3)**
A detailed description of what social scientists do with the information they gather. Particular attention is given to descriptive and inferential statistics, the relationship between research and policy, evaluation research, and research ethics.  
*Prerequisite: General Studies math*

4415 **Correctional Systems and Practices (3-3)**
An examination of the day to day operations and practices in modern correctional facilities in the local, state, and federal systems.

4420 **Comparative Criminal Justice (3-3)**
A comparative examination of criminal justice systems throughout the world with specific attention given to legal and political systems, organization and methods of law enforcement, jurisprudence, correctional policies, and practices. Theoretical frameworks, models, and propositions addressing crime across various societies are also considered.

4421 **Ethics in Criminal Justice (3-3)**
An introduction to concepts of ethics and an examination of contemporary ethical issues in the field of criminal justice.

4430 **Selected Topics in Criminal Justice (3-3)**
An examination of a criminal justice topic chosen for its current or special interest and importance and that is not given in-depth coverage in other courses; selection topics will vary with each course offering (although a particular topic may be offered more than once.)

4435 **Grant Writing (3-3)**
A detailed examination of how to apply to governmental and private entities for funding of various programs and projects in the field of criminal justice.

4440 **Terrorism (3-3)**
A critical examination and analysis of major issues, definitions, and controversies associated with the development of terrorism in the modern world. Historical, religious, an psychological and sociological aspects and explanations of terrorism will be covered, along with the characteristic means and methods terrorist groups employ.
4442 Criminal Investigation and Evidence (3-3)
A detailed examination of what is necessary to solve criminal cases and prove guilt beyond a reasonable doubt in court. Emphasis on leadership and management actions taken to enhance investigative efforts in law enforcement operation.

4445 Current Issues in Law Enforcement Operations and Administration (3-3)
A detailed examination of applied concepts of leadership and problem solving in law enforcement operations and administrations. Special emphasis is attached to current problems surfacing in law enforcement.

4446 Current Issues in Correctional Operations and Administration (3-3)
A detailed examination of applied concepts of leadership and problem solving in corrections and administration. Special emphasis is attached to current problems surfacing in corrections.

4447 Current Issues in Legal Systems Operation and Administration (3-3)
A study of the critical issues and concepts involved in modern court administration, including the law governing the presentation of evidence in the trial of criminal cases, analysis of the role of law and the courts in American Society.

4462 Polygraph: History and Investigative Applications (3-3)
An historical perspective of polygraph and an overview of legal issues concerning clinical polygraph examinations, criminal specific examinations, and polygraph’s limitations.

4470 Homeland Security (3-3)
An examination of the political and social complexities and dilemmas associated with state and local law enforcement and federal agencies roles in the defense of our nation subsequent to September 11, 2001.

4472 Cyber Crime (3-3)
This course will introduce the topics of computer crime and computer forensics. Students will be required to learn different aspects of computer crime and ways in which to uncover, protect, and exploit digital evidence. Students will be exposed to different types of tools, both software and hardware, and an exploration of the legal issues affected by on-line and computer-related criminal conduct. The course will examine the evolution of criminal law relative to the development of new technology.

4488-4489-4490 Internship in a Criminal Justice Agency (3-3)
Experience in a selected criminal justice agency, working in groups or individually. Supervised application and observation of concepts, principles, skills, operation and functions of knowledge acquired by the student in previous or current course work and studies. Problems will be identified with attendant solutions in the areas of police work, the correctional agencies, or the court systems as appropriate to the student’s program of study.

4491-4492 Guided Independent Research (1 to 3 credit hours per course per semester)
Additional information is indexed under “Guided Independent Research and Study.”

4493-4494 Guided Independent Study (1 to 3 credit hours per course per semester)
Additional information is indexed under “Guided Independent Research and Study.”

4499 Senior Seminar in Criminal Justice (3-3)
This is a capstone course designed to: (1) help seniors integrate the knowledge gained from their other required criminal justice courses, (2) assist them in developing analytical thinking skills through focusing on selected topics using a seminar approach, and (3) to support them in gaining a better understanding of the criminal justice profession and the role they may play in it.

Earth and Space Studies Minor

Expected Student Outcomes

Upon completion of the earth and space studies minor, the student will demonstrate:

• An understanding of and an ability to apply the scientific method in various fields of earth/space sciences (i.e. astronomy, physical geology, marine science, and meteorology.)

• The ability to carry out a variety of laboratory operations in the major fields of earth/space science.
• The ability to apply prior knowledge to the understanding and solving of problems unlike those previously encountered.
• The ability to express clearly and rigorously scientific concepts and tenets both verbally and in writing.

To complete the requirements for a minor in earth and space studies, students must take 18 hours.

Required Courses:
SCI 3335 Physical Geology (3 SH)
SCI L335 Physical Geology Lab (1 SH)
SCI 3336 Astronomy (3 SH)
SCI 3340  Marine Science     (3 SH)
SCI L340  Marine Science Lab (1 SH)
SCI 3350  Weather and Climate (3 SH)
SCI L350  Weather and Science Lab (1 SH)
SCI 4403  Conservation       (3 SH)

Science Courses (SCI)

SCI 2233  Physical Science (3)
Basic chemistry and physics for non-science majors. NOTE: Credit does not count toward a major in any science curriculum. Co-requisite: SCI L233.

SCI L233  Physical Science Laboratory (1)
Laboratory experiments in basic chemistry and physics. Co-requisite: SCI 2233.

SCI 2234  Earth and Space Science (3)
Basic astronomy and geology for non-science majors. NOTE: Credit does not count toward any major in the sciences. Co-requisite: SCI L234.

SCI L234  Earth and Space Science Laboratory (1)
Laboratory experiments in basic astronomy and geology. Co-requisite: SCI 2234.

SCI 3335  Physical Geology (3)
Constructive and destructive processes which alter the earth. Corequisite: SCI L335.

SCI L335  Physical Geology Lab (1-2)
Laboratory studies of constructive and destructive processes which alter the earth. Corequisite: SCI 3335.

SCI 3336  Principles of Astronomy (3)
Basic facts and theories related to astronomical phenomena.

SCI L336  Observational Astronomy Laboratory (1)
Star and constellation identification and observations using the telescope. Co-requisite: SCI 3336

SCI 3340  Marine Science (3)

SCI L340  Marine Science Laboratory (1-2)
Laboratory study of the physical properties and organisms of the marine environment. *Corequisite: SCI 3340.*

**SCI 3350**  
*Weather and Climate (3)*  
A study of the physical properties of weather and climate. *Corequisite: SCI L350.*

**SCI L350**  
*Weather and Climate Laboratory (1-2)*  
Laboratory study of physical properties of weather and climate.  
*Corequisite: SCI 3350.*

**SCI 4403**  
*Conservation (3)*  
The conservation of natural and human resources with emphasis on population expansion as the major element in a changing ecology.

**SCI 4481**  
*Methods and Materials for the Secondary Teacher (4)*  
A survey of teaching methods and materials appropriate for teaching in the content areas for grades 6-12. Topics addressed will include teacher evaluation in the public schools, collaboration with special education teachers, and lesson planning formats. In addition, teaching methods, selection and use of biology/science materials for grades 6-12 will be covered in detail. A professional laboratory experience is included in this course.

**ENGLISH**

Faculty (Dothan): Alan Belsches, Ph.D., Associate Dean of the College of Arts & Sciences; Elizabeth D. Van Loo, Ph.D., Chair of the Department of English and Humanities, professor; Barbara Gusick, Ph.D. associate professor; Fred Feagin, MA, instructor; William Lipscomb, MA, assistant professor; Ron Moore, Ph.D., lecturer; William Tarvin, Ph.D., assistant professor.

Faculty (Troy): Noel Harold Kaylor, Jr., Ph.D., chair, professor; James F. R. Day, Ph.D., professor; Theron Montgomery, III, Ph.D., professor; Mary A. Tighe, Ph.D., professor; Stephen Cooper, Ph.D., associate professor; William E. Hicks, M.A., associate professor; Michael C. Orlofsky, M.F.A., associate professor; James G. Davis, M.F.A., assistant professor; Ernest J. Enchelmayer, M.A., assistant professor; Albert D. Glover, M.A., assistant professor; Terry Mitchell, Ph.D., assistant professor; Richard Scott Nokes, Ph.D., assistant professor; Ben P. Robertson, Ph.D., assistant professor; Catherine Smith, Ph.D., assistant professor; William Baxter Thompson, Ph.D. assistant professor; Deborah C. Hicks, M.S., instructor.

Faculty (Montgomery): Kirk Curnutt, Ph.D., chair of Literature, Language, and Philosophy, professor; JoAnne R. Bryant, Ed.D., chair of Communications and Fine Arts, professor; Andrew Lipscomb, Ph.D., professor; Patrice Williams, Ph.D., associate professor.
Faculty in English at Troy University at all campus locations are committed to playing a vital role in the university system’s general studies program. While providing students with a solid base in core courses, the English curriculum offers its majors a focused, in-depth study of writing, rhetoric, literature, research and critical analysis. Judicious selection of courses under the guidance of faculty advisers provides additional focus to the 36 hour major through courses in pedagogy, literary theory, and specific areas of literary interest. Graduates will be prepared to continue advanced, graduate-level study. Further, the bachelor’s degree program will provide an appropriate background for work in such additional areas as law, theology, philosophy, medicine (with science and mathematics preparation), library science, communications, media and business. In addition to the major areas of concentration, all campuses offer an 18-hour minor in English. The Troy campus offers an 18-hour minor in creative writing, while the Montgomery campus offers an 18-hour emphasis in professional writing.

Placement in English Courses
Students will be placed in the appropriate writing course on the basis of test scores and/or writing samples, administered and evaluated prior to registration for the course by a committee of English department members. For more information, contact the English department at the appropriate campus.

English Courses (ENG)
The slash-numbered courses (e.g., 4400/5500) listed below are open to graduate and undergraduate students. Graduate students receive 5500 level credit; undergraduate receive 4400 level credit. Two stipulations apply: (1) Graduate students enrolled in any combined undergraduate-graduate course will be required to satisfy research and writing requirements in addition to the regular course requirements; (2) Graduate students may not enroll in a slash-numbered course which duplicates courses listed on their undergraduate transcripts.

I. Requirements for the English major
All students pursuing an undergraduate degree in English at Troy University must complete the following course of study.

<table>
<thead>
<tr>
<th>Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies</td>
<td>61 semester hours</td>
</tr>
<tr>
<td>English Major</td>
<td>36 semester hours</td>
</tr>
<tr>
<td>Academic Minor</td>
<td>18 semester hours</td>
</tr>
<tr>
<td>Upper-level Electives</td>
<td>6 semester hours</td>
</tr>
<tr>
<td>Total</td>
<td>121 Semester Hours</td>
</tr>
</tbody>
</table>

**AREA I: (6 SH)**

6 SH English Composition
AREA II: (13 SH)

4 SH selected from:
- 2 SH Art Appreciation
- 2 SH Music Appreciation
- 2 SH Intro to Drama

3 SH Speech

3 SH Survey of Literature

3 SH selected from:
- Foreign Language
- Literature
- Philosophy
- Ethics
- Mythology
- World Religion

NOTES:
Students must complete 6 SH sequence in literature (Area II) or history (Area IV).
6 SH from Area II/Area IV must be global/international in scope.

AREA III: (11 SH)

4 SH Principles of Bio w/lab

4 SH Natural Science/w lab from:
- Chemistry
- Physics
- Physical Science
- Earth Science

3 SH Math, finite or higher

AREA IV: (12 SH)

3 SH History

NOTE: Students MUST complete 6 SH sequence in literature (Area II) or history (Area IV).

9 SH hrs electives from:
- Anthropology
- World Geography
- General Psychology
- Developmental Psychology
- History
- Micro-Econ
- Macro-Econ
- Sociology
- World Politics
- US Government

AREA V: Pre-Professional, Major, and Elective Requirements (19 SH)
ENG 2211 & 2212       6
ENG 2244 & 2245       6
Computer Applications course     3
University Orientation course    1
Approved General Studies elective course    3

**English Major (36 SH)**

Required: Eng 3341 (Advanced Grammar) is required for all English majors. Students may select the other 33 SH of upper division courses, with the proviso that at least 9 of those SH must be at the 4000 level or above.

Students at the Montgomery campus may select the Professional Writing Emphasis. In addition to Eng 3341, the following 6 courses are required:
- ENG 2260 Intro to Tech and Prof Writing
- ENG 3365 Advanced Tech and Prof Writing
- ENG 3345 Tech and Prof Editing
- ENG 3366 Prof Document Design
- ENG 4490 Prof Writing Internship
- ENG 4488 Sem in Prof Writing Portfolio Design
  (all 3 SH)

Additionally, students must select 4 courses from the following:
- ENG 3342 Adv Comp
- ENG 3320 Intro to Linguistics
- ENG 3351 Creative Writing I
- ENG 3352 Creative Writing II
- ENG 4400 Sel. Topics
- ENG 4405 History of English Language

Students at the Troy and Dothan campuses may select the English Language Arts Emphasis. This emphasis is required for all English Majors seeking Alabama certification for teaching in secondary schools.

**English Major: Option B Teacher Certification Program**

- ENG 3341 Advanced Grammar    3
- ENG 4342 Advanced Writing     3
- ENG 3371 Lit for Young Adults  3
- ENG 4405 History of Language   3

Twenty-four (24) hours of upper division English electives, nine (9) of which must be at the 4000 level, three (3) of which may be upper-level Creative Writing 18-hour Concentration in Drama, Speech, and Journalism for English Majors seeking Alabama Teacher certification in English Language Arts

- DRA 2211 Theatre for Youth  (1)
- DRA 2245 Stagecraft Lab     (1)
DRA 3345 Advanced Stagecraft Lab (1)
DRA 3301 Acting I (2)
DRA 3304 Lighting Techniques (2)
DRA 4451 Directing I (3)
SPH 3342 Argumentation and Debate (3)
SPH 4441 Oral Interpretation (2)
JRN 3326 Advising Student Publications (3)

**Expected Student Outcomes for English Majors**
All English majors will be able to demonstrate the following:
- The ability to think, read, and write critically.
- A general knowledge of American, British, and world literature.
- The ability to analyze works of literature.
- Competency in English grammar and the foundations of the English language.

**II. Requirements for English minor (18SH)**
Students minoring in English must take the following courses
- English 2211/2212 OR English 2244/2245
- English 3341
- 9 SH of upper division English courses

Students on the Troy campus may choose to minor in creative writing. The following course is required:
- ENG 3351 Intro to Creative Writing (prereq)
Additionally, 15 SH hours must be selected from the following:
- ENG 3352-3353 Advanced Creative Writing I-II
- ENG 3354 Advanced Nonfiction Writing
- ENG 3355 Verse Writing
- ENG 3356 Forms and Theory of Fiction
- ENG 4427 Contemporary Literature
- ENG 4489 Internship

Students at the Montgomery campus may choose to minor in English with an emphasis in Professional Writing. The following 4 courses (12 SH) are required:
- ENG 2260 Intro to Tech and Prof Writing
- ENG 3365 Advanced Tech and Prof Writing
- ENG 3345 Tech and Prof Editing
- ENG 3366 Prof Document Design
Additionally, students should select 2 courses (6SH) from the following:
- ENG 3342 Adv Comp
- ENG 3320 Intro to Linguistics
- ENG 3351 Creative Writing I
- ENG 3352 Creative Writing II
- ENG 4400 Selected Topics
- ENG 4405 History of English Language
Expected Student Outcomes

All English minors will be able to demonstrate the following:

- The ability to think, read, and write critically.
- A general knowledge of American, British, and world literature.
- The ability to analyze works of literature.

RED 0098  READING I (3 SCH)
A course for those students who are deficient in basic reading skills such as word recognition, comprehension and study skills. A placement test will be required.

*NOTE: May not be audited. Institutional credit only.*

ENG 1100  PREPARATORY ENGLISH (3 SCH)
Developmental instruction focusing on mastering rules of English grammar and composition and developing skills needed to write clear, effective sentences. Involves application of appropriate computer software and variety of written activities. Students who do not pass the English placement essay will be placed in this course. Depending upon the TSU campus at which the course is taken, the student may be required to attend weekly sessions at a writing and/or Computer Center.

*NOTE: This course will not substitute for any General Studies requirement and will not be used in meeting minimum degree requirements.*

*Minimum grade of C required for credit.*

ENG 1101  COMPOSITION AND MODERN ENGLISH I (3 SCH)
Intensive instruction in the writing process. Focuses on organization of ideas in well-developed expository and argumentative essays (usually 6 to 8 essays), with stress on grammar, punctuation, and vocabulary development. A grade of C or better is required for credit. Must be completed within first 30 hours of enrollment. (Prerequisite: Placement Testing).

ENG 1102  COMPOSITION AND MODERN ENGLISH II (3 SCH)
Text-based analyses and application of principles and tools of research in writing short research papers. A grade of C or better is required for credit. Must be taken within first 30 hours of enrollment. (Prerequisite: Eng 1101 or equivalent).

ENG 1103  HONORS ENGLISH COMPOSITION I (3 SCH)
Introductory study and practice of composition for the superior student. (Prerequisite: Minimum English score of 27 on the ACT, or 640 on the SAT; in certain cases, recommendation by an 1101 instructor).

ENG 1104  HONORS ENGLISH COMPOSITION II (3 SCH)
Continuation of study and practice of composition for the superior student. Prerequisite: Minimum grade of C in ENG 1103; or in certain cases, recommendation by a 1101 or 1102 instructor.

ENG 1150  BASIC STUDY TECHNIQUES (1 SCH)
Presentation of and practice in basic study techniques, including strategies for planning personal success, outlining materials, studying for tests, and taking tests.

ENG 2205  WORLD LITERATURE I (3 SCH)
Introduction to attitudes, philosophies, and reflections of life in world literary masterpieces from the ancient world, Middle Ages, and Renaissance. Requires demonstration of acceptable writing skills. (Prerequisite: ENG 1102 or equivalent).

ENG 2206  WORLD LITERATURE II (3 SCH)
Introduction to attitudes, philosophies, and reflections of life in world literary masterpieces from the Enlightenment to the present. Requires demonstration of acceptable writing skills. (Prerequisite: ENG 1102 or equivalent).

ENG 2207  HONORS WORLD LITERATURE I (3 SCH)
A course for the superior student, focusing on representative selections of the world’s dramatic masterpieces in prose and poetry. (Prerequisite: ENG 1104 or permission of department chair).

ENG 2208  HONORS WORLD LITERATURE II (3 SCH)
A course for the superior student, focusing on representative selections of the fictional masterpieces in Western literature. (Prerequisite: ENG 1104 or permission of department chair).

ENG 2210  WORD ORIGINS AND USAGE (2 SCH)
Discussion of principal ways by which words enter English language. Emphasizes learning prefixes, roots, and suffixes. Requires memorizing much material.

ENG 2211  AMERICAN LITERATURE I (3 SCH)
Study of works of selected writers in various American traditions and styles from colonial times to the Civil War. (Prerequisite: ENG 1102 or equivalent).
ENG 2212 AMERICAN LITERATURE II (3 SCH)
Study of works of selected writers in various American traditions and styles from 1860 to the present. (Prerequisite: ENG 1102 or equivalent).

ENG 2219 LITERATURE AND SCHOLARSHIP (2 SCH)
Philosophy and practice of literary scholarship, including basic tools and methods of literary research.

ENG 2225 THEMATIC APPROACHES TO LITERATURE (3 SCH)
An exploration of major themes in the literatures of various cultures, across historical periods and in a variety of genres. The course will focus on a selected topic. (Prerequisite: ENG 1102 or equivalent).

ENG 2244 BRITISH LITERATURE I (3 SCH)
A survey of British literature from its beginning to the eighteenth century. (Prerequisite: ENG 1102 or equivalent).

ENG 2245 BRITISH LITERATURE II (3 SCH)
A survey of British literature from the nineteenth century to the present. (Prerequisite: ENG 1102 or equivalent).

ENG 2260 INTRODUCTION TO TECHNICAL AND PROFESSIONAL WRITING (3 SH)
Technical communications for science, business, and professional work. Emphasis on writing for specific purposes to particular audiences in an organizational setting. Preparation of documents such as technical description of a mechanism or process, instructions, recommendations, reports, and resumes. NOTE: This course is a prerequisite for all required 3300- and 4400-level courses in the Professional Writing Emphasis. Students may take elective courses concurrently with this course.

ENG 2265 HISTORY OF THE AMERICAN CINEMA I (3 SCH)
A study of the history and development of the American cinema from its inception (c. 1895) to the end of the studio system (c. 1945). Emphasis will be on social and historical ramifications, on appreciation of film as a literary and art form, and on the major pioneers and contributors to the American movies. (Prerequisite: 6 semester hours of 2000-level English courses).
ENG 3301  WOMEN’S LITERATURE (3 SCH)
Representative works of literature by women. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3303  WRITING ACROSS THE DISCIPLINES (3 SCH)
An advanced study of writing expository, non-fiction prose which focuses on a variety of academic disciplines. NOTE: This course may not be used to meet English degree requirements but may be taken for free elective credit. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3305  FOLKLORE/MYTHOLOGY (3 SCH)
A multicultural survey of the forms and varieties of the mythology and folklore of major western cultures, emphasizing stories of Scandinavian, German, British, and American origin, and the application of these forms in modern cultures and literature. This course is recommended for English teachers seeking middle school certification. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3310  FICTION AND FILM (3 SCH)
Representation of fiction on film, with attention to visual techniques and the translation and representation of major literary themes. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3315  MODERN DRAMA (3 SCH)
Study of plays written between 1900 and the present. List of plays may vary with each offering. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3320  INTRODUCTION TO LINGUISTICS (3SH).
Overview to linguistics, the scientific study of language. The course will acquaint students with the grammatical, social, biological, and technological applications of language. (Prerequisite: ENG 1101 and 1102).

ENG 3326  SCIENCE FICTION (3 SCH)
An exploration of the literary, social, and generic importance of science fiction. (Prerequisite: 6 semester hours of 2000-level English courses).
ENG 3341  ADVANCED GRAMMAR (3 SCH)
Detailed study of the structural system of English grammar. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3345  TECHNICAL AND PROFESSIONAL EDITING (3 SCH)
Principles and practices of editing technical and scientific documents. Overview of the editing process; defining the editor’s rules and responsibilities, revising at structural and sentence levels, and addressing stylistic conventions of technical fields. Application to technical and scientific documents such as reports, proposals, and user manuals. Prerequisite: ENG 2260.

ENG 3351  INTRODUCTION TO CREATIVE WRITING I (3 SCH)
Practice in writing poetry, short stories, and/or plays, along with a concentrated study of the techniques and principles of creative writing in each genre. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3352  ADVANCED CREATIVE WRITING I (3 SCH)
Continued practice in writing poetry, short stories, and/or plays, along with a more advanced study of the techniques and principles of creative writing in each genre. (Prerequisite: 6 semester hours of 2000-level English courses; ENG 3351 or permission of instructor).

ENG 3353  ADVANCED CREATIVE WRITING II (3 SCH)
Practice in writing poetry, short fiction, or plays for class and instructor evaluation. (Prerequisite: 6 semester hours of 2000-level English courses; ENG 3351 or permission of instructor).

ENG 3354  ADVANCED NONFICTION WRITING (3 SCH)
The literature of fact. Emphasis on student writing and analysis of nonfiction forms, such as personal narrative, autobiography, lyric in prose, and New Journalism. (Prerequisite: 6 semester hours of 2000-level English courses; ENG 3351 or permission of instructor).

ENG 3355  VERSE WRITING (3 SCH)
Development of techniques in the practice of poetry, including expression through metrical patterns, rhyme, rhythm, imagism, metaphor, and symbolism. (Prerequisite: 6 semester hours of 2000-level English courses; ENG 3351 or permission of instructor).
ENG 3356    FORM AND THEORY OF FICTION (3 SCH)

Primarily a reading course for writers. Examination of the classic texts of literary theory; analysis of the use and purpose of the elements of fiction; and discussion of fiction form, from the short-short to hyper-text. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3357    FORM AND THEORY OF NONFICTION LITERATURE (3 SCH)

Examination of the theories behind various forms of nonfiction literature, whether autobiography, biography, the essay, diaries, and/or travel writing, with special emphasis on the historical evolution of a particular form. List of readings will vary with each course offering. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3361    CHILDREN’S LITERATURE (3 SCH)

Literature for children. (Prerequisite: 6 semester hours of 2000-level English courses). NOTE: No credit toward English major or minor.

ENG 3362    THE ARTHURIAN LEGEND THROUGH THE AGES (3 SCH)

Examination of Arthur not only in literary and historical works from its earliest traces in the Middle Ages to the present, but also in archaeology, the visual and decorative arts (especially painting and sculpture), manuscript decoration, film, musical, and opera. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3365    ADVANCED TECHNICAL AND PROFESSIONAL WRITING (3 SCH)

Study of technical communication as a dynamic process in organizational and social environments. Focus on the manner in which organizational hierarchies, purposes, and stylistic conventions interact with the writing process. Review of professional literature and professional associations concerned with improving communications within students’ disciplines. Prerequisite: ENG 2260.

ENG 3366    PROFESSIONAL DOCUMENT DESIGN (3 SCH)

Overview of the fundamental concepts and techniques of information design and production for both print and online documents, including the coordination of text, typography, and graphics; principles of audience analysis, usability, and readability; and an introduction to computer software for desktop publication and web design. Prerequisite: ENG 2260.
ENG 3371  LITERATURE FOR ADOLESCENTS (3 SCH)
Principles of and practice in the selection of literature for upper-elementary and for junior and senior high school students, with attention given to multicultural literature. Note: No credit toward English major or minor. Credit applied only to middle school education certification program in English. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4313  MODERN SHORT STORY (3 SCH)
Examination of 20th and 21st century short stories. List of stories may vary with each offering. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4314  BRITISH CULTURE ON LOCATION (3 SCH)
An intensive presentation of British culture on-site in London, Oxford, and other important British locations.

ENG 4342  ADVANCED WRITING (3 SCH)
Preparation for teaching English composition and opportunity to practice writing skills and techniques at the advanced level. Involves grading freshman essays provided by instructors of ENG 1101 and comparing evaluations. Requires writing several essays illustrating various modes of exposition and argumentation. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4400  SELECTED TOPICS IN LITERATURE AND/OR PROFESSIONAL WRITING (3 SCH)
Study of a topic of special interest and importance not covered in regularly offered courses in English. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4401  CHAUCER (3 SCH)
Study of Chaucer’s major poetry. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4402  STUDIES IN MEDIEVAL LITERATURE (3 SCH)
Study of non-Chaucerian British literature from the Middle Ages, including Beowulf, Piers Plowman, Sir Gawain and the Green Knight, mystery plays, Le Morte d’Arthur, and other works. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4403  ENGLISH RENAISSANCE LITERATURE (3SCH)
English prose and poetry of the 16th and 17th centuries with an emphasis on Sidney, Spenser, Donne, and Jonson. (Prerequisite 6 semester hours of 2000-level English courses).
ENG 4404  MILTON (3 SCH)
Milton’s poetry and major prose. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4405  HISTORY OF THE ENGLISH LANGUAGE (3 SCH)
Study of the development of English from the Anglo-Saxon period through the present, with reference to the Indo-European background of English. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4406  STUDIES IN BRITISH LITERATURE BEFORE 1660 (3 SCH)
Selections from Medieval and/or Renaissance British literatures, including classical, historical, and cultural background. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4410  STUDIES IN EIGHTEENTH-CENTURY BRITISH LITERATURE (3 SCH)
Selections from Restoration and 18th-century British literature and its historical and cultural background. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4413  STUDIES IN NINETEENTH-CENTURY BRITISH LITERATURE (3 SCH)
Study of Romantic and/or Victorian literatures. (Prerequisite: 6 semester hours of 2000 level English courses).

ENG 4414  BRITISH NOVEL BEFORE 1900 (3 SCH)
Representative novels by British writers of the 18th and 19th centuries. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4415  AMERICAN RENAISSANCE (3 SCH)
Selections from the major writers of the American literary renaissance, including such writers as Emerson, Thoreau, Hawthorne, Melville, Whitman, and Dickinson. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4416  NINETEENTH-CENTURY AMERICAN NOVEL (3 SCH)
Study of representative American novels of the 19th century. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4417  DRAMATURGY I (3 SCH)
Study of selected classical, period, and contemporary plays, with emphasis on dramatic techniques, character development, and production. List of plays may
vary with each offering. May require attending local productions during rehearsal and regular performances. (Prerequisite: 6 semester hours of 2000-level English courses).

*NOTE: Only one dramaturgy course may be used in English major or minor.*

**ENG 4418 DRAMATURGY II (3 SCH)**
Continuation of study of selected classical, period, and contemporary plays, with emphasis on dramatic techniques, character development, staging, and production. List of plays may vary with each offering. May require attending local productions during rehearsal and regular performances. (Prerequisite: 6 semester hours of 2000-level English courses).

*NOTE: Only one dramaturgy course may be used in English major or minor.*

**ENG 4421 ENGLISH NOVEL (3 SCH)**
Selected 18th, 19th, and 20th century novels written in English. (Prerequisite: 6 Semester hours of 2000-level English courses).

**ENG 4425 MODERN NOVEL (3 SCH)**
Study of representative novels written in English in the 20th and 21st centuries. (Prerequisites: 6 semester hours of 2000-level English courses).

**ENG 4426 MODERN POETRY (3 SCH)**
Study of 20th- and 21st-century poetry. (Prerequisite: 6 semester hours of 2000-level English courses).

**ENG 4427 CONTEMPORARY AMERICAN LITERATURE (3 SCH)**
Examination of representative American literature from the postmodern period (1960-present), with special emphasis on the diversity of themes, styles, and cultural contexts influencing the literary marketplace. Course readings may vary with each offering. (Prerequisite: 6 semester hours of 2000-level English courses).

**ENG 4428 THE AGE OF JOHNSON (3 SCH)**
A study of the works of Samuel Johnson and of his most important contemporaries, from about 1745 to 1798. (Prerequisite: 6 semester hours of 2000-level English courses).

**ENG 4430 SHAKESPEARE I: THE TRAGEDIES (3 SCH)**
Study of major and minor tragedies, with some attention to non-dramatic poetry. List of plays may vary with each offering. (Prerequisite: 6 semester hours of 2000-level English courses).

**ENG 4431 SHAKESPEARE II: THE COMEDIES (3 SCH)**
Study of comedies and romances. List of plays may vary with each offering. (Prerequisite: 6 semester hours of 2000-level English courses).
ENG 4432 SHAKESPEARE III: THE HISTORIES (3 SCH)
Study of history plays, especially those concerning Wars of the Roses. List of plays may vary with each offering. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4433 LITERARY CRITICISM (3 SCH)
Study of the major literary critics and their works from classical times to the present. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4434 ROMANTIC PERIOD IN ENGLISH LITERATURE (3 SCH)
Romantic prose and poetry with emphasis on the writings of Blake, Coleridge, Wordsworth, Byron, Keats, and Shelley. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4443 SOUTHERN WRITERS (3 SCH)
Study of works by writers from the American South from colonial times to the present. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4452 MEDIEVAL AND RENAISSANCE ENGLISH DRAMA (3 SCH)
Survey of drama from the middle ages and Renaissance, excluding Shakespeare. Begins with brief study of folk and liturgical origins of drama, includes a few medieval mystery and morality plays, and features Renaissance plays by Heywood, Udall, Kyd, Marlowe, Beaumont, Fletcher, Jonson, and Webster. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4453 ENGLISH DRAMA THROUGH THE 18TH CENTURY (3 SCH)
English drama (excluding Shakespeare) from the 9th through the 18th century. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4460 VICTORIAN POETRY (3 SCH)
A study of Victorian poetry, with emphasis upon the works of Tennyson, Browning, Arnold, and Hardy. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4461 VICTORIAN PROSE (3 SCH)
A survey of the works of major Victorian prose writers, with emphasis upon the works of Carlyle, Newman, Mill, Ruskin, Arnold, and Pater. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4465 AFRICAN AMERICAN LITERATURE (3 SCH)
Study of the major African American writers from the beginning of American history to the present. (Prerequisite: 6 semester hours of 2000-level English courses).

ENG 4481 METHODS AND MATERIALS FOR THE SECONDARY TEACHER (4 SCH)
A survey of teaching methods and materials appropriate for teaching in the content areas for grades 6-12. Topics addressed will include teacher evaluation in the public schools, collaboration with special education teacher evaluation in the public schools, collaboration with special education teachers, and lesson planning formats. In addition, teaching methods, selections organization and use of English language arts materials for grades 6-12 will be covered in detail. A professional laboratory experience is included in this course.

ENG 4488  SEMINAR IN PROFESSIONAL WRITING PORTFOLIO DEVELOPMENT (3 SCH)

Senior seminar. Creation and development of a professional portfolio containing carefully selected materials that demonstrate seniors’ mastery of specific writing capabilities and skills. Prerequisite: senior class standing, ENG 2260, and completion of at least three required courses and three electives in the major.

ENG 4489  INTERNSHIP (3 SCH)

Practical experience involving writing and editing skills while working under the supervision of the Alabama Literary Review staff. (Prerequisite: ENG 3352-3353 or permission of instructor).

ENG 4490  PROFESSIONAL WRITING INTERNSHIP (3 SCH)

Writing Practicum/Internship at a local industry, publisher, arts or public agency. Discussion of experiences and problems in the writing practicum/internship. Study of professional writing practices and demands, including those of career preparation and development. (Prerequisite: ENG 2260, and completion of at least three required courses and three electives in the major).

ENG 4491-94 GUIDED INDEPENDENT RESEARCH AND STUDY (3 SCH)

Thorough examination of material on a selected subject, requiring a documented research paper. Additional information indexed under “Guided Independent Research and Study.” (Prerequisite: 6 semester hours of 2000-level English courses). Note: Students who need regimentation of regular classroom to do good academic work should not attempt these courses.

ENG 4495  SENIOR SEMINAR IN ENGLISH (3 SCH)

A senior-level course capstone designed to engage the student with the central questions of literary studies and to develop the student’s skills in critical thinking and writing and in research. (Prerequisite: Senior status).
CREATIVE WRITING MINOR
CREATIVE WRITING COURSES
TROY UNIVERSITY

ENG 3351  INTRODUCTION TO CREATIVE WRITING I (3 SCH)
Practice in writing poetry, short stories, and/or plays, along with a concentrated
study of the techniques and principles of creative writing in each genre.
(Prerequisite: 6 semester hours of 2000-level English courses).

ENG 3352  ADVANCED CREATIVE WRITING I (3 SCH)
Continued practice in writing poetry, short stories, and/or plays, along with a
more advanced study of the techniques and principles of creative writing in each
genre. (Prerequisite: 6 semester hours of 2000-level English courses; ENG 3351
or permission of instructor).

ENG 3353  ADVANCED CREATIVE WRITING II (3 SCH)
Practice in writing poetry, short fiction, or plays for class and instructor
evaluation. (Prerequisite: 6 semester hours of 2000-level English courses; Eng
3351 or permission of instructor).

ENG 3354  ADVANCED NONFICTION WRITING (3 SCH)
The literature of fact. Emphasis on student writing and analysis of nonfiction
forms, such as personal narrative, autobiography, lyric in prose, and New
Journalism. (Prerequisite: 6 semester hours of 2000-level English courses; Eng
3351 or permission of instructor).

ENG 3355  VERSE WRITING (3 SCH)
Development of techniques in the practice of poetry, including expression through
metrical patterns, rhyme, rhythm, imagism, metaphor, and symbolism.
(Prerequisite: 6 semester hours of 2000-level English courses; Eng 3351 or
permission of instructor).

ENG 3356  FORMS AND THEORY OF FICTION (3 SCH)
Primarily a reading course for writers. Examination of the classic texts of literary
theory; analysis of the use and purpose of the elements of fiction; and discussion
of fiction form, from the short-short to hyper-text. (Prerequisite: 6 semester hours
of 2000-level English courses).

ENG 3357  FORM & THEORY OF NONFICTION LITERATURE (3 SCH)
Examination of the theories behind various forms of nonfiction literature, whether auto-biography, biography, the essay, diaries, and/or travel writing, with special emphasis on the historical evolution of a particular form. List of readings will vary with each course offering. (Prerequisite: 6 semester hours of 2000-level English courses).

**ENG 4489  INTERNSHIP (3 SCH)**

Practical experience involving writing and editing skills while working under the supervision of the *Alabama Literary Review* staff. (Prerequisite:ENG 3352-3353 or permission of instructor).

**Geomatics Program**

*A professional program of study is offered in the sub disciplines of geomatics (surveying and mapping). These sub disciplines include classical survey fundamentals, land surveying, land development, photogrammetry, remote sensing, geodesy, GPS, least squares adjustment, and geographic information systems (GIS). Graduates are eligible to sit for the Fundamentals of Land Surveying (FLS) licensing examination administered by the Alabama State Board of Licensure for Professional Engineers and Land Surveyors. The Alabama Society of Professional Land Surveyors actively supports the geomatics program with scholarships and sponsors student participation in state conventions/seminars. The geomatics program is guided by an advisory board comprised of prominent state and nationally recognized surveying and mapping professionals.*

All students pursuing an undergraduate degree in Geomatics at Troy University must complete the following course of study.

<table>
<thead>
<tr>
<th></th>
<th>62 semester hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Studies</strong></td>
<td></td>
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<tr>
<td><strong>Geomatics Major</strong></td>
<td>47 semester hours</td>
</tr>
<tr>
<td><strong>Academic Minor</strong></td>
<td>18 semester hours</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>127 semester hours</td>
</tr>
</tbody>
</table>

**General Studies Requirements**

**Area I**
6 SH English Composition

**Area II  14 SH--Listing of Specific Courses**
3 SH Introductory Drawing (Art 2201)
2 SH Choice of Music Appreciation or Intro to Drama
3 SH Speech
3 SH Survey of Literature
3 SH selected from:
--Foreign Language
--Literature
--Philosophy
--Ethics
--Mythology
--World Religion

**Area III 12 SH—Listing of Specific Courses**
- 4 SH Principles of Bio w/lab
- 4 SH Physics I w/lab
- 4 SH Calculus I

**Area IV 12 SH—Listing of Specific Courses**
- 6 SH History
- 3 SH Micro-Econ
- 3 SH Macro-Econ

**Area V 18 SH**
- 3 SH Computer Science I (CS 2244)
- 1 SH University Orientation
- 4 SH Calculus II
- 4 SH Physics II w/lab
- 3 SH Applied Statistics(MTH 2210)
- 3 SH Computer Applications Course

**GEOMATICS MAJOR (47 Hours)**
*The geomatics major provides instruction in classical survey fundamentals, land surveying, land development, photogrammetry, remote sensing, geodesy, GPS, least squares adjustment, construction surveying, and geographic information systems (GIS).*

**Geomatics Core**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEM 2200</td>
<td>Basics of Cartography &amp; Surveying</td>
</tr>
<tr>
<td>GEM L200</td>
<td>Basics of Cartography &amp; Surveying Lab</td>
</tr>
<tr>
<td>GEM 3309</td>
<td>Land Parcel Administration and Law</td>
</tr>
<tr>
<td>GEM L309</td>
<td>Land Parcel Administration and Law Lab</td>
</tr>
<tr>
<td>GEM 3310</td>
<td>Land Surveying Practice</td>
</tr>
<tr>
<td>GEM L310</td>
<td>Boundary Retracement Lab</td>
</tr>
<tr>
<td>GEM 3330</td>
<td>Advanced Measurement Analysis</td>
</tr>
<tr>
<td>GEM L330</td>
<td>Advanced Measurement Analysis Lab</td>
</tr>
<tr>
<td>GEM 3366</td>
<td>Photogrammetry &amp; Remote Sensing</td>
</tr>
<tr>
<td>GEM L366</td>
<td>Photogrammetry &amp; Remote Sensing Lab</td>
</tr>
<tr>
<td>GEM 3370</td>
<td>Geodesy and Geodesics</td>
</tr>
<tr>
<td>GEM L370</td>
<td>Geodesy and Geodesics Lab</td>
</tr>
<tr>
<td>GEM 3379</td>
<td>Introduction to Least Squares Adjustment</td>
</tr>
<tr>
<td>GEM L379</td>
<td>Introduction to Least Squares Adjustment Lab</td>
</tr>
<tr>
<td>GEM 3390</td>
<td>Intro to GIS</td>
</tr>
<tr>
<td>GEM L390</td>
<td>Intro to GIS Lab</td>
</tr>
</tbody>
</table>
NOTE: It is strongly recommended that each student gain work experience with a professional surveyor or geomatics firm after completion of the sophomore year.

GEOGRAPHIC INFORMATION SYSTEMS (GIS) MINOR (18 Hours)

Core Courses:
GEM 3390 (3) Introduction to GIS
GEM L390 (1) Introduction to GIS Lab
GEM 3391 (3) Applications of GIS
GEM L391 (1) Applications of GIS Lab
GEM 4499 (2) Geomatics/GIS Projects

With adviser approval, select a minimum of 8 credit hours from one of the four bundles:

Data Collection/Analysis
GEM 2200 (3) Basics of Cartography and Surveying
GEM L220 (1) Basics of Cartography and Surveying Lab
GEM 3330 (3) Advanced Measurement Analysis
GEM L330 (1) Advanced Measurement Analysis Lab
GEM L371 (1) Measurement for GIS Lab

Image Processing
GEM 1100 (1) Computer-Aided Drafting
GEM L110 (2) Computer-Aided Drafting Lab
GEM 3366 (3) Photogrammetry and Remote Sensing
GEM L366 (1) Photogrammetry and Remote Sensing Lab
GEM L367 (1) Digital Images in GIS Lab

Customizing the ArcView GIS Interface
CS 2260 (3) Computer Science II
CS 3323 (3) Data Structures
CS 3339 (3) Fundamentals of Object-Oriented Programming

GIS Database Development
CS 2260 (3) Computer Science II
CS 3323 (3) Data Structures
CS 4420 (3) Introduction to Database Systems

GEOMATICS COURSES (GEM)
1100  Computer-Aided Drafting  (Fall/Spring, 1 Credit Hour)

This course provides students with the knowledge and skills necessary to create maps and plats. Topics of study include basic drafting principles, drawing set-up and scale, drawing commands, and orthographic projections. Corequisite: GEM L110.

L110  Computer-Aided Drafting Lab  (Fall/Spring, 2 Credit Hours)

The Lab provides the opportunity for students to use computer-aided drafting software to complete project drawings under the direct supervision of a CAD professional.

2220  Basics of Cartography and Surveying  (Fall, 3 Credit Hours)

This course provides each student an introduction to measurement theory, instrumentation, measurement systems, measurement computations, data accuracy and precision. The structure of the field of geomatics is explored. Major components of the course are survey statistics, traverse computations, coordinate systems and datums, elevations, and mapping. The use of computer-aided drawing software to produce maps and plats is required. Prerequisite: MTH 1115. Corequisite: GEM L220.

L220  Basics of Cartography and Surveying Lab  (Fall, 1 Credit Hour)

This field laboratory provides the opportunity to use instrumentation to make the necessary measurements to produce computed products. Focuses on the use of a field book to record measurements, the analysis of field measurements, and the use of survey instrumentation.

3309  Land Parcel Administration and Law  (Fall, 3 Credit Hours)

The geomatics student is introduced to the basic principles of land tenure and the cadastre. The major component of the course is the study and application of survey statute and related case law. The concepts underlying the hierarchy of evidence, sequential versus simultaneous conveyances, adverse possession, riparian rights, land descriptions, and the U.S. Public Land Survey System are explored. Prerequisite: GEM 2220 or approval of the Geomatics Program Coordinator. Corequisite: GEM L309.

L309  Land Parcel Administration and Law Lab  (Fall, 1 Credit Hour)
This laboratory explores the impact of land survey law on the practice of surveying and mapping in the State of Alabama. Focuses on the practice of writing legal descriptions, the structure of the U.S. Public Land Survey System, and courthouse research.

3310  Land Survey Practice  (Spring, 3 Credit Hours)

The issues of boundary location and retracement are central to this course. Focuses on Alabama survey history, the practice of surveying in Alabama, professional ethics, and the Standards of Practice for Surveying in Alabama. Prerequisite: GEM 3309.

L310  Boundary Retracement Seminar  (Spring or Summer, 1 Credit Hour)

The student gains practical field experience in an off-campus field boundary retracement project provided as a joint effort of Troy University, the Alabama Society of Professional Land Surveyors, and the Federal Bureau of Land Management. Prerequisite: GEM 3310.

3330  Advanced Measurement Analysis (Spring, 3 Credit Hours)

Survey equipment calibration, survey astronomy, topographic mapping, control leveling, instrumentation error, and the propagation of error through survey calculations. This course is the second course of a one-year study of survey fundamentals. Prerequisite: GEM 2220. Corequisite: GEM L330.

L330  Advanced Measurement Analysis Lab (Spring, 1 Credit Hour)

Field laboratory experience gaining astronomic observations for azimuth, using EDMI calibration baselines, conducting topographic mapping projects and control level loops, and testing for instrument errors. The student is introduced to the field use of data collectors.

3366  Photogrammetry and Remote Sensing  (Fall, 3 Credit Hours)

Introduction to metrical photogrammetry, interpretative photogrammetry, and remote sensing. Focuses on the theory, instrumentation, and practical application of photogrammetry to the problem of mapping the earth’s surface. Remote sensing concepts, principles, sensors, and specific satellite platforms are covered in the course. Prerequisite: MTH 1115. Corequisite: GEM L366.
L366  Photogrammetry and Remote Sensing Lab  (Fall, 1 Credit Hour)

Use computer software to view and enhance photographs, to form stereomodels, to create digital elevation models, and produce orthophotos. The opportunity to use a softcopy photogrammetric workstation to generate map compilation products is provided to the student.

L367  Digital Images in GIS  (Spring, 1 Credit Hour)

This laboratory provides the Geomatics/GIS student the opportunity to gain experience with digital image processing to use the vast inventory of digital images available for GIS projects. Prerequisites: GEM 3366 and GEM L366.

3370  Geodesy and Geodetics  (Spring, 3 Credit Hours)

The study of the underlying theory necessary to understand the use of the Global Positioning System (GPS). Focuses on mathematical models of the earth, the earth’s gravity field, and the use of near-earth satellites to measure the earth’s surface. Important concepts developed in this course include coordinate systems, datums, map projections, coordinate transformations, and GPS network design. Prerequisites: MTH 1125, GEM 3379/L379. Recommended completion of PHY 2253 or the equivalent. Corequisite: GEM L370.

L370  Geodesy and Geodetics Lab  (Spring, 1 Credit Hour)

Practice performing geodetic computations using the ellipsoid of revolution as a reference surface. A major laboratory component is static GPS network design and the use of dual-frequency survey-grade GPS equipment to extend survey control to the project site.

L371  Measurements for GIS  (Spring, 1 Credit Hour)

The laboratory provides the Geomatics/GIS student valuable hands-on field experience using instrumentation necessary to provide data for GIS Projects. Data will be acquired using the digitizer, mapping grade GPS receivers, and survey grade GPS receivers in the real-time kinematic mode. Prerequisites: GEM 2220/L220.

3379  Introduction to Least Squares Adjustment  (Fall, 3 Credit Hours)

The application of the principles of least squares adjustment to compute optimized solutions to problems involving redundant data and the theory of error propagation.
Prerequisite: MTH 1125 and MTH 2210 Applied Statistics or equivalent.
Corequisite: GEM L379.

L379 Introduction to Least Squares Adjustment Lab (Fall, 1 Credit Hour)

The use of the software program, Matlab, to solve data adjustment problems and to analyze spatial data. Practical application of the theory of least squares adjustment and general error propagation to typical problems in geomatics.

3390 Introduction to Geographic Information Systems (Fall, 3 Credit Hours)

This course is the first course in a one-year study of the fundamentals of Geographic Information Systems (GIS). Topics of study are digital mapping, data capture, data conversion, data structures, and spatial data concepts. Prerequisite: MTH 1112 Pre-Calculus Algebra or equivalent and IS 2240 Computer Application, or consent of instructor.

L390 Introduction to GIS Lab (Fall, 1 Credit Hour)

The laboratory provides the student the opportunity to learn ArcView GIS software in order to produce GIS products using existing databases.

3391 Applications of Geographic Information Systems (Spring, 3 Credit Hours)

This course provides a study of common applications of GIS with an emphasis on land information systems and land management. The course also provides further study in database design, digital base map analysis and testing, and spatial analysis. Prerequisite: GEM 3390 or consent of the instructor.

L391 Applications of GIS Lab (Spring, 1 Credit Hour)

This laboratory provides the student the opportunity to learn and use ArcInfo GIS to accomplish a full range of GIS applications.

4405 Route and Construction Surveying (Spring, 2 Credit Hours)

Explores the theoretical foundations of route and construction surveying. Course topics are coordinate geometry (COGO), horizontal and vertical curve models, spirals, alignments, stationing, cross sections, areas, volumes, and route design elements. Prerequisites: GEM 1100 or the equivalent, and GEM 3330. Corequisite: GEM L405.

L405 Route and Construction Surveying Lab (Spring, 1 Credit Hour)
This field laboratory applies the principles of route and construction surveying, the use of civil design software, and the use of data collectors for practical design and field layout.

4407  Land Development  (Spring, 1 Credit Hour)

Explores the concepts and problems associated with the design and construction of subdivisions and related infrastructure. Prerequisites: GEM 1100 or the equivalent, and GEM 4409. Corequisite: GEM L407.

L407 Subdivision Design Practice  (Spring, 1 Credit Hour)

This computer laboratory provides the student the opportunity to design and create those drawings necessary for local government approval of the typical subdivision.

4409  Hydrology  (Fall, 3 Credit Hours)

Explores several models used to compute runoff estimates based on particular rainfall events. Course topics are the hydrologic cycle, rainfall intensity, runoff models, hydrographs, storm sewer design, culvert design, open channel flows, watershed delineation, water detention, and retention structures, and onsite sewage disposal systems. Prerequisite: GEM 1100 or the equivalent, MTH 1115. Corequisite: GEM L409. Recommended completion of PHY 2253 or the equivalent.

L409 Hydrology Lab  (Fall, 1 Credit Hour)

Compute peak runoff estimates, and open channel designs. The hydrology components of Microstation and AutoCAD are explored with respect to solving and presenting peak runoff solutions. A design project involving the use of large-scale topographic maps will be assigned.

4495  Cooperative Work Experience I  (Fall, Spring, Summer, 2 Credit Hours)

The geomatics student may register for GEM 4495 after being hired by an eligible employer participating in the Cooperative Work Experience Program. After completion of the semester the student is expected to submit a written report to the Geomatics Program Coordinator detailing the work experience, and present a brief oral report to his/her peers in the following semester in a scheduled geomatics class. Prerequisites: Completion of GEM 2220, maintenance of a 2.0 grade point average, and approval of the Geomatics Program Coordinator.

4496  Cooperative Work Experience II  (Fall, Spring, Summer, 2 Credit Hours)

The geomatics student may register for GEM 4496 for the second semester of cooperative work experience. The student must be in residence at Troy
University for a minimum of one semester after completion of GEM 4495 before leaving for cooperative work experience under GEM 4496. Prerequisites: Completion of GEM 4495 and approval of the Geomatics Program Coordinator.

4499 Geomatics/GIS Projects (Spring, 2 Credit Hours).
This course offers the geomatics/GIS student with senior standing the opportunity to apply the fundamental principles and concepts learned in the study of geomatics/GIS to a particular problem or project. The student will state the problem, design an experiment to test a hypothesis concerning the problem statement, take the measurements, array the data, analyze the data, state conclusions, and place the study into a final report. Prerequisite: IS 2240 and senior standing or consent of the geomatics program coordinator.

DEPARTMENT OF HISTORY

History is one of the major keystones of a liberal arts education, and the History Department provides the history courses required for the General Studies core. For the Bachelor of Science Degree in History, a student may choose either a non-teaching major or a teaching major in American/Latin American history or European/Asian/African history. The history teaching major must also have a second major in education. History teaching majors should consult their education adviser concerning their education and certification requirements.

Expected Student Outcomes

Upon completion of the history program, the student will demonstrate:
- A broad knowledge base in history.
- Proficiency in writing skills and oral communication.
- Historical methods of research including computer skills.

All students pursing an undergraduate degree in History at Troy University must complete the following course of study:

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies</td>
<td>60</td>
</tr>
<tr>
<td>History Major</td>
<td>36</td>
</tr>
<tr>
<td>Academic Minor</td>
<td>18</td>
</tr>
<tr>
<td>Upper-level electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
</tr>
</tbody>
</table>

American/Latin American History Major

Degree Requirements
To earn a bachelor’s degree in American/Latin American history, students must complete:

**General Studies Requirements** 60SCH

**Area I: 6SH**
- 6 SH English Composition

**Area II: 13 SH**
- 4 SH selected from:
  - 2 SH Art Appreciation
  - 2 SH Music Appreciation
  - 2 SH Intro to Drama
- 3 SH Speech
- 3 SH Literature
- 3 SH selected from:
  - Foreign language
  - Literature
  - Philosophy
  - Ethics
  - Mythology
  - World Religion

**Area III: 11 SH**
- 4 SH Principles of Biology w/ Lab
- 4 SH Natural Science w/ Lab from:
  - Chemistry
  - Physics
  - Physical Science
  - Earth Science
- 3 SH Math, finite or higher

**Area IV: 12 SH**
History majors must complete 6 SH sequence in Western Civilization or world history.
- 6 SH electives from:
  - Anthropology
  - World Geography
  - General Psychology
  - Developmental Psychology
  - History
  - Micro-Economics
  - Macro-Economics
  - Sociology
  - World Politics
  - US Government
Area V: 18 SH
-3 SH Computer Applications Course
-1 SH graded University Orientation course
-3 SH History 1111
-3 SH History 1112
-3 SH GEO 2210
-5 SH Approved General Studies Electives

Major 36SCH

Required courses:
HIS 3375 Research and Methodology 3
HIS 4490 Senior Seminar 3

Approved upper-level American/Latin American courses 18
Approved upper-level European/Asian/African courses 12

Minor 18

Upper-level electives 6
Total 120SCH

European/Asian/African History Major

Degree Requirements

To earn a bachelor’s degree in European/Asian/African history, students must complete:

General Studies Requirements 60SCH
Area I: 6SH
-6 SH English Composition

Area II: 13 SH
-4 SH selected from:
  -2 SH Art Appreciation
  -2 SH Music Appreciation
  -2 SH Intro to Drama
-3 SH Speech
-3 SH Literature
-3 SH selected from:
  -Foreign language
  -Literature
  -Philosophy
- Ethics
- Mythology
- World Religion

Area III: 11 SH
- 4 SH Principles of Biology w/ Lab
- 4 SH Natural Science w/ Lab from:
  - Chemistry
  - Physics
  - Physical Science
  - Earth Science
- 3 SH Math, finite or higher

Area IV: 12 SH
History majors must complete 6 SH sequence in Western Civilization or world history.
- 6 SH electives from:
  - Anthropology
  - World Geography
  - General Psychology
  - Developmental Psychology
  - History
  - Micro-Economics
  - Macro-Economics
  - Sociology
  - World Politics
  - US Government

Area V: 18 SH
- 3 SH Computer Applications Course
- 1 SH graded University Orientation course
- 3 SH History 1111
- 3 SH History 1112
- 3 SH GEO 2210
- 5 SH Approved General Studies Electives

Major 36SCH

Required courses:
HIS 3375 Research and Methodology 3
HIS 4490 Senior Seminar 3

Approved upper-level European/Asian/African courses 18
Approved upper-level American/Latin American courses 12

Minor 18
Upper-level electives                        6  
Total                                120SCH

History Minor

Expected Student Outcomes

Upon completion of the history minor, a student will:
· Demonstrate a sufficient knowledge base in history.
· Exhibit proficiency in writing skills and oral communication.
· Demonstrate historical methods of research computer skills.
· Place historical events within their proper time frame.

To complete the requirements for a minor in history, students must take 18 SCH. 
    Required courses
          HIS 3375 Research and Methodology              3
      Five upper-level history courses               15
          (HIS 1111 and HIS 1112 are prerequisites for upper-level American 
           history courses and may be taken if not taken for General Studies)

      Total                                     18 SCH

History Teaching Major

Degree Requirements

To earn a Bachelor of Science in History Education (high school, grades 6-12), students 
must complete:

General Studies Requirements               60SCH
          Area I: 6SH
          - 6 SH English Composition
          Area II: 13 SH
          - 4 SH selected from:
            - 2 SH Art Appreciation
            - 2 SH Music Appreciation
            - 2 SH Intro to Drama
          - 3 SH Speech
          - 3 SH Literature
          - 3 SH selected from:
            - Foreign language
            - Literature
-Philosophy
-Ethics
-Mythology
-World Religion

Area III: 11 SH
-4 SH Principles of Biology w/ Lab
-4 SH Natural Science w/ Lab from:
  -Chemistry
  -Physics
  -Physical Science
  -Earth Science
-3 SH Math, finite or higher

Area IV: 12 SH
History majors must complete 6 SH sequence in Western Civilization or world history.
-3 SH POL 2241 American National Government
-3 SH SOC 2275 Introduction to Sociology

Area V: 18 SH
-3 SH Computer Applications Course
-1 SH graded University Orientation course
-3 SH History 1111
-3 SH History 1112
-3 SH GEO 2210
-5 SH Approved General Studies Electives

Major 36SCH

Required courses:
HIS 3375 Research and Methodology 3
HIS 4451 The Far East 3
HIS 4490 Senior Seminar 3

Select one course:
HIS 3316 History of Alabama 3
HIS 4406 History of the New South

American/Latin American Major
Choose 5 courses in upper-level American/Latin American courses 15
Choose 4 courses in European/Asian/African courses 12

European/Asian/African Major
Choose 6 courses in upper-level European/Asian/African courses 18
Choose 3 courses in upper-level American/Latin American courses

Note: History Education Majors would still have the same combination of American/Latin American and European/Asian/African courses as the non-teaching major. This enables us to meet the SDE requirements regarding “the origin and evolution of the state and region.” This is not covered in all American history classes.

**HISTORY MAJOR WITH CIVIL RIGHTS EMPHASIS**

Because Montgomery played a crucial role in the civil rights movement of the 1960’s, the Montgomery Campus is historically positioned to offer a meaningful major in Civil Rights history.

**Degree Requirements**

To earn a bachelor’s degree in history with an emphasis in Civil Rights, students must complete:

General Studies Requirements 60 SCH

Area I: 6SH
- 6 SH English Composition

Area II: 13 SH
- 4 SH selected from:
  - 2 SH Art Appreciation
  - 2 SH Music Appreciation
  - 2 SH Intro to Drama
- 3 SH Speech
- 3 SH Literature
- 3 SH selected from:
  - Foreign language
  - Literature
  - Philosophy
  - Ethics
  - Mythology
  - World Religion

Area III: 11 SH
- 4 SH Principles of Biology w/ Lab
- 4 SH Natural Science w/ Lab from:
  - Chemistry
  - Physics
  - Physical Science
  - Earth Science
- 3 SH Math, finite or higher
Area IV: 12 SH
History majors must complete 6 SH sequence in Western Civilization or world history.
- 6 SH electives from:
  - Anthropology
  - World Geography
  - General Psychology
  - Developmental Psychology
  - History
  - Micro-Economics
  - Macro-Economics
  - Sociology
  - World Politics
  - US Government

Area V: 18 SH
- 3 SH Computer Applications Course
- 1 SH graded University Orientation course
- 3 SH History 1111
- 3 SH History 1112
- 3 SH GEO 2210
- 5 SH Approved General Studies Electives

Major

Required courses:
HIS 3375 Research and Methodology 3
HIS 4490 Senior Seminar 3
HIS 4430 Civil Rights Movement 3
HIS 4494 Guided Independent Study in Civil Rights 3
SOC 3310 Minorities in the U.S. Social Structure 3
ENG 4465 African-American Literature 3

Approved upper-level American/Latin American courses 9
Approved upper-level European/Asian/African courses 9

Minor

Upper-level electives 6 SCH

Total 120 SCH
UNDERGRADUATE HISTORY

HIS1101 WESTERN CIVILIZATION I (3)
Survey of developments in Western history from the pre-historic era to early modern times, including classical antiquity, Middle Ages, and Renaissance and Reformation.

HIS 1102 WESTERN CIVILIZATION II (3)
Survey of developments in Western history from modern times to the contemporary era, including the Scientific Revolution, Enlightenment, French Revolution and Napoleon, nationalism, imperialism, two world wars, and the postwar era.

HIS 1103 HONORS WESTERN CIVILIZATION I (3)
Chronological coverage same as HIS 1101. Enrollment restricted to superior students. Prereq: Permission of department chair.

HIS 1104 HONORS WESTERN CIVILIZATION II (3)
Chronological coverage same as HIS 1102. Enrollment restricted to superior students. Prereq: Permission of department chair.

HIS 1111 U.S. TO 1877 (3)
Survey of American history from the colonial period through Reconstruction, including the Revolution, Constitution, National Era, Sectional problems, and the Civil War.

HIS 1112 U.S. SINCE 1877 (3)
Survey of American history from post-Reconstruction to the contemporary era, including industrialization, emergence as a world power, World War I, Great Depression, World War II, Cold War, the expanding role of government, and global issues in the post-Communist era.

HIS 1113 HONORS U.S. TO 1877 (3)
Chronological coverage same as HIS 1111. Enrollment restricted to superior students. Prereq: Permission of department chair.

HIS 1114 HONORS U.S. SINCE 1877 (3)
Chronological coverage same as HIS 1112. Enrollment restricted to superior students. Prereq: Permission of department chair.

HIS 1122 World History to 1500 (3)
This course surveys the origins, development, and character of the major centers of civilizations and their relationships to one another from the earliest civilizations to 1500.

HIS 1123 World History from 1500 (3)
This survey course examines the growth, development, and character of the major centers of civilizations from 1500 to the present. The course focuses on the growing interconnections among societies around the globe in politics, economics, culture, and technology and examines the wide processes leading to the emergence of the present world.

HIS 3302 HISTORY OF RELIGION IN THE UNITED STATES (3)
A study of the development of religion in the United States, including denominations, beliefs, church life, and the relationship of religious beliefs to other beliefs and institutions. Prereq: His 1111 and 1112 or permission of instructor. [Troy]

HIS 3304 MILITARY HISTORY OF THE UNITED STATES (3)
A study of war in United States history from the Colonial period through the Vietnam War, with emphasis on role of warfare in United States history and the relationship of the military to the civilian. Prereq: His 1111 and 1112 or permission of instructor. [Troy]

HIS 3306 AFRICAN AMERICAN HISTORY (3)
An introduction to the history of African Americans from the 17th Century to the present, including slavery, Civil War and emancipation, legalized discrimination, and the struggles for equality in present day American society. Prereq: His 1111 and 1112 or permission of instructor. [Troy]

HIS 3309 ENGLAND TO 1688 (3)
A survey of English history from the Anglo-Saxons to the Glorious Revolution, emphasizing the interaction of geographical, political, economic, and cultural forces which shaped England as a monarchy. Prereq: His 1102 and 1102 or permission of instructor.

HIS 3310 ENGLAND SINCE 1688 (3)
The final evolution of the English political system from the reign of William and Mary to the contemporary era, including social and economic transformations, the British Empire, the two world wars, the welfare state, and current issues. Prereq: His 1101 and 1102 or permission of instructor.

HIS 3320 THE VIETNAM WAR (3)
A study of the period 1946 to 1975 in Indochina with emphasis on the American involvement during and after the French colonial period, escalating involvement of the Kennedy and Johnson administrations, and Vietnamization and withdrawal under President Nixon. Prereq: HIS 1111 and 1112 or permission of instructor. *May be used for Political Science credit.

HIS 3316 HISTORY OF ALABAMA (3)
A study of the demographic, political, social, economic, and religious aspects of Alabama’s history, emphasizing the role of the state within the nation. Prereq:
HIS 1111 and 1112 or permission of instructor.

HIS 3318 HISTORY OF AMERICAN WOMEN (3)
An introduction to the history of women in America from the 17th century to the present, exploring the major economic, religious, social, and political ideas and developments which have shaped their status and role in American history. Prereq: His 1111 and 1112 or permission of instructor.

HIS 3330 HISTORICAL ARCHAEOLOGY (3)
An examination of the historical research methods and archaeological techniques used to investigate and interpret archaeological sites dating from the prehistoric period. [Troy]

HIS 3341 MEDIEVAL EUROPE (3)
Western Europe from the fall of Rome to the Renaissance, including religious and intellectual traditions and the revival of governmental institutions. Prereq: His 1101 and 1102 or permission of instructor.

HIS 3342 RENAISSANCE AND REFORMATION (3)
Historical review of the transitional centuries bridging the medieval and the modern eras, including the rebirth of art and literature, the Protestant and Catholic reform movements, and the role of kings and states. Prereq: His 1101 and 1102 or permission of instructor.

HIS 3343 AGE OF ABSOLUTISM (3)
Survey of political and religious controversies that shaped affairs in Europe during the 16th and 17th centuries, emphasizing the flowering of monarchy and aristocracy. Prereq: His 1101 and 1102 or permission of instructor.

HIS 3344 AGE OF REASON (3)
Survey of European history in the 18th century, emphasizing the cataclysmic developments in scientific, political, humanitarian, and economic thought that prepared the way for the rise of democracy in both the old and the new world. Prereq: His 1101 and 1102 or permission of instructor.

HIS 3352 HISTORY OF AFRICA (3)
A survey of 19th and 20th century political, social, and cultural history of the region, including the partition of Africa by European powers and decolonization. Prereq: His 1101 and 1102 or permission of instructor.

HIS 3356 HISTORY OF THE MIDDLE EAST (3)
Background information on Islam, the Ottoman Empire, and Western influence sets the scene for a detailed study of political, economic, and social developments since World War II. Prereq: His 1101 and 1102 or permission of instructor.

HIS 3375 RESEARCH AND METHODOLOGY (3)
A course designed to acquaint students with research methods and computer skills as related to the history profession. The principal requirement is the successful completion of a formal research paper in which students will demonstrate proficiency in research, writing, and basic computer skills. 

**NOTE: It is strongly recommended that history majors complete this course during the first term of their junior year.** Prereq: Nine semester hours of history, including one of the freshman/sophomore level series. (Students must receive a grade of “C” or better for credit toward completion of degree requirements.)

HIS 4401 FRENCH REVOLUTION AND NAPOLEON (3)
A study of the absolutist-aristocratic France challenged by democratic-egalitarian ideals and revolution. The role of Napoleon as conqueror of Europe and as propagator and destroyer of the French Revolution is also studied. Prereq: His 1101 and 1102 or permission of instructor.

HIS 4402 EUROPE FROM 1815-1900 (3)
A study of Europe from the Congress of Vienna to 1900, including political, social, and economic developments in various countries, the rise of nationalism and unification movements, and imperialism. Prereq: His 1101 and 1102 or permission of instructor. Prereq: His 1101 and 1102 or permission of instructor.

HIS 4403 CONTEMPORARY EUROPE (3)
Traces European developments in the 20th century, including domestic developments, World War I, Great Depression, rise of totalitarianism, World War II, European integration, the Cold War, and the post-Cold War era. Prereq: His 1101 and 1102 or permission of instructor.

HIS 4405 OLD SOUTH (3)
An examination of the cultural, political, religious, and economic trends that shaped the colonial and antebellum south and the Civil War which ended that era. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4406 NEW SOUTH (3)
An examination of the political, social, racial and religious trends and policies that defined the New South. Topics include reconstruction, redemption, agrarian unrest, Jim Crow, industrialization, Progressive Movement, World War I, the Great Depression, World War II, and the Civil Rights Movement. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4411 COLONIAL AMERICA (3)
Study of the colonial period from European discovery to the end of the French and Indian War, with emphasis on the political, economic, and social developments that set the stage for the American Revolution. Prereq: His 1111 and 1112 or permission of instructor.
HIS 4412 THE AMERICAN REVOLUTION AND THE NEW NATION, 1763-1815 (3)
Ideas and institutions which led to American independence, the creation of the American union, and the development of a distinctive American culture in the early national period. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4413 ANTEBELLUM, CIVIL WAR AND RECONSTRUCTION, 1815-1877 (3)
Nationalism, Jacksonian democracy, territorial expansion, slavery and sectional strife, and the resulting Civil War and Reconstruction are included. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4414 EMERGENCE OF MODERN AMERICA, 1877-1919 (3)
Agricultural decline and crisis, industrialization and urbanization, Progressive reform era, World War I, and America as a world power are discussed. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4415 CONTEMPORARY AMERICA (3)
America in the Great Depression, World War II and the Cold War, Civil Rights Movement, Johnson’s Great Society, and America as a super power are topics which are included. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4420 HISTORY OF AMERICAN MINORITIES (3)
Study of selected ethnic, racial, cultural, social, and religious minorities, their treatment within and their contributions to American society, with special emphasis on classroom participation in topical discussions. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4423 U.S. FOREIGN POLICY TO 1920 (3)
A study of the factors, forces, and functions in the making of American foreign policy from the 1760’s to 1920. May be used for political science credit. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4430 CIVIL RIGHTS MOVEMENT (3)
Study of the origins of the Civil Rights Movement in the late nineteenth and twentieth centuries, beginnings of change in the 1930s and the World War II era, and the movement itself as defined by legal, political, and social conflict and change from the latter 1940s to the present. Prereq: His 4414 and 4415 or permission of instructor.

HIS 4432 RUSSIA TO 1861 (3)
A study of the history of the Eastern Slavic people from the prehistoric period, through the Kievan, Appanage, Muscovite, and Imperial periods from Peter the Great to the emancipation of the serfs in 1861. Prereq: His 1101 and 1102 or permission of instructor.

HIS 4433 RUSSIA SINCE 1861 (3)
The development of the revolutionary movements and tsarist reform attempts,
World War I, revolutions of 1917 and Bolshevik victory, establishment of the Stalinist state, World War II, Cold War, Soviet domestic problems, and the disintegration of the USSR. Prereq: His 1101 and 1102 or permission of instructor.

HIS 4434 MAJOR PERSONALITIES IN THE DEVELOPMENT OF CIVIL RIGHTS IN AMERICA (3)
Study of important civil rights personages and their writings from Frederick Douglas and other pre-Civil War activists and thinkers to the present. Prereq: His 4430.

HIS 4435 HISTORICAL GEOGRAPHY OF NORTH AMERICA (3)
An analysis of the physical and cultural factors in the development of North America from early European settlement to the present. May be used as geography credit. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4436 CIVIL RIGHTS IN ALABAMA (3)
Study of the history of civil rights in Alabama with the Reconstruction period and progressing through central events and developments up to the present. Course emphasis also will include legal developments and important personalities Prereq: His 4430.

HIS 4441 AMERICAN CONSTITUTIONAL DEVELOPMENT (3)
American constitutional system with emphasis upon its origin and evolution via amendments and Supreme Court decisions. Note: May be used for political science credit. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4445 HISTORY OF MODERN GERMANY (3)
Survey of Germanic peoples from the Revolutions of 1848 to the present, emphasizing unification, two world wars, postwar division, and reunification. Prereq: His 1101 and 1102 or permission of instructor.

HIS 4448 THE WESTWARD MOVEMENT (3)
Study of the history of American expansionism and westward movement and its impact on political, economic, and social institutions. Prereq: HIS 1111 and 1112 or permission of instructor.

HIS 4450 ENVIRONMENTAL HISTORY OF THE U.S. (3)
An introduction to environmental history of the United States from the 18th century to the late 20th century, emphasizing the post World War II period. The course will focus on the historical development of the science of ecology, the origins of environmental problems and solutions attempted by government and experts, as well as responses by grassroots activists over time. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4451 THE FAR EAST (3)
Study of the development and interaction of Chinese, Japanese, and Korean civilizations, the impact of Western cultures, twentieth century conflicts, resolutions and accommodations. Prereq: His 1101 and 1102 or permission of instructor.

HIS 4454 WESTERN THOUGHT SINCE THE 17TH CENTURY (3)
Principal ideas and political thinking from the Age of the Enlightenment to the present. Prereq: His 1101 and 1102 or permission of instructor.
* This is no longer accepted as political science.

HIS 4470 ORAL HISTORY (3)
An introduction to the methods and practice of oral history.

HIS 4471 LOCAL HISTORY (3)
An exploration of history, historiographic issues, and methodology of local history in the United States. Provides opportunities to become familiar with sources used in studying local history and to gain practical experience in conducting local history research.

HIS 4472 RECORDS MANAGEMENT (3)
An introduction to the scope of managing records in an organization and to the practical tasks associated with establishing a records management program in a business, office of government, or non-profit organization. Note: Credit in Archival Minor only.

HIS 4473 ARCHIVES PRACTICUM (3)
Provides students with an opportunity to apply their knowledge of archival and records management theory and practice. Students will be assigned to work on projects at an archival repository chosen in cooperation with instructor. May be repeated once as an elective. Note: Credit in Archival Minor only.

HIS 4481 METHODS AND MATERIALS FOR THE SECONDARY TEACHER (4)
A survey of teaching methods and materials appropriate for teaching in the content areas for grades 6-12. Topics addressed will include teacher evaluation in the public schools, collaboration with special education teacher evaluation in the public schools, collaboration with special education teachers, and lesson planning formats. In addition, teaching methods, selections organization and use of history/social science materials for grades 6-12 will be covered in detail. A professional laboratory experience is included in this course.

HIS 4482 HISPANIC AMERICAN BEGINNINGS (3)
Colonial systems of Spain and Portugal in the Americas from the 16th to 19th centuries, with emphasis on revolt and the establishment of the Latin American republics and religious and economic institutions. Prereq: His 1111 and 1112 or permission of instructor.
HIS 4483 LATIN AMERICAN STATES (3)
Cultural, social, political, and economic development in 19th and 20th centuries and international and U.S. relations. Prereq: His 1111 and 1112 or permission of instructor.

HIS 4490 SENIOR SEMINAR IN HISTORY (3)
The capstone course for history majors which synthesizes students’ course work through research, historiography, writing, speaking, and reading comprehension. Prereq: senior status at all institutions and HIS 3375 at TSUD.

HIS 4491-4492 GUIDED INDEPENDENT RESEARCH (1-3)
Additional information is indexed under “Guided Independent Research and Study.”

HIS 4493-4494 GUIDED INDEPENDENT STUDY (1-3)
Additional information is indexed under “Guided Independent Research and Study.”

HIS 4495 SELECTED TOPICS IN HISTORY (3)
Historical examination of a designed topic of special and/or current interest and importance, which is generally not covered in regularly offered courses by the department. Prereq: applicable survey courses and permission of instructor.

HIS 4496 SECONDARY EDUCATION INTERNSHIP- HISTORY (9)
Additional information is indexed under “The Professional Internship Program.”

HIS 4499 INTERNSHIP IN HISTORY (1-3)
Supervised work in an agency that can provide practical experience in the field of study. Prereq: Senior standing, at least 2.5 GPA, 12 hours in upper-division courses in the field, permission of supervising instructor and dean.

Humanities Minor

Expected Student Outcomes

All humanities minors will be able to demonstrate the following:

Familiarity with the artistic elements of fine color, form, texture, space, and the musical elements of melody, harmony, texture, and timbre.
An understanding of the various artistic movements in relation to their historical contexts.
An appreciation for the aesthetic value in human experience as expressed through the arts.

Required courses:
ART 3302 History of the Fine Arts (3)
CLA 2260 Classical Mythology (3)
CLA 2290 Classical Literature in English Translation (3)
PHI 2203 Introduction to Philosophy (3)
PHI 3301 History of Western Philosophy (3)
REL 2280 World Religions (3)

ART COURSE (ART)

ART 3302 History of the Arts (3)
An analysis of examples of art from diverse periods with an emphasis on trends and patterns and the interactions of art with various aspects of social, political, and intellectual developments.

PHILOSOPHY (PHI)

PHI 2201 Introduction to Political Philosophy (3)
Major Classical sources of political thought and the application of these sources to contemporary political issues.

PHI 2203 Introduction to Philosophy (3)
Brief history of philosophical ideas and the basics of Aristotelian logic.

PHI 2204 Ethics and the Modern World (3)
An introduction to basic ethics and to contemporary ethical issues.

PHI 3301 Western Philosophy (3)
Survey of philosophical ideas from the ancient Greeks through the 20th century.

RELIGION (REL)

REL 2280 World Religions (3)
Historical development and basic beliefs of the world’s major religions.

Mathematics

All students pursuing an undergraduate degree in Mathematics at Troy University must complete the following course of study:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies</td>
<td>60 semester hours</td>
</tr>
<tr>
<td>Mathematics Major</td>
<td>38 semester hours</td>
</tr>
<tr>
<td>Academic Minor</td>
<td>18 semester hours</td>
</tr>
<tr>
<td>Upper-level electives</td>
<td>6 semester hours</td>
</tr>
<tr>
<td>Total</td>
<td>122 semester hours</td>
</tr>
</tbody>
</table>
General Studies Requirements

Area I Requirements (6 SH)

- 6 SH English Composition
  -- Minimum “C” required for credit

Area II Requirements (13 SH)

- 4 SH selected from:
  -- 2 SH Art Appreciation
  -- 2 SH Music Appreciation
  -- 2 SH Intro to Drama
- 3 SH Speech
- 3 SH Survey of Literature
- 3 SH selected from:
  -- Foreign Language
  -- Literature
  -- Philosophy
  -- Ethics
  -- Mythology
  -- World Religion

Area III (11 SH or 12 SH)

- 4 SH Principles of Bio w/lab
- 4 SH Natural Science/w lab from:
  -- Chemistry
  -- Physics
  --Physical Science
  --Earth Science

- 3 or 4 SH selected from
  -- 3 SH MTH 1112 Pre-calculus Algebra
  -- 3 SH MTH 1114 Pre-calculus Trigonometry
  -- 4 SH MTH 1115 Pre-Calculus Algebra and Trigonometry
  -- 4 SH MTH 1125 Calculus I (Preferred)

Area IV Requirements (12 SH)

- 3 SH History
  -- NOTE: Students MUST complete 6 SH sequence in literature (Area II) or history (Area IV).

- 9 SH hrs electives from:
Area V (17-18 SH) requirements

-1 SH University Orientation Course (1)
-3 SH MTH 1114 Pre-calculus Trigonometry (if not taken in Area III)
-4 SH MTH 1125 Calculus I (4) (if not taken in Area III)
-3 SH MTH 2220 Computer Programming for Mathematics (3)
-6-7 SH Approved General Studies Electives

Mathematics Major (38 hours)

The following courses are required:

MTH 1126 Calculus II (4)
MTH 2227 Calculus III (4)
MTH 3311 Differential Equations (3)
MTH 3318 Introduction to Advanced Mathematics (3)
MTH 3331 Linear Algebra (3)
MTH 4424 Real Analysis I (3)
MTH 4441 Abstract Algebra I (3)

Choose one of the following:
MTH 4425 Real Analysis II (3)
MTH 4442 Abstract Algebra II (3)
OR
MTH 4451 Mathematical Statistics I (3) and MTH 4452 Mathematical Statistics II (3)

For student selecting MTH 4451 and MTH 4452, choose nine more hours of mathematics courses at the 3000 level and above (excluding MTH 4481). For students choosing MTH 4425 or MTH 4442, choose twelve hours of mathematics courses at the 3000 level and above (excluding MTH 4481).

Students seeking Alabama teacher certification must select MTH 3325 College Geometry and MTH 4451 Mathematical Statistics I. Those math majors who intend to enter graduate school in mathematics should select MTH 4425 Real Analysis II and MTH 4442 Abstract Algebra II. Those intending to work in industry or to complete graduate work in
economics should select MTH 4422 Numerical Analysis, MTH 4451 Mathematical Statistics I, and MTH 4452 Mathematical Statistics II.

Math Minor (18 hours)

MTH 1125 Calculus I (4)
MTH 1126 Calculus II (4)
MTH 2227 Calculus III (4)
MTH 3331 Linear Algebra (3)

Three more hours of math courses at the 3000 level and above other than those whose catalog description declares as not counting toward the major or minor.

**Undergraduate Mathematics Courses**

MTH 0096 Pre-Algebra (3)
Topics include operations with whole numbers, decimals, and fractions. Ratio, percent and equation solving will be emphasized. *This course is for institutional credit and will not be used in meeting degree requirements. This course will not substitute for any general studies requirement.*

MTH 1100 Fundamentals of Algebra (3)
Topics include integer and rational arithmetic, linear equations, inequalities, integer exponents, polynomials and factoring, rational expression. *Prerequisite: Placement or a grade of C or better in MTH 096. Note: This course is for institutional credit and will not be used in meeting degree requirements. This course will not substitute for any general studies requirement.*

MTH 1105 Intermediate Algebra (3)
Topics include real and complex numbers; polynomials and factoring; rational exponents; roots and radicals; linear equations and inequalities; quadratic equations; and graphing. *Prerequisite: Placement or a grade of C or better in MTH 1100. This course will not substitute for any general studies requirement.*

MTH 1110 Finite Mathematics (3)
Topics include a survey of logic, sets, counting, permutations, combinations, basic probability, an introduction to statistics, and matrices and their applications to Markov chains and decision theory. *Prerequisite: Appropriate score on mathematics placement test, advanced placement, or a grade of C or better in MTH 1105. Note: Credit will not count toward a major or minor in mathematics.*
MTH 1112  Pre-Calculus Algebra (3)
Topics include the algebra of functions, including polynomial, rational, exponential, and logarithmic functions. The course also contains systems of equations and inequalities, linear and quadratic equations and inequalities, graphs of polynomials, and the binomial theorem. 
Prerequisite: Appropriate score on mathematics placement test, advanced placement, or a grade of C or better in MTH 1105. Note: Credit will not count toward a major or minor in mathematics.

MTH 1114  Pre-Calculus Trigonometry (3)
This course covers trigonometric functions including definitions, identities, and trigonometric equations, applications as well as properties and graphs of trigonometric functions and their inverses. Also include are the law of sines, the law of cosines, polar coordinates, vectors, and conic sections. Prerequisite: MTH 1112 with a grade of C or better or advanced placement. Note: Credit will not count toward a major or minor in mathematics.

MTH 1115  Pre-Calculus Algebra and Trigonometry (4)
The course covers the algebra of functions, systems of equations and inequalities, quadratic inequalities, and the conic sections. It also includes the study of trigonometric and inverse trigonometric functions, trigonometric equations, vectors, complex numbers, polar coordinates, and DeMoivre’s Theorem. Prerequisite: MTH 1105 with a grade of C or better, appropriate score on the mathematics placement test, or advanced placement. Note: Credit will not count toward a major or minor in mathematics.

MTH 1125  Calculus I (4)
Topics include limits of functions, derivatives of algebraic, trigonometric, exponential and logarithmic functions and their inverses and the definite integral and its application to area problems. Applications of the derivative are covered in detail including approximations of error using differentials, maximum and minimum problems, and curve sketching using calculus. Prerequisite: MTH 1115 or 1114, or advanced placement.

MTH 1126  Calculus II (4)
Topics include vectors in the plane and in space, line and planes in space, applications of integration (such as volume, arc, length, work, and average value), techniques of integrations, indeterminate forms, infinite series, polar coordinates, and parametric equations. Prerequisite: a grade of C or better in MTH 1125 or advanced placement.
MTH 2201  Business Calculus (3)
An introduction to the basic ideas and techniques of differential and
integral calculus, especially as they relate to problems involving maximum
and minimum values of functions and marginal analysis. **Prerequisite:**
MTH 1112 or 1115 with a grade of C or better, or advanced placement.
**Note:** Credit will not count toward a major or minor in mathematics.

MTH 2210  Applied Statistics (3)
Applications of statistical techniques, such as experimental design,
hypothesis testing, parametric and non-parametric tests along with
descriptive statistics, in contemporary research. This course will focus on
the commonly used parametric statistical tests, their non-parametric
counterparts, and the conditions under which each test is appropriate or
inappropriate. **Prerequisite:** a grade of C or better in MTH 1112. **Note:**
Credit will not count toward a major or minor in mathematics.

MTH 2215  Applied Discrete Mathematics (3)
Discrete mathematics with a computer science orientation is presented.
Topics include sets, relations, logic, algorithms, and recursion. **Prereq-
usite:** a grade of C or better in MTH 1112. **Note:** Credit will not
count toward a major or minor in mathematics.

MTH 2220  Computer Programming for Mathematics (3)
Structured programming of a mathematical nature, arithmetic
computations, algorithm design and control structures, functions and
subroutines, intrinsic functions, array processing. **Prerequisite:** MTH
1126

MTH 2227  Calculus III (4)
Topics include vector functions, multi-variable functions, partial
derivatives and their applications, quadric surfaces, multiple integrations,
and vector calculus, including Green’s theorem, curl, divergence, surface
integrals, and Stoke’s theorem. **Prerequisite:** MTH 1126 or advanced
placement.

MTH 2251  Mathematical Concepts for K-6 Teachers I (3)
An examination of some of the major topics encountered in the teaching of
elementary mathematics with emphasis on number theory, order of
operations, definitions of and operations with rational and irrational
numbers, estimation, definitions and algorithms of the four operations,
umeration systems, bases other than ten, and problem solving.
Prerequisite: MTH 1110 or 1112. Note: Credit will not count toward any major or minor in mathematics.

MTH 2252  Mathematical Concepts for K-6 Teachers II (3)
An examination of some of the major topics encountered in the teaching of elementary school geometry with emphasis on measurement, area, volume, congruence, polygons, circles, constructions, motion geometry, polyhedra, and similarity. Prerequisite: MTH 1110 or 1112. Note: Credit will not count toward any major or minor in mathematics.

MTH 3300  Selected Topics (3)
Examination of a designated topic of special and/or current interest and importance, which is generally not covered in regularly offered courses in the mathematics curriculum.

MTH 3311  Differential Equations (3)
An introduction to ordinary differential equations. Topics include first order methods, linear equations, the Laplace transforms, systems of equations, and applications. Prerequisites: MTH 2227.

MTH 3318  Introduction to Advanced Mathematics (3)
Topics include set theory, equivalence relations and partitions, logic, number systems, functions, and proof writing techniques. Prerequisites: MTH 1126 or permission of instructor.

MTH 3325  College Geometry (3)
Axiomatic systems; incidence and separation properties of planes and space; metric and synthetic approaches; geometric inequalities; parallel postulate; area-theory; circles in a plane; models for hyperbolic and elliptic geometries; and constructions with a protractor and compass. Prerequisites: MTH 3318 or permission of instructor.

MTH 3331  Linear Algebra (3)
Matrices, systems of equations, determinants, eigenvalues and eigenvectors. Prerequisites: MTH 1126 or permission of instructor.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 4412</td>
<td>Discrete Mathematics (3)</td>
<td>Topics can include: counting, graph theory, partitions, principle of inclusion and exclusion, finite geometries, applications of group theory, recurrence relations, generating functions. Prerequisites: MTH 2227 and 3318.</td>
<td></td>
</tr>
<tr>
<td>MTH 4422</td>
<td>Numerical Analysis (3)</td>
<td>Topics include finite differences, interpolation, numerical integration and differentiation, solutions of equations of one variable, linear systems, and numerical solutions of ordinary differential equations. Prerequisites: MTH 2227 and 3331, or permission of instructor.</td>
<td></td>
</tr>
<tr>
<td>MTH 4424</td>
<td>Real Analysis I (3)</td>
<td>The real number system, completeness, limits, continuity, sequences, differentiation, and the Riemann integral.</td>
<td>MTH 2227 and 3318.</td>
</tr>
<tr>
<td>MTH 4425</td>
<td>Real Analysis II (3)</td>
<td>Sequences and series of functions, series, and a continuation of the integral to include the Fundamental Theorem of Calculus.</td>
<td>MTH 4424.</td>
</tr>
<tr>
<td>MTH 4426</td>
<td>Complex Analysis (3)</td>
<td>Complex numbers, elementary functions and their mappings, complex limits and power series, analytic functions, integrals, contour integral, and Cauchy integral formula. Prerequisites: MTH 2227 and 3318 or permission of instructor.</td>
<td></td>
</tr>
<tr>
<td>MTH 4436</td>
<td>Number Theory (3)</td>
<td>Divisibility, congruencies, prime numbers, Fermat’s theorem, Diophantine equations, number theoretic functions.</td>
<td>MTH 2227 and 3318.</td>
</tr>
<tr>
<td>MTH 4441</td>
<td>Abstract Algebra I (3)</td>
<td>Properties of the integers, modular arithmetic. Elementary theory of groups, finite groups, subgroups, cyclic groups, permutation groups. Group isomorphisms and homomorphisms. Prerequisites: MTH 2227, 3318, and 3331 or permission of instructor.</td>
<td></td>
</tr>
<tr>
<td>MTH 4442</td>
<td>Abstract Algebra II (3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Prerequisite: MTH 4441.

MTH 4451 Mathematical Statistics I (3)
Probability theory, sample spaces, random variables, mutual exclusion, independence, conditional probability, permutations and combinations, common discrete and continuous distributions, expected value, mean, variance, multivariate distributions, covariance, Central Limit Theorem.

Prerequisite: MTH 2227 or permission of instructor.

MTH 4452 Mathematical Statistics II (3)
Fundamentals of the theory of statistics, the Central Limit Theorem, point estimation, sufficiency, consistency, hypothesis testing, sampling distributions, confidence intervals, linear regression models, interpretation of experimental results, Bayesian Estimation.

Prerequisite: MTH 4451.

MTH 4460 Topology (3)
An introduction to metric and topological spaces and associated topics, separation axioms, compactness, and connectedness.

Prerequisite: MTH 2227 and MTH 3318.

MTH 4481 Methods and Materials for the Secondary Teacher (4)
A survey of teaching methods and materials appropriate for teaching in the content areas for grades 6-12. Topics addressed will include teacher evaluation in the public schools, collaboration with special education teachers, and lesson planning formats. In addition, teaching methods, selections organization and use of mathematics materials for grades 6-12 will be covered in detail. A professional laboratory experience is included in this course.

MTH 4491/4492 Guided Independent Research (3)
Additional information is indexed under “Guided Independent Research and Study.”

MTH 4493/4494 Guided Independent Study (3)
Additional information is indexed under “Guided Independent Research and Study.”
DEPARTMENT OF MILITARY SCIENCE AND LEADERSHIP (MSL)
ARMY RESERVE OFFICER TRAINING CORPS (ARMY ROTC)

Faculty: MAJ Ken Coon, chair; Captain Judson Gillett, assistant professor; Sergeant First Class Luis Lopez, instructor.

The Military Science and Leadership (Army ROTC) course of study is designed to augment students’ normal academic programs to qualify them for an officer’s commission in the United States Army, Army Reserves, or Army National Guard. Students who successfully complete the Army ROTC program are commissioned Second Lieutenants when they graduate.

The curriculum is divided into two course levels:

A. Basic Course (Basic Leadership) consists of freshman and sophomore level courses that are offered to all students as free elective credit with no military obligation. The basic course or equivalent is required to continue into the Advanced Course.

B. Advanced Course (Officer Development Course) consists of Junior and Senior level courses that are only available to juniors, seniors and graduate students that have met the qualifications of the Basic Course or equivalent.

Scholarships: Army ROTC offers two, three, and four year scholarships on a merit based system to qualified students. For more information on the requirements to qualify for scholarships or admission to the Advanced Course please contact Captain Judson Gillett at 670-5623 or email Armyrotc@troyst.edu.


MILITARY SCIENCE MINOR (16 Hours)

Required Courses (16 hours):
MSL 3301 (3) Leadership and Problem Solving
MSL 3302 (3) Leadership and Ethics
MSL 3304a (1) Leadership Laboratory
MSL 3304b (1) Leadership Laboratory
MSL 4401 (3) Leadership and Management
MSL 4402 (3) Officership
MSL 4404a (1) Leadership Laboratory
MSL 4404b (1) Leadership Laboratory

Military Science and Leadership Courses (MSL)

BASIC COURSE:
1101 Foundations of Officership (1)
This course features an introduction to life in the U.S. Army. Topics include leadership; the unique duties and responsibilities of officers; the organization and role of the Army; basic life skills pertaining to fitness and communication; and an analysis of Army values and expected ethical behavior.  
*Co requisite: MS 1104a.*

1102 Basic Leadership (1)
This course provides students with a basic knowledge of common military skills and presents the fundamental leadership concepts and doctrine of the U.S. Army. Topics include the practice of basic skills that underlie effective problem solving; application of active listening and feedback skills; examination of factors that influence leader and group effectiveness; and an examination of the officer experience.  
*Co requisite: MS 1104b.*

1104a Leadership Lab (1)
Leadership lab is required for Army ROTC students. The student will receive training in drill and ceremonies, field craft, individual movement techniques, squad tactics, map reading and land navigation, first aid, and use and maintenance of the M16 Rifle.

1104b Leadership Lab (1)
Leadership lab is required for Army ROTC students. The student will receive training in drill and ceremonies, field craft, individual movement techniques, squad tactics, map reading and land navigation, first aid, and use and maintenance of the M16 Rifle.

2201 Individual Leadership Studies (2)
This course develops the knowledge of self; self-confidence and individual leadership skills as well as develops problem solving and critical thinking skills and the application of communication, feedback, and conflict resolution. Areas to be trained include personal development, goal setting, communication, problem solving and decision-making, leadership, teamwork, the group process, stress management, and physical fitness.  
*Co requisite: MS 2204a.*

2202 Leadership and Teamwork (2)
This course focuses on self-development guided by knowledge of self and group processes by focusing on challenging current beliefs, knowledge and skills.  
*Co requisite: MS 2204b.*

2204a Leadership Lab (1)
Leadership lab is required for Army ROTC students. The students will receive training in drill, physical training, rappelling, water survival, tactics, marksmanship, night operations, and land navigation.
2204b Leadership Lab (1)
Leadership lab is required for Army ROTC students. The students will receive training in drill, physical training, rappelling, water survival, tactics, marksmanship, night operations, and land navigation.

ADVANCED COURSE:

3301 Leadership and Problem Solving (3)
This course examines the basic skills that underlie effective problem solving by analyzing the role officers played in the transition of the Army from Vietnam to the 21st Century, analysis of military missions and the planning of military operations, the features and execution of the Leadership Development Program, and the execution of squad battle drills. *Co requisite: 3304a.*

3302 Leadership and Ethics (3)
This course probes leader responsibilities that foster an ethical command climate by developing cadet leadership competencies and applying principles and techniques of effective written and oral communication. Students are prepared for success at the ROTC National Advanced Leadership Course. *Co requisite: MS3304b.*

3304a Leadership Lab (1)
Leadership Lab is required for all Army ROTC students. The student will receive training in troop leading procedures, mission planning, squad tactics, land navigation, individual movement techniques, water survival and rappelling.

3304b Leadership Lab (1)
Leadership Lab is required for all Army ROTC students. The student will receive training in troop leading procedures, mission planning, squad tactics, land navigation, individual movement techniques, water survival and rappelling.

4401 Leadership and Management (3)
This course builds on the experience gained at the National Advanced Leadership Course in order to solve organizational and staff problems and discusses staff organization and functions, analysis of counseling responsibilities and methods, the principles of subordinate motivation and organizational change. Students will apply leadership and problem solving principles to a case study and or simulation. *Co requisite: MS 4404a.*

4402 Officership (3)
This course is designed to explore topics relevant to Second Lieutenants entering the U.S. Army and focuses on the legal aspects of decision making leadership, analyzing Army organization from the tactical to the strategic level, assessing administrative and logistical functions, performance of platoon
leader actions, and an examination of leader responsibilities that foster an ethical command climate. *Co requisite: MS 4404b.*

**4404a Leadership Lab (1)**
Leadership lab is required for all Army ROTC students. The student will receive training in troop leading procedures, mission planning, squad tactics, land navigation, individual movement techniques, water survival and rappelling.

**4404b Leadership Lab (1)**
Leadership lab is required for all Army ROTC students. The student will receive training in troop leading procedures, mission planning, squad tactics, land navigation, individual movement techniques, water survival and rappelling.

**Physical Science Minor**

**Expected Student Outcomes**

Upon completion of the physical science minor, the student will demonstrate:

- An understanding of and an ability to apply the scientific method in chemistry and physics.
- The ability to carry out a variety of laboratory operations in chemistry and physics.
- The ability to apply prior knowledge to the understanding and solving of problems unlike those previously encountered.
- The ability to express clearly and rigorously scientific concepts and tenets both verbally and in writing.

To complete the requirements for a minor in physical science, students must take 19-20 hours.

**Required Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>SH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 1142 General Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHM L142 General Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHM 1143 General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHM L143 General Chemistry II Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

Select one series:

<table>
<thead>
<tr>
<th>Course</th>
<th>SH</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 2252 General Physics I</td>
<td>3</td>
</tr>
<tr>
<td>PHY L252 General Physics I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHY 2253 General Physics II</td>
<td>3</td>
</tr>
<tr>
<td>PHY L253 General Physics II Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

OR
PHY 2262 Physics with Calculus I  (3 SH)
PHY L262 Physics with Calculus I Laboratory (1 SH)
PHY 2263 Physics with Calculus II  (3 SH)
PHY L263 Physics with Calculus II (1 SH)
Select an upper-level course in chemistry or physics  (3-4 SH)

Physics Minor (20 hours)

Select One Series

PHY 2252 Gen. Physics I  3
PHY L252 Gen. Physics Lab  1

PHY 2253 Gen. Physics II  3
PHY L253 Gen. Physics Lab II  1

Or

PHY 2262 Physics I Calculus  3
PHY L262 Physics I with Calculus Lab  1
PHY 2263 Physics II with Calculus  3
PHY L263 Physics II with Calculus Lab  1

Take each of the following

PHY 3310 Modern Physics  3
PHY L310 Modern Physics Lab  1
PHY 4420 Mechanics  3
PHY L420 Mechanics Lab  1

Select 4 hours of adviser approved, upper level physics courses.

Physics Course Descriptions (PHY)

2252 General Physics I (3)


L252 General Physics I Laboratory (1)
Laboratory work emphasizes basic principles of mechanics and thermodynamics, the use of measuring instruments, and the interpretation of data. *Co-requisite: PHY 2252.*

2253 **General Physics II (3)**


L253 **General Physics II Laboratory (1)**

Laboratory work emphasized basic principles of electricity, magnetism and optics, the use of measuring instruments, and the interpretation of data. *Co-requisite: PHY 2253.*

2262 **Physics I with Calculus (3)**


L262 **Physics I with Calculus Laboratory (1)**

Laboratory work emphasizes basic principles of thermodynamics and mechanics, the use of measuring instruments, and the interpretation of data. *Co-requisite: PHY 2262.*

2263 **Physics II with Calculus (3)**


L263 **Physics II with Calculus Laboratory (1)**

Laboratory work emphasizes basic principles of electricity, magnetism and optics, the use of measuring instruments, and the interpretation of data. *Co-requisite: PHY 2263.*

4410 **Modern Physics (3)**

L410  Modern Physics Laboratory (1)

4420  Mechanics (3)
    Kinematics and dynamics of particles and systems of particles. Pre-requisite: MTH 2227, and PHY 2253, L253 OR PHY 2263, L263.

4430  Electromagnetic Fields (3)
    Vector fields, dielectric and magnetic media, fields in conductors, electric and magnetic circuit elements. Maxwell's equations and boundary condition problems in one, two and three dimensions. Pre-requisite: MTH 2227, and PHY 2253, L253 OR PHY 2263, L263.

4459  Optics (3)

L459  Optics Laboratory (1)
    Selected experiments in geometric and physical optics. Laboratory work emphasizes the basic principles of optics, the use of measuring instruments, and the interpretation of data. Co-requisite: PHY 4459.

4491-2 Guided Independent Research (1-4)
    A physics research project under the direction of a faculty member. The project must culminate in a written report with the results reported at a Department seminar. Pre-requisite: Senior standing or permission of Department Chair.

4493-4 Guided Independent Study (1-4)
    Independent study for advanced students under the direction of a faculty member. Pre-requisite: Permission of Department Chair.

4495  Topics in Physics (3)
    Focus on a topic of timely nature and/or special interest. Pre-requisites: PHY 2253 and L253 OR PHY 2263 and L263.
Political science involves the examination of power and its influence on human affairs. It is the study of the formulation, administration and consequences of public policy and government. Courses in political science are designed to foster critical thinking about politics which in turn promotes active and informed citizenship. In addition, our courses assist students in interpreting the sometimes confusing dynamics of world politics and international relations.

The baccalaureate curriculum in political science at Troy State University is a rigorous academic program that provides both a general foundation for the study of politics and focused study in one of three major sub-fields:

- American Politics
- International Politics
- Public Administration

The purpose of the undergraduate program in political science is to provide knowledge and skills necessary to prepare individuals for: (1) entry level leadership positions in government service, public management, or the military; (2) a sufficient level of academic skills necessary to gain entry into and succeed in advanced, graduate study in the field of political science or post-graduate professional education, such as law school; and (3) work in positions in the private sector, such as journalism, communication, and business where knowledge of politics, public policy or governmental relations is of particular importance.

Requirements for the Political Science Major

All students pursuing an undergraduate degree in Political Science at Troy University must complete the following course of study:

**General Studies:** 60 semester hours  
**Political Science Major:** 36 semester hours  
**Academic Minor:** 18 semester hours  
**Upper-level Electives:** 6 semester hours

Total: 120 semester hours

**GENERAL STUDIES REQUIREMENTS FOR THE POLITICAL SCIENCE MAJOR**

**AREA I**  
6 SH English Composition

**AREA II**  
4 SH selected from:  
-- 2 SH Art Appreciation  
-- 2 SH Music Appreciation
-- 2 SH Introduction to Drama
3 SH Speech
3 SH Survey of Literature
3 SH selected from:
-- Foreign Language
-- Literature
-- Philosophy
-- Ethics
-- Mythology
-- World Religion

AREA III
4 SH Principles of Biology w/lab
4 SH Natural Science/w lab from:
-- Chemistry
-- Physics
-- Physical Science
-- Earth Science
3 SH Mathematics

AREA IV
3 SH History
NOTE: Students MUST complete a 6 SH sequence in literature (Area II) or history (Area IV).
NOTE: 6 SH from Area II/Area IV must be global/international in scope.

9 SH selected from:
-- Anthropology
-- World Geography
-- General Psychology
-- Developmental Psychology
-- History
-- Micro Economics
-- Macro Economics
-- Sociology

AREA V
3 SH Computer Applications Course
1 SH University Orientation Course
3 SH American National Government or Honors American National Government
3 SH World Politics
8 SH Electives approved by your advisor

POLITICAL SCIENCE MAJOR (36 hours)
All political science majors must take the following core courses designed to introduce the student to the theories, principles, methods, processes and ideologies of political science:

- POL 3300 – Foundations of Political Science
- POL 3330 – Introduction to Political Theory

In addition, the following General Studies course MUST be taken by all political science majors. Note: Credit hours for POL 2240 – American National Government, POL 2241 – Honors American National Government or POL 2XXX – World Politics do not count toward the total hours necessary for the undergraduate major or minor in political science.

- POL 2241 – American National Government
  OR
- POL 2240 – Honors American National Government

All political science majors must select one of the following concentrations: American Politics, International Politics, or Public Administration.

- **AMERICAN POLITICS CONCENTRATION**

  Choose 15 hours from the following:
  - POL 3340 – U.S. Government – Executive Branch
  - POL 3341 – U.S. Government – Legislative Branch
  - POL 3343 – American Political Processes
  - POL 3XXX – State and Local Politics
  - POL 4422 – Public Policy Making
  - POL 4423 – American Foreign Policy to 1920
  - POL 4424 – Contemporary American Foreign Policy
  - POL 4420 – Constitutional Law
  - POL 4XXX – Intergovernmental Relations

  Select an additional 15 hours of upper level (3000-4000) political science courses, as approved by your faculty adviser.

- **INTERNATIONAL POLITICS CONCENTRATION**

  All students concentrating in International Politics MUST take the following core courses:

  - POL 3351 -- International Relations
  - POL 4410 -- International Political Economy
  - POL 4433 -- Comparative Government
Choose 6 hours from the following:

- POL 4415 -- International Conflict
- POL 4423 – American Foreign Policy to 1920
- POL 4424 -- Contemporary American Foreign Policy
- POL 4432 -- Comparative Public Policy
- POL 4445 -- Inter-American Relations
- POL 4450 -- Latin American Politics
- POL 4452 -- International Law
- POL 4460 -- Intercultural Relations
- POL 4465 -- Politics of the Developing World
- POL 4466 -- Middle Eastern Politics
- POL 4470 -- European Politics
- POL 44XX – Political Violence and Terrorism

Select an additional 15 hours of upper level (3000-4000) political science courses, as approved by your faculty adviser.

- **PUBLIC ADMINISTRATION CONCENTRATION**

Choose 15 hours from the following:

- POL 3XXX – State and Local Politics
- POL 4421 – Principles of Public Administration
- POL 4422 – Public Policy Making
- POL 4451 – Public Personnel Administration
- POL 4432 – Comparative Public Policy
- POL 4453 – Bureaucratic Politics
- POL 44XX – Intergovernmental Relations
- POL 44XX – Administrative Law

Select an additional 15 hours of upper level (3000-4000) political science courses, as approved by your faculty adviser.

**POLITICAL SCIENCE MINOR**

Students that choose to minor in political science MUST take the following courses:

- POL 3300 – Foundations of Political Science
- POL 3330 – Introduction to Political Theory

Plus, select four additional upper division (3000-4000) courses, as approved by their faculty adviser in their major field.
Political Science Courses (POL)

2240 – Honors American National Government (3)
This course explores the stable political values that frame the US Constitution and have guided our societal environment for two hundred years. The course is intended for superior students and political science majors.

2241 – American National Government (3)
A study of the Constitution, federalism, the Presidency, Congress, the courts, and politics on the national level.

2XXX – World Politics (3)
An investigation of the development, nature, and process of political actions across national boundaries in the global system. Topics include international security, comparative government, international political economy, international organizations, and new global issues.

3300 – Foundations of Political Science (3)
An introduction to the discipline of political science, this course offers an overview of the sub-fields and methods within the discipline.

3315 – The Vietnam War (3)
A study of the period 1946 to 1975 in Indochina with emphasis on the American involvement during and after the French colonial period, escalating involvement of the Kennedy and Johnson administrations, and Vietnamization and withdrawal under President Nixon. Prerequisite: His 1111 and 1112.

3330 – Political Theory (3)
An examination of selected advanced sources of classical and modern political theory. Theoretical perspectives, which are prominent in contemporary political science are investigated.

3340 – U.S. Government – Executive Branch (3)

3341 – U.S. Government – Legislative Branch (3)
An analysis of the structure and dynamics of the U.S. Congress in the context of its relationships to the Constitution, the presidency, the judiciary, political processes and subordinate levels of government.

3342 – U.S. Government – Judicial Branch (3)
An analysis of the American federal judiciary in the context of its relationships to the Constitution, American political processes, the legislative and executive branches, state governments, and public opinion.
3343 – American Political Processes (3)
This course examines key topics in U.S. politics, specifically looking at national problems, actors and proposed solutions.

3351 – International Relations (3)
This course provides a comprehensive investigation of thinking about the relationship of both state and non-state actors in the international arena. It offers a framework for the further analysis of the discipline of International Relations including: the principal schools of IR theory; the historical development of the contemporary international system; foreign policies of states, the search for state security, and the economic relationships between states within a global political context.

3360 – Contemporary Political Thought (3)
This course examines recent areas of research in political theory, including current issues of debate on the state, democratic theory, liberalism, conservatism, and feminism.

3XXX – State and Local Politics (3)
An investigation of political processes and organization at the state and local level in the United States.

44XX – Intergovernmental Relations (3)
The administrative, fiscal, and legal factors that govern relations between the various government entities in the United States. The focus is on the political conflicts that occur and the strategies for resolution.

44XX – Administrative Law (3)
This course examines the legal environment in which government agencies function, including the powers and procedures that control administrative discretion, rule-making, investigations, prosecuting, negotiating, and settling; constitutional law, statutory law, common law, and agency-made law; the liability of governments and their officers; and selected court cases and decisions.

44XX – Terrorism and Political Violence (3)
This course is designed to introduce students to the origins and significance of contemporary political violence with an emphasis on the phenomenon of terrorism. It employs an interdisciplinary, case-study approach.

44XX – Politics of Southeast Asia (3)
This course involves the study of politics in the Philippines, Indonesia, Vietnam, Laos, Kampuchea, Malaysia, Singapore, Brunei, Myanmar, and Thailand. It investigates the historical and cultural factors contributing to their political relationships within the region and internationally.
4402 – Political Geography (3)
An analysis of the reciprocal effects of geography and political organization on the behavior of states, including boundaries, national resources, spatial strategies, and maritime power.

4410 – International Political Economy (3)
An examination of the interrelationships between international politics and economics; states and markets, trade, foreign investment, international monetary affairs, foreign aid, state development strategies, and globalization.

4415 – International Conflict (3)
This course provides a detailed examination of patterns of international conflict and methods employed to manage them; bases, emergence, escalation, de-escalation, negotiation, mediation, termination, and consequences. Specific episodes of international conflict will be investigated.

4420 – Constitutional Law (3)
A survey of the legal, political, and methodological problems in constitutional law.

4421 – Principles of Public Administration (3)
An introduction to the historical, institutional, and political context of the profession; current trends and issues; and the role of public administration in the larger governmental system.

4422 – Public Policy Making (3)
An introduction to the processes by which American public policy is formulated, implemented, and evaluated and to the roles of policy analysts in solving various public problems.

4423 – American Foreign Policy to 1920 (3)
A study of the factors, forces and functions in the making of American foreign policy from the 1760s to the end of World War I.

4424 – Contemporary American Foreign Policy (3)
This course examines the foreign policy processes of the United States; historical traditions, political institutions, economic and military capabilities, the Congress, the Presidency, interest groups, the media, and public opinion.

4432 – Comparative Public Policy (3)
This course examines the process of policy making in a cross-comparative framework that illustrates how different nation states, both in the developed and the developing worlds, formulate and implement public policy.

4433 – Comparative Government (3)
A comparative analysis of state governments in the world with an emphasis upon political cultures, governmental institutions and political processes that lead to differences and international tensions.

4440 – Political Sociology (3)
An examination of the inter-relationship of social forces and politics, with an emphasis on institutions, political movements, sources and distribution of power, and public policy.

4445 – Inter-American Relations (3)
This course examines the relationship between the United States and the remainder of the Western Hemisphere, with an emphasis on historical and contemporary Latin American relations.

4450 – Latin American Politics (3)
An introduction to the social and political institutions of Latin America

4451 – Public Personnel Administration (3)
A survey of the basic principles and functions of personnel administration in the public service and of the current strategies for managing recruitment, placement, salary and benefit strategies, training, retirement, and other personnel functions.

4452 – International Law (3)
This course examines the sources and development of international law from a historical, political, jurisprudential, and philosophical standpoint. It will include a comprehensive investigation of state sovereignty, jurisdiction, the role of the United Nations, the regulation of the use of force in world affairs, and international human rights law.

4453 – Bureaucratic Politics (3)
A study of the theories of organizations and their structures as they effect the policymaking environment, examining goals, resources, effectiveness, equilibrium, and change relating to organizations and their relationship to administration.

4460 – Intercultural Relations (3)
An analysis of the influence of culture on interstate relations including theories, concepts, and applications.

4465 – Politics of the Developing World (3)
This course examines the political and economic challenges faced by developing states. Theories and models of development will be analyzed in a variety of ways.

4466 – Middle Eastern Politics (3)
An introduction to the social and political institutions of the contemporary Middle East
4470 – European Politics (3)
An introduction to the social and political institutions of contemporary Europe.

4490 – Internship in Political Science (1-3)
Supervised work in an agency that can provide practical experience in the field of study. Prerequisite: senior standing and approval of supervising instructor and the department chair.

4491-- 4492 – Guided Independent Research (1-3 credit hours each)
Additional information is indexed under “Guided Independent Research and Study.”

4493 – 4494 – Guided Independent Study (1-3 credit hours each)
Additional information is indexed under “Guided Independent Research and Study”

4495 – Selected Topics in Political Science (3)
Examines selected topics of a timely nature and/or special interest within the field of political science.

SOCIAL SCIENCE MAJOR (36 Hours)

The interdisciplinary approach taken for the social science major prepares students for professional development and/or graduate study in a variety of social science subdisciplines. Social science core courses focus on the fundamentals of social science theory, statistical techniques, and scientific research methodologies. Students majoring in social science also select an academic concentration from the subdisciplines of anthropology, general social science, geography, leadership, or sociology. The social science/education dual major is designed to meet State of Alabama teacher certification requirements.

All students pursuing an undergraduate degree in Social Science at Troy University must complete the following course of study:

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Studies</td>
<td>60</td>
</tr>
<tr>
<td>Social Science Major</td>
<td>36</td>
</tr>
<tr>
<td>Academic Minor</td>
<td>18</td>
</tr>
<tr>
<td>Upper-level Electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
</tr>
</tbody>
</table>

Area I (6 SH)

6 SH English Composition
Area II (13 SH)

4 SH selected from:
   2 SH Art Appreciation
   2 SH Music Appreciation
   2 SH Intro to Drama

3 SH Speech
3 SH Survey of Literature
3 SH selected from:
   Foreign Language
   Literature
   Philosophy
   Ethics
   Mythology
   World Religion

AREA III (11 SH)

4 SH Principles of Biography w/lab
4 SH Natural Science w/lab from:
   Chemistry
   Physics
   Physical Science
   Earth Science

3 SH Math, finite or higher

AREA IV (12 SH)

3 SH History
NOTE: Students MUST complete a 6 SH sequence in literature (Area II) or history (Area IV).
NOTE: 6 SH from Area II/Area IV must be global/international in scope.

9 SH electives from:
   Anthropology
   World Geography
   General Psychology
   Developmental Psychology
   History
   Micro-Economics
   Macro-Economics
   Sociology
   World Politics
   US Government
NOTE: Social Science majors with concentrations in Anthropology, Geography, or Sociology should take Area IV electives appropriate for their concentration.

AREA V (18-22 SH)

3 SH Computer Application Course
1 SH University Orientation Course
14 SH Approved General Studies Electives

Core Requirements for the Social Science Major

SS  3375 (3)  Introduction to Social Scientific Inquiry
SS  3376 (3)  Application of Social Scientific Inquiry
SS  4498 (3)  Social Science Theory
SS  4499 (3)  Senior Seminar

Select 1 concentration below (24 hours unless otherwise specified):

Concentration 1: Anthropology

ANT  3310 (3)  Cultural Anthropology
ANT  3311 (3)  Physical Anthropology

Select at least 18 hours of additional 3000/4000 level anthropology courses as approved by your faculty adviser.

Concentration 2: General Social Science

Select at least 24 hours of additional 3000/4000 level courses from anthropology, economics, geography, history, political science, psychology or sociology (6 hours may be used from ECO 2251, ECO 2252, GEO 2210, ANT 2200, POL #### (World Politics), or SOC 2230) in at least 3 disciplines.

Concentration 3: Geography

GEO  3300 (3)  Principles of Physical Geography
GEO  3301 (3)  Principles of Cultural Geography

Select at least 18 hours of additional 3000/4000 level courses as approved by your faculty advisor:

Concentration 4: Leadership

LDR  1100 (3)  Introduction to Leadership
LDR  4400 (3)  Leadership Seminar*
*Requires approval of the Director of the Institute of Leadership Development

Select an additional 18 hours:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS 3312</td>
<td>Air Force Leadership Studies I</td>
<td>3</td>
</tr>
<tr>
<td>AS 3313</td>
<td>Air Force Leadership Studies II</td>
<td>3</td>
</tr>
<tr>
<td>HIS 4415</td>
<td>Contemporary America</td>
<td>3</td>
</tr>
<tr>
<td>MGT 3371</td>
<td>Principles of Management and Organizational Behavior</td>
<td>3</td>
</tr>
<tr>
<td>MGT 3375</td>
<td>Human Resources Management</td>
<td>3</td>
</tr>
<tr>
<td>MS 2202</td>
<td>Leadership, Management and Tactics</td>
<td>2</td>
</tr>
<tr>
<td>MS 2204</td>
<td>Leadership Lab</td>
<td>1</td>
</tr>
<tr>
<td>PSY 4410</td>
<td>Business and Industrial Psychology</td>
<td>3</td>
</tr>
<tr>
<td>POL 3321</td>
<td>Principles of Public Administration</td>
<td>3</td>
</tr>
<tr>
<td>POL 3322</td>
<td>Public Policy Making</td>
<td>3</td>
</tr>
<tr>
<td>POL 3351</td>
<td>Foundations of International Relations</td>
<td>3</td>
</tr>
<tr>
<td>SPH 3345</td>
<td>Group Discussion and Leadership</td>
<td>3</td>
</tr>
<tr>
<td>SOC 3301</td>
<td>Social Change in the Information Age</td>
<td>3</td>
</tr>
<tr>
<td>SOC 3302</td>
<td>Sociology of Small Groups</td>
<td>3</td>
</tr>
</tbody>
</table>

Concentration 5: Sociology

Select at least 24 hours of additional 3000/4000 level sociology courses as approved by your faculty adviser.

SOCIAL SCIENCE EDUCATION MAJOR

Students seeking Alabama teacher certification in social science should complete the social science major with a general social science concentration and select “education” as a second major. Students should consult with their education advisers concerning all certification requirements and with their discipline academic adviser for requirements in the major.

ANTHROPOLOGY MINOR (18 Hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT 3310</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ANT 3311</td>
<td>Physical Anthropology</td>
<td>3</td>
</tr>
</tbody>
</table>

Select at least 12 hours of additional 3000/4000 level anthropology courses as approved by your faculty adviser.

GEOGRAPHY MINOR (18 Hours)

Expected Student Outcomes

Upon completion of the geography minor, the student will exhibit the following:
• A working knowledge of the basic concepts of physical and cultural geography.
• An understanding of major global locations and the importance of place in the understanding of geography.
• The techniques and methodologies of geography.

To complete the requirements for a minor in geography, students must take 18 hours.

Required courses:
GEO 3300 Principles of Physical Geography (3)
GEO 3301 Principles of Cultural Geography (3)
Approved upper-level geography courses
(GEO 2210 may be used if not taken in Area IV)

SOCIAL SCIENCE MINOR: LEADERSHIP (18 Hours)

LDR 1100 (3) Introduction to Leadership
LDR 4400 (3) Leadership Seminar*
SS 4498 (3) Social Science Theory

*Requires approval of the Director of the Institute of Leadership Development

Select an additional 9 hours:

AS 3312 (3) Air Force Leadership Studies I
AS 3313 (3) Air Force Leadership Studies II
HIS 4415 (3) Contemporary America
MGT 3371 (3) Principles of Management and Organizational Behavior
MGT 3375 (3) Human Resources Management
MS 2202 (2) Leadership, Management and Tactics
MS 2204 (1) Leadership Lab
PSY 4410 (3) Business and Industrial Psychology
POL 3321 (3) Principles of Public Administration
POL 3322 (3) Public Policy Making
POL 3351 (3) Foundations of International Relations
SPH 3345 (3) Group Discussion and Leadership
SOC 3301 (3) Social Change in the Information Age
SOC 3310 (3) Cultural Diversity and Ethnic Relations

SOCIAL SCIENCE MINOR: GENERAL SOCIAL SCIENCE (18 Hours)

SS 4498 (3) Social Science Theory

Select an additional 15 hours from at least three of the following: anthropology, economics, geography, history, political science, psychology or sociology. At least 12 hours must be 3000/4000 level.
Anthropology Courses (ANT)

2200 Anthropology (3-3)
An examination of human, physical and cultural development using evidence from archaeology, paleontology, genetics, ecology, cultural anthropology and linguistics with emphasis on the historical, structural and symbolic aspects of human culture. This course is prerequisite for all 3300 and 4400 level courses in anthropology. This course does not count toward the 36 hour major.

3305 Introduction to Archaeology (3-3)
An examination of the methods and theory of traditional and contemporary approaches to archaeological research.

3310 Cultural Anthropology (3-3)
An anthropological examination of human cultural development and a survey of both contemporary and past human cultures. May be taken for sociology credit.

3311 Physical Anthropology (3-3)
An examination of human biological development from the beginning of mankind through the Pleistocene using evidence from archaeology, paleontology, biology, genetics and osteology.

3312 Field Techniques in Archaeology (3-3)
Instruction in survey and excavation methods and techniques used in the discipline of archaeology.

3313 Laboratory Techniques in Archaeology (3-3)
Instruction in the methods and techniques used in the curation and analysis of cultural materials recovered from archaeological investigations.

3320 Prehistory of North American Indians (3-3)
An examination of the aboriginal cultures of North American prior to the period of European contact upon archaeological evidence.

3321 North American Indians Since Contact (3-3)
An examination of aboriginal cultures of North America from the period of European exploration, colonization, and settlement to present using archaeological, ethnographic, and ethnological studies.

3325 Selected Topics in Anthropology (3-3)
Anthropological examination of a designated topic of special and/or current interest and importance, which is generally not covered in regularly offered courses in the department.
3340 Language in Culture and Society (3-3)
A sociological and anthropological examination of language from a descriptive, historical
and social perspective.

3360 Magic, Witchcraft and Religion (3-3)
An anthropological examination of the role of religion and the supernatural among
traditional peoples.

3370 Native American Religions (3-3)
An introduction to Native American religions. Focused on basic concepts of Native
religions, the course familiarizes students with various aspects of religion and world
views drastically different from their own. Special attention is paid to religious
movements among Native groups which resulted from contact with Europeans and
Africans.

4400 Southeastern Archaeology (3-3)
An in-depth study of the history of archaeology in the southeastern United States and the
prehistoric and early historic cultures that inhabited the region for the last 12,000 years.

4401 Native American Cultures of the Southwestern U.S. (3-3)
An anthropological examination of the prehistory and early history of the southwestern
U. S. native cultures. Includes classroom lecture and on site observation.

4410 High Civilizations of the Old World (3-3)
An anthropological examination of the sociocultural systems that formed the foundations
of preindustrial high civilizations of the Old World and a survey of past cultures that
achieved this degree of development.

4411 High Civilizations of the New World (3-3)
An anthropological examination of the sociocultural systems that formed the foundations
of preindustrial high civilizations of the New World and a survey of past cultures that
achieved this degree of development.

4420 Forensic Osteology (3-3)
A survey of the methods used in recovering human osteological remains from field sites.
It includes methods used in identifying, preserving, and recording data from human
osteological remains, and the methods used in determining the cause of death, age, sex,
race, and stature of individuals from human osteological remains.

4491-4492 Guided Independent Research (1 to 3 credit hours per course per
semester)
Undergraduate research with attention to critical evaluation of research techniques,
methods and procedures. Prerequisites: Junior or senior status with a minimum overall
GPA of 3.0, permission of guiding professor, approval of department chair or dean. A
written request is to be submitted to the department chairperson at least two weeks in advance of the term in which the study is to be undertaken. May not be used to repeat a course for which a grade of “D” or less has been earned. Application forms are available in the office of University Records. Guided independent research may be taken only in the applicant’s major or minor field.

4493-4494 Guided Independent Study (1 to 3 credit hours per course per semester)
Supervised study through field and laboratory projects, guided readings, creative endeavors or achievement of specific skills. Prerequisites: Junior or senior status, with a minimum overall GPA of 3.0, permission of guiding professor, approval of department chair or dean. A written request is to be submitted to the department chairperson at least two weeks in advance of the term in which the study is to be undertaken. May not be used to repeat a course for which a grade of “D” or less has been earned. Application forms are available in the office of University Records. Guided independent research may be taken only in the applicant’s major or minor field.

Geography (GEO)

2210 World Regional Geography (3-3)
Physical and cultural features, economy, and populations of the geographic regions of the world.

3300 Principles of Physical Geography (3-3)
Earth geography including climate, soils, natural vegetation, water resources, rocks, minerals, and surface structures.

3301 Principles of Cultural Geography (3-3)
Interrelationship of geographical elements in various world situations.

3307 Geography of Europe
Selected topic studies in the physical and cultural environment, resource distribution, economy, and population characteristics of the European-Slavic land areas. Special attention will be devoted to the study of the geo-political influence of this area or least developed nations and the U. S.

3312 Geography of Latin American (3-3)
An analysis of the major physical and cultural aspects of Middle and South America. Prerequisites: 9 hrs social science.

3326 Geography of the Russian Realm (3-3)
An analysis of the physical and cultural aspects of Russia and the other former republics of the Soviet Union. Prerequisites: 6 hrs social science.

3331 Geography of the Middle East and North Africa (3-3)
Physical setting, resource distribution, economy, population characteristics, and geopolitical importance of the region.
3350 Weather and Climate (3-3)
A study of the physical properties of weather and climate. *Prerequisites: 12 hrs of science or social science.*

4402 Political Geography (3-3)
Analysis of the reciprocal effects of geography and political organization on the behavior of states including: boundaries and frontiers, national resources, spatial strategy, and maritime power.

4403 Conservation (3-3)
The conservation of natural and human resources with emphasis on population expansion as the major element in changing ecology.

4404 Economic Geography (3-3)
Spatial patterns of economic activities including production, distribution, consumption, and the environmental consequences of these activities. *Prerequisites: 12 hrs social science.*

4406 Urbanism (3-3)
Historical, physical, economic, and societal evolution of the urban area. American metropolitan problems and implications for policy and planning. NOTE: One field trip required at student’s expense. This course may be taken for sociology credit.

4408 Rural America: Past and Present (3-3)
A study of rural society, its organization, agencies, institutions, population trends and composition, patterns of settlement, social processes, and change in character. *Prerequisites: 12 hrs social science.*

4411 Demography (3-3)
Population growth, stabilization, decline, and structures in the context of societal change. This course may be taken for sociology credit.

4415 North American Geography (3-3)
Survey of agricultural, industrial, and commercial development of Anglo-America. Covers physical and cultural environment, resource distribution, economy, and population characteristics.

4435 Historical Geography of North America (3-3)
An analysis of the physical and cultural factors in the development of North America from early European settlement to the present. *Prerequisites: 12 hrs geography or history.*

4491-4492 Guided Independent Research (1 to 3 credit hours per course per semester)
Undergraduate research with attention to critical evaluation of research techniques, methods and procedures. Prerequisites: Junior or senior status with a minimum overall GPA of 3.0, permission of guiding professor, approval of department chair or dean. A written request is to be submitted to the department chairperson at least two weeks in advance of the term in which the study is to be undertaken. May not be used to repeat a course for which a grade of “D” of less has been earned. Application forms are available in the office of University Records. Guided independent research may be taken only in the applicant’s major or minor field.

**4493-4494 Guided Independent Study (1 to 3 credit hours per course per semester)**
Supervised study through field and laboratory projects, guided readings, creative endeavors or achievement of specific skills. Prerequisites: Junior or senior status, with a minimum overall GPA of 3.0, permission of guiding professor, approval of department chair or dean. A written request is to be submitted to the department chairperson at least two weeks in advance of the term in which the study is to be undertaken. May not be used to repeat a course for which a grade of “D” or less has been earned. Application forms are available in the office of University Records. Guided independent research may be taken only in the applicant’s major or minor field.

**4498 Honors Independent Study (1 to 3 credit hours)**
Advanced research and study for outstanding students in their major field. Culminates in report to a department committee which includes invited faculty members in related fields.

**Leadership Courses (LDR)**

**1100 Introduction to Leadership (3-3)**
A survey of leadership theory, practice, and research. The course includes an investigation of leadership through studies of great leaders and thinkers. Learning about leadership is reinforced through practical exercises and experience in leadership.

**4400 Leadership Seminar (3-3)**
A capstone course designed to synthesize leadership planning and experience and to orient developing leaders to the practical and ethical challenges awaiting them.

**Social Science Courses (SS)**

**3375 Introduction to Social Science Inquiry (3-3)**
Principles of pure and applied research for the social sciences. Special emphasis is given to the types of research methods employed by social scientists including survey techniques, field research, quasi-experimental designs and analytical procedures currently used in the social sciences. **Prerequisites: general studies math.**

**3376 Applications of Social Science Inquiry (3-3)**
A detailed description of what social scientists do with the information they gather. Particular attention is given to descriptive and inferential statistics, the relationship
between research and policy, evaluation research, and research ethics. *Prerequisites: general studies math.*

**4481 Methods and Materials for the Secondary Teacher (4)**
A survey of teaching methods and materials appropriate for teaching in the content areas for grades 6-12. Topics addressed will include teacher evaluation in the public schools, collaboration with special education teacher evaluation in the public schools, collaboration with special education teachers, and lesson planning formats. In addition, teaching methods, selections organization and use of history/social science materials for grades 6-12 will be covered in detail. A professional laboratory experience is included in this course.

**4498 Social Science Theory (3-3)**
A survey of the major theorists in the social sciences, emphasizing those who made critical contributions influencing the several social science disciplines and contemporary theorists whose works have an interdisciplinary element.

**4499 Senior Seminar (3-3)**
In this course, the senior level social science student prepares for the transition to graduate school/career. The student explores himself/herself as a person and as a social scientists in an effort to choose a fulfilling career path. In addition to career exploration, students conduct a senior project in an area of interest consistent with their academic program.

**Sociology Courses (SOC)**

**2230 Social Problems in Contemporary Society (3-3)**
An examination of conditions that are harmful to society. Topics include problems with social institutions, inequality, deviance, and social change.

**2275 Introduction to Sociology (3-3)**
Survey of basic sociological concepts and the effect of social phenomena on individuals, groups and institutions.

**2290 Sociology of Marriage (3-3)**
The social, psychological, legal and practical aspects of marriage, emphasizing the sociological perspective in an examination of major issues relating to marital success.

**3300 Social Institutions (3-3)**
An analysis of several major social institutions, their structural components, processes, and resultant problems. Group interrelations and social change will be emphasized.

**3301 Social Change (3-3)**
An examination of social changes precipitated by the invention, discovery, and diffusion of products and technologies as society moves into the 21st century. Technology driven changes are explored within topics such as the restructuring of occupations and the
workplace, threats to personal privacy, the emergence of virtual culture, the impact of the Internet on the concept of human interaction, ethical issues created by technological advancements, etc.

3302 Sociology of Small Groups (3-3)
An analysis of theory and research relating to the structure, functions, and processes of small groups. The course will explore group formation, structure, cohesion, conformity, power, leadership, and communication.

3310 Minorities in U. S. Social Structure (3-3)
An analysis of the role of racial and cultural minorities in American society. Contributions of anthropology, sociology, and psychology to theories of minority/majority group relations.

3320 Work, Family, and Changing Sex Roles (3-3)
Focuses on the overlapping worlds of work and family, emphasizing how the interaction of family-related issues, economic issues, and political issues influence and are influenced by the changing sex roles of women and men in American society.

3323 Juvenile Delinquency (3-3)
An examination of social, economic, psychological, and physiological determinants of young people’s behavior as it concerns family, community, and social worker.

3331 Family Relations (3-3)
Study of family, its origin, development, and problems affecting marital relations and happiness.

3332 Family Violence (3-3)
A course to provide students with an in-depth study of the problems of violence in families including spouse abuse, child abuse, elder abuse, and the dynamics and dangers of violent relationships. The study will examine the root causes of family violence and the devastation, multi-generational effects of violence on its victims and society. Students will study current societal responses to family violence including protection services, treatment programs, legal defense strategies, and current legislation.

3345 Criminology (3-3)
Study of crime and its causes and measurements. Topics include various explanations of criminal behavior, typology of crime, criminal justice system, and social relations to crime.

3350 Social Anthropology (3-3)
An investigation of a major subdiscipline of anthropology using primary readings from its founders and contemporary ethnographic research while using a social anthropological approach.

3356 Sociology of Aging (3-3)
Sociological examination of global social changes precipitated by the demographic phenomenon of the aging of U. S. society and other societies. Addresses the heterogeneity of the older population, their locations, perceptions, and constraints. Issues such as housing, transportation, health care, and death and dying are explored.

3357 Sociological Aspects of Human Sexuality (3-3)
An examination of the cultural and social components of sexuality including current perspectives on sexuality, sex research and theory, cross-cultural perspectives and sexual diversity, gender issues, sexual relationships, sexual orientations, pregnancy and parenthood, sexually transmitted diseases, sexual victimization, sexuality across the life span, and recent social changes affecting sexuality in society.

3380 Social Behavior (3-3)
Analysis of social behavior based on empirical research. Prerequisites: junior or senior standing and 6 hrs of Psychology, ENG 1102, or permission of instructor. NOTE: May be taken for Psychology or Sociology credit but not for both.

4406 Urbanism (3-3)
Historical, physical, economic, and social evolutions of urbanized areas. Emphasis on contemporary urban problems with implications for policy and planning. Prerequisite: Twelve hours of social science.

4408 Rural America: Past and Present (3-3)
A study of rural society, its organization, agencies, institutions, population trends and composition, patterns of settlement, social processes and change in character. Prerequisites: 12 hrs social science.

4409 Political Sociology (3-3)
An overview of politics and political systems from earliest times to the present with some emphasis on democratic systems in the U. S. and other modern countries. Prerequisites: Junior standing.

4411 Demography and Population Analysis (3-3)
Overview of sociological and demographic theories of the growth, decline, and movement of human populations. Focus is given to concepts, methods and techniques used in the social sciences to qualitatively and quantitatively examine the causes and consequences of global demographic change. This course may be taken for geography credit.

4412 Social Change (3-3)
An in-depth analysis of social and cultural change from earliest times to the present with an exposition of the forces of both change and conservation, including technology. Prerequisite: Junior standing.

4415 Correctional Systems and Practices (3-3)
An examination of the day to day operations and practices in modern correctional facilities in the local, state and federal systems.

4420 Sociological Theory (3-3)
Survey of sociological theory with emphasis on theorists, their works and contributions to modern sociological theory.

4421 Social Stratification (3-3)
This is an introduction to structures of social inequality. It surveys classical sociological theories of inequality and reviews current empirical data on stratification world wide. Students explore the impact of stratification on lifestyles, including such topics as family, educational opportunities, religious practices, status attainment, and social mobility.

4425 Intro to Survey Research (3-3)
An introduction to the foundations of social research and the major types of research methods employed in sociology. Prerequisite: Twelve hours in the social sciences to include one course in statistics and one course in research.

4430 Sociology of Religion (3-3)
Sociological analysis of religion, including the effect of religion of behavior and attitudes and the inter-institutional relationships between religion and other institutions within the U. S.

4433 The Community (3-3)
A comparative view of the social organization of communities having widely different economic, spatial and cultural bases, analyzing the structure and interrelationship between the community and other social institutions and organizations. Prerequisites: 12 hrs of social science.

4435 The Sociology of Complex Societies (3-3)
A history and analysis of complex organizations from early to modern times.

4436 Social Evolution: Anarchy to Democracy (3-3)
Social analysis of human history from bands to modern societies. Prerequisites: 15 hrs of social science.

4440 Sociology and the Internet (3-3)
Provides an overview of using the Internet for social science research and practice. Prerequisites: Nine hours in social sciences.

4441 The Sociology of Logic and Emotion (3-3)
A study of the links between logic and emotions. Prerequisite: Nine hours of social science.

4456 Gerontology (3-3)
A survey of the aged in America, with emphasis on the psychosocial aspects of aging.
4459 Medical Sociology (3-3)
The sociological perspective applied to medicine. Topics include: changing ideas of
disease causation, the role of practitioners and patients, the institutional setting,
differential delivery of health services, differential patterns of morbidity and mortality,
and the politics of health.

4490 Internship in Sociology (3 credit hours)
Applications of skills and knowledge of sociology in government agency, foundation,
public service institution or similar situation under the supervision of a faculty member.
Prerequisites: Approval of the student’s academic adviser and department chair.

4491-4492 Guided Independent Research (1 to 3 credit hours per course per
semester)
Undergraduate research with attention to critical evaluation of research techniques,
methods and procedures. Prerequisite: Junior or senior status with a minimum overall
GPA of 3.0, permission of guiding professor, approval of department chair or dean. A
written request is to be submitted to the department chairperson at least two weeks in
advance of the term in which the study is to be undertaken. May not be used to repeat a
course for which a grade of “D” or less has been earned. Application forms are available
in the office of University Records. Guided independent research may be taken only in
the applicant’s major or minor field.

4493-4494 Guided Independent Study (1 to 3 credit hours per course per semester)
Supervised study through field and laboratory projects, guided readings, creative
endeavors or achievement of specific skills. Prerequisites: Junior or senior status, with a
minimum overall GPA of 3.0, permission of guiding professor, approval of department
chair or dean. A written request is to be submitted to the department chairperson at least
two weeks in advance of the term in which the study is to be undertaken. May not be
used to repeat a course for which a grade of “D” or less has been earned. Application
forms are available in the office of University Records. Guided independent research
may be taken only in the applicant’s major or minor field.

4495 Selected Topics (3-3)
Designed as a vehicle for the exploration of topics of current interest within the major
discipline of sociology.

SOCIOLOGY MAJOR

Troy University offers a major and minor in Sociology. All students pursuing an
undergraduate degree in Sociology must complete the following course of study:

General Studies 60 semester hours
Sociology Major 36 semester hours
Academic Minor 18 semester hours
Upper-level Electives 6 semester hours
Total 120 semester hours

Expected Student Outcomes

Upon completion of a major in sociology, the student will:

• Demonstrate an understanding of research methodology in the social sciences.
• Develop a reasonable level of knowledge of classical and modern sociological theories and theorists.
• Develop a critical and questioning stance toward both professional and lay formulations and explanations of human social behavior.
• Demonstrate the ability to calculate, use, and interpret descriptive and inferential statistics.

To earn a Bachelor of Science degree in Sociology, students must complete:

Area I (6 SH)
6 SH English Composition

Area II (13 SH)
4 SH selected from:
   2 SH Art Appreciation
   2 SH Music Appreciation
   2 SH Intro to Drama
3 SH Speech
3 SH Survey of Literature
3 SH selected from:
   Foreign Language
   Literature
   Philosophy
   Ethics
   Mythology
   World Religion

AREA III (11 SH)
4 SH Principles of Biography w/lab
4 SH Natural Science w/lab from:
   Chemistry
   Physics
   Physical Science
   Earth Science
3 SH Math, finite or higher

AREA IV (12 SH)
3 SH History
NOTE: Students MUST complete a 6 SH sequence in literature (Area II) or history (Area IV).
NOTE: 6 SH from Area II/Area IV must be global/international in scope.

9 SH electives from:
  Anthropology
  World Geography
  General Psychology
  Developmental Psychology
  History
  Micro-Economics
  Macro-Economics
  Sociology
  World Politics
  US Government

AREA V (18 SH)
3 SH Computer Application Course
1 SH University Orientation Course
3 SH ANT Anthropology
3 SH SOC 2230 Social Problems in Contemporary Society
3 SH SOC 2275 Introduction to Sociology
5 SH of approved General Studies electives

Sociology Major

Required courses:
SOC 3300 Social Institutions (3)
SOC 4420 Sociological Theory (3)
SS 3376 Application of Social Scientific Inquiry (3)
Approved upper-level sociology courses (27)

Sociology Minor

Expected Student Outcomes

Upon completion of the sociology minor, the student will:

• Demonstrate an understanding of sociology including research methodology.
• Acquire a knowledge of classical and modern sociological theory and theorists.

To complete the requirements for a minor in sociology, students must take 18 hours.

Required courses:

SOC 2230 Social Problems in Contemporary Society (3)
ANT 2200 Anthropology  (3)

Approved upper-level sociology courses  (12)