The College of Arts and Sciences is a diverse community of educators, students, and researchers from across the country and around the world who work together to advance the boundaries of human knowledge, foster critical thinking skills, promote intellectual inquiry, and develop an understanding of different human cultures necessary to become engaged global citizens.

These goals compel a commitment to creativity and inquiry free of bias and based upon the principles of objective scholarship. They require a responsibility to promote and convey those elements of the liberal arts and sciences that must be essential components of the educational goals of all units of the university. The college seeks richness through diversity of its programs and strength through erudition.

The College of Arts & Sciences is the university’s largest and oldest; it teaches the most students, and provides the backbone for Troy University’s educational and research missions. As a result, you will find a broad array of academic programs that will prepare you for careers in public and private sectors as well as graduate and professional schools. These programs emphasize the core values of a classic liberal arts education, as well as the skills and flexibility one will need to meet the challenges of the 21st-century workplace.

A degree from the College of Arts & Sciences is much more than preparation for a career—it is preparation for a complete, rich, and rewarding life.

In addition to general studies courses, major courses and minor courses, sufficient free electives should be chosen to total at least 120 hours.

As part of ongoing planning and evaluation, the College of Arts and Sciences regularly evaluates student learning outcomes for each degree program.

**ACCELERATED LAW CURRICULUM**

**(58 HOURS)**

1. Students interested in the Accelerated Law Curriculum must complete the requirements for the General Social Science Concentration and the courses outlined in Area V of General Studies by the end of the third year of study at Troy University (or semester prior to attending Cumberland School of Law, Samford University or Jones School of Law, Faulkner University). Students must take the LSAT exam as part of the admissions requirement.

2. Students interested in the Accelerated Law Curriculum must meet the admission requirements and be accepted to the Cumberland School of Law, Samford University or Jones School of Law, Faulkner University. Students must take the LSAT exam as part of the admissions requirement.

3. In addition to the courses required for the General Social Science concentration and outlined Area V courses, students must complete 30 semester hours of law courses outlined by Cumberland School of Law, Samford University or Jones School of Law, Faulkner University.

4. Students are strongly recommended to take PHI 2204 Ethics and Modern World within Area II of General Studies.

5. Upon the successful completion of the designated 30 semester hours of courses at Cumberland School of Law or Jones School of Law, students may be awarded a Bachelor of Science in Social Science with a minor in Legal Studies.

For additional information, interested students should see the coordinator of this program in the Department of Social Science.

**Area V**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS 2241</td>
<td>3</td>
</tr>
<tr>
<td>TROY 1101</td>
<td>1</td>
</tr>
</tbody>
</table>

**Requirements for the Major** *(15 hours)*

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS 3375</td>
<td>3</td>
</tr>
<tr>
<td>SS 3376</td>
<td>3</td>
</tr>
<tr>
<td>SS 3377</td>
<td>3</td>
</tr>
<tr>
<td>SS 4498</td>
<td>3</td>
</tr>
<tr>
<td>SS 4499</td>
<td>3</td>
</tr>
</tbody>
</table>

**General Social Science Concentration:**

Select at least 21 hours of additional 3000/4000-level courses from anthropology, economics, geography, history, political science, psychology or sociology (six hours may be used from ECO 2251, ECO 2252, GEO 2210, ANT 2200, POL 2260 [World Politics], or SOC 2280) in at least three disciplines.

**Legal Studies Minor (Accelerated Law Curriculum)**

**Required Courses** *(9 hours)*

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGL 2200</td>
<td>3</td>
</tr>
<tr>
<td>LGL 3300</td>
<td>3</td>
</tr>
<tr>
<td>LGL 4400</td>
<td>3</td>
</tr>
</tbody>
</table>

The remaining nine (9) hours of Legal Studies Minor will consist of courses successfully completed in Law School.

**AIR FORCE ROTC/AEROSPACE STUDIES MINOR** *(18 HOURS)*

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS 3312</td>
<td>3</td>
</tr>
<tr>
<td>AS 3313</td>
<td>3</td>
</tr>
<tr>
<td>AS 4412</td>
<td>3</td>
</tr>
<tr>
<td>AS 4413</td>
<td>3</td>
</tr>
</tbody>
</table>

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.

*Students pursuing an Air Force ROTC Commission must also take the following Labs:*

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS L312</td>
<td>1</td>
</tr>
<tr>
<td>AS L313</td>
<td>1</td>
</tr>
<tr>
<td>AS L412</td>
<td>1</td>
</tr>
<tr>
<td>AS L413</td>
<td>1</td>
</tr>
</tbody>
</table>

**ANTHROPOLOGY MAJOR** *(36 HOURS)*

**Area IV**

Anthropology majors should take Area IV electives appropriate for their major.

**Major Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT 3305</td>
<td>3</td>
</tr>
<tr>
<td>ANT 3310</td>
<td>3</td>
</tr>
<tr>
<td>ANT 3311</td>
<td>3</td>
</tr>
<tr>
<td>ANT 3340</td>
<td>3</td>
</tr>
<tr>
<td>ANT 4499</td>
<td>3</td>
</tr>
<tr>
<td>SS 3376</td>
<td>3</td>
</tr>
</tbody>
</table>

Select at least 18 hours of additional 3000/4000-level anthropology courses as approved by your faculty adviser.
ANTHROPOLOGY MINOR (18 HOURS)
ANT 3310 (3) Cultural Anthropology
ANT 3311 (3) Physical Anthropology

Select at least 12 hours of additional 3000/4000-level anthropology courses as approved by your faculty adviser.

AVIATION OPERATIONS MINOR (18 HOURS) AND ADVANCED PROFESSIONAL FLIGHT MINOR (18 HOURS)

These two programs are only available as concentrations for students pursuing the ASGE degree and for students in the BAS/RTM program. The Advanced Professional Flight concentration is only available at Troy University’s Hawaii location. Specific questions regarding these two concentrations should be directed to the Office of the Dean of the College of Arts and Sciences.

For concentration requirements, see the Aviation Operations and Advanced Professional Flight link at http://troy.edu/catalogs/1617/undergraduate/index.html.

BACHELOR OF APPLIED SCIENCE: RESOURCE AND TECHNOLOGY MANAGEMENT MAJOR (36 HOURS)

Area III Requirements
SCI 2233 (3) Physical Science
SCI L233 (1) Physical Science Lab

Area IV Requirements
ECO 2251 (3) Principles of Macroeconomics
ECO 2252 (3) Principles of Microeconomics

Area V Requirements (24 hours)
TROY 1101 (1) University Orientation
IS 2241 (3) Computer Concepts & Applications
GEO 2210 (3) World Regional Geography
POL 2260 (3) World Politics
PSY 2200 (3) General Psychology
SOC 2275 (3) Introduction to Sociology
SCI 2234 (3) Earth and Space Science
SCI L234 (1) Earth and Space Science Lab
Electives (5 hours)

Resource & Technology Management Major (36 hours)
Required Core courses (18 hours)
BIO 4465 (3) Occupational Safety and Health
MKT 3300 (3) Principles of Marketing
MGT 3300 (3) Principles of Management
SCI 3365 (3) Principles of Applied Science
SOC 3370 (3) Society and Environment
SS 3375 (3) Introduction To Social Science Inquiry

Select a minimum of 18 semester hours from the courses listed below:
BIO 4460 (3) Critical Issues of Environmental Mgmt.
CJ 3335 (3) Private & Public Security Administration
CS 3310 (3) Foundations of Computer Science
PSY 4410 (3) Business and Industrial Science
SCI 3366 (3) Survey of Electronic Technology
SCI 3370 (3) Toxic, Radioactive, & Hazardous Material
SCI 4450 (3) Science in a Regulatory Environment
SOC 3310 (3) Minorities in U.S. Social Structure

Transfer of *Specialized technical courses. (not to exceed 18 semester hours.)

*Specialized technical courses.
Credit will be awarded for specialized technical knowledge based upon American Council of Education (A.C.E.) credit recommendations or transfer work from regionally accredited (Southern Association of Colleges and Schools, Middle States Association of Colleges and Schools, etc.) post-secondary community college, or technical schools as approved by the Academic Council. Specializations are not available in fields of study that are offered through Troy University as majors, programs, or minors, e.g., nursing, computer science, information systems, or education. Exceptions to the use of a Troy University minor are the programs in Aviation Operations and Advanced Professional Flight. Program requirements for either minor may be used to satisfy the 18 hours of specialized technical courses.

Eligibility
Eligibility for enrollment in one of the applied science degree programs is dependent upon prior education and/or experience. Before enrollment in one of the programs, official documentation of prior learning must be submitted to determine eligibility. All post-secondary technical school transfer students must complete all courses required in the institution’s curriculum and earn (if appropriate) a diploma or certificate before being granted admission into the resources management degree program. No additional credit will be awarded for the possession of a license (i.e., all credit awarded is based on documentation of training and evaluation leading to the issue of a license, not the mere possession of a license). All credit from the Community College of the Air Force (CCAF), accredited post secondary technical schools, and/or American Council on Education (ACE) recommendations will be considered junior college credit except where specifically recommended by ACE for upper-division credit. No credit will be awarded until six semester hours of academic credit has been earned at Troy University. At least 50 percent of the degree program must be traditional academic credit at the 3300/4400 level. Curriculum: The academic curricula taught at the university have been developed to supplement, not duplicate, the vocational/technical training or other experiential learning the individual may possess in a manner designed to provide these individuals greater career opportunities.

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 MAJOR (43 HOURS)

*Special Topics in Biology (BIO 4476), Guided Independent Studies (BIO 4491/4492) and Guided Independent Research (BIO 4493, 4494) may only be taken for a maximum of 6 semester hours.

Specialized General Studies Requirements
General studies requirements for the biology, environmental science, biomedical sciences, and marine biology programs and the biology major total 64 semester hours. See the General Studies section of this catalog for complete general studies information.

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

Area V Requirements
BIO 1101 (3) Organismal Biology
BIO L101 (1) Organismal Biology Lab
CHM 1143 (3) General Chemistry II
CHM L143 (1) General Chemistry II Lab
IS 2241 (3) Computer Concepts and Applications
**Major Requirements**

BIO 2220  (3) Principles of Cell Biology  
BIO L220  (1) Principles of Cell Biology Lab  
BIO 2229  (3) General Ecology  
BIO L229  (1) General Ecology Lab  
BIO 3320  (3) Genetics  
BIO L320  (1) Genetics 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

**Complete one botany course with its corresponding lab:**  
BIO 3325  (3) Plant Form and Function  
BIO L325  (1) Plant Form and Function Lab  
BIO 4425  (4) Field Botany

**Complete one zoology course with its corresponding lab:**  
BIO 3307  (3) Invertebrate Zoology  
BIO L307  (1) Invertebrate Zoology Lab  
BIO 4405  (3) Entomology  
BIO L405  (1) Entomology Lab  
BIO 4420  (4) Field Vertebrate Zoology  
BIO 4445  (3) Ichthyology  
BIO L445  (1) Ichthyology Lab  
BIO 4446  (3) Herpetology  
BIO L446  (1) Herpetology Lab  
BIO 4447  (3) Ornithology  
BIO L447  (1) Ornithology Lab  
BIO 4448  (3) Mammalogy  
BIO L448  (1) Mammalogy Lab  
BIO 4471  (3) Parasitology  
BIO L471  (1) Parasitology Lab

**Complete one ecology/environmental course with its corresponding lab:**  
BIO 1120  (3) Survey of Environmental Sciences  
BIO L120  (1) Survey of Environmental Sciences Lab  
BIO 4413  (3) Limnology  
BIO L413  (1) Limnology Lab  
BIO 4416  (3) Microbial Ecology  
BIO L416  (1) Microbial Ecology Lab  
BIO 4421  (3) Population Ecology  
BIO L421  (1) Population Ecology Lab  
BIO 4479  (3) Environmental Assessment  
BIO L479  (1) Environmental Assessment Lab

**Complete one physiology/cell/molecular course with its corresponding lab:**  
BIO 3347  (3) Human Anatomy and Physiology I  
BIO L347  (1) Human Anatomy and Physiology I Lab  
BIO 3348  (3) Human Anatomy and Physiology II  
BIO L348  (1) Human Anatomy and Physiology II Lab  
BIO 3372  (3) Microbiology  
BIO L372  (1) Microbiology Lab  
BIO 3382  (3) Immunology  
BIO L382  (1) Immunology Lab  
BIO 3386  (3) Hematology  
BIO L386  (1) Hematology Lab  
BIO 4414  (3) Food Microbiology  
BIO L414  (1) Food Microbiology Lab  
BIO 4430  (3) Applied Genetics  
BIO L430  (1) Applied Genetics Lab  
BIO 4451  (1) Toxicology Lab  
BIO L451  (1) Toxicology Lab

**Complete one upper-level adviser-approved biology course and its corresponding lab.**

**BIOLOGY MINOR (18-20 HOURS)**

Lectures and the corresponding labs must be taken together:

BIO 1101  (3) Organismal Biology  
BIO L101  (1) Organismal Biology Lab  
BIO 1120  (3) Survey of Environmental Sciences  
BIO L120  (1) Survey of Environmental Sciences Lab  

**BIOLOGY PROGRAM (56 HOURS)**

*Special Topics in Biology (BIO 4476), Guided Independent Studies (BIO 4491/4492) and Guided Independent Research (BIO 4493, 4494) may only be taken for a maximum of 6 semester hours

**Specialized General Studies Requirements**

**Area III**

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

**Area V Requirements**

IS 2241  (3) Computer Concepts and Applications  
TROY 1101  (1) University Orientation  
BIO 1101  (3) Organismal Biology  
BIO L101  (1) Organismal Biology Lab  
CHM 1143  (3) General Chemistry II  
CHM L143  (1) General Chemistry II Lab

**Complete one sequence (physics sequence not required for medical technology concentration):**  
PHY 2252  (3) General Physics I  
PHY L252  (1) General Physics I Lab  
PHY 2253  (3) General Physics II  
PHY L253  (1) General Physics II Lab  

**OR**

PHY 2262  (3) Physics I with Calculus
Complete 16 hours from the courses listed below. One upper level botany, ecology/environmental or zoology course with its corresponding lab may be used towards this requirement. The 16 hours chosen should be based on the student’s future plans for employment, graduate school or professional school.

**Biomedical Sciences Concentration:**

- BIO 3347 (3) Human Anatomy and Physiology I
- BIO L347 (1) Human Anatomy and Physiology I Lab
- BIO 3348 (3) Human Anatomy and Physiology II
- BIO L348 (1) Human Anatomy and Physiology II Lab
- BIO 3372 (3) Microbiology
- BIO L372 (1) Microbiology Lab
- BIO 4482 (3) Molecular Biology
- BIO L482 (1) Molecular Biology Lab

**Food Safety Concentration:**

- BIO 4451 (3) Toxocology
- BIO 4418 (3) Food Laws and Regulations
- CHM 3352 (3) Biochemistry
- CHM L352 (1) Biochemistry Lab
- HSTM 4466 (3) Restaurant Management
- NSG 2211 (3) Human Nutrition

**Complete seven or more hours from the courses listed below. Lectures and their corresponding labs must be taken together.**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 3340</td>
<td>Evolution</td>
</tr>
<tr>
<td>BIO 3382</td>
<td>Immunology</td>
</tr>
<tr>
<td>BIO L382</td>
<td>Immunology Lab</td>
</tr>
<tr>
<td>BIO 4416</td>
<td>Microbial Ecology</td>
</tr>
<tr>
<td>BIO L416</td>
<td>Microbial Ecology Lab</td>
</tr>
<tr>
<td>BIO 4471</td>
<td>Parasitology</td>
</tr>
<tr>
<td>BIO L471</td>
<td>Parasitology Lab</td>
</tr>
<tr>
<td>BIO 4476</td>
<td>Special Topics in Biology*</td>
</tr>
<tr>
<td>BIO 4482</td>
<td>Molecular Biology</td>
</tr>
<tr>
<td>BIO L482</td>
<td>Molecular Biology Lab</td>
</tr>
<tr>
<td>BIO 4488/8</td>
<td>Internship in the Biological</td>
</tr>
</tbody>
</table>

**General Biology Concentration:**

**Complete one botany course with its corresponding lab:**

- BIO 3325 (3) Plant Form and Function
- BIO L325 (1) Plant Form and Function Lab
- BIO 4425 (4) Field Botany

**Complete one zoology course with its corresponding lab:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 3307</td>
<td>Invertebrate Zoology</td>
</tr>
<tr>
<td>BIO L307</td>
<td>Invertebrate Zoology Lab</td>
</tr>
<tr>
<td>BIO 3308</td>
<td>Vertebrate Zoology</td>
</tr>
<tr>
<td>BIO L308</td>
<td>Vertebrate Zoology Lab</td>
</tr>
<tr>
<td>BIO 4405</td>
<td>Entomology</td>
</tr>
<tr>
<td>BIO L405</td>
<td>Entomology Lab</td>
</tr>
<tr>
<td>BIO 4420</td>
<td>Field Vertebrate Zoology</td>
</tr>
<tr>
<td>BIO 4445</td>
<td>Ichthyology</td>
</tr>
<tr>
<td>BIO L445</td>
<td>Ichthyology Lab</td>
</tr>
<tr>
<td>BIO 4446</td>
<td>Herpetology</td>
</tr>
<tr>
<td>BIO L446</td>
<td>Herpetology Lab</td>
</tr>
<tr>
<td>BIO 4447</td>
<td>Ornithology</td>
</tr>
<tr>
<td>BIO L447</td>
<td>Ornithology Lab</td>
</tr>
<tr>
<td>BIO 4448</td>
<td>Mammalogy</td>
</tr>
<tr>
<td>BIO L448</td>
<td>Mammalogy Lab</td>
</tr>
<tr>
<td>BIO 4471</td>
<td>Parasitology</td>
</tr>
<tr>
<td>BIO L471</td>
<td>Parasitology Lab</td>
</tr>
</tbody>
</table>

**Complete one ecology/environmental course with its corresponding lab:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 4413</td>
<td>Limnology</td>
</tr>
<tr>
<td>BIO L413</td>
<td>Limnology Lab</td>
</tr>
<tr>
<td>BIO 4416</td>
<td>Microbial Ecology</td>
</tr>
<tr>
<td>BIO L416</td>
<td>Microbial Ecology Lab</td>
</tr>
<tr>
<td>BIO 4421</td>
<td>Population Ecology</td>
</tr>
<tr>
<td>BIO L421</td>
<td>Population Ecology Lab</td>
</tr>
<tr>
<td>BIO 4479</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>BIO L479</td>
<td>Environmental Assessment Lab</td>
</tr>
</tbody>
</table>

**Complete one physiology/cell/molecular course with its
Lectures and their corresponding labs must be taken together.

BIO 3372 (3) Human Anatomy and Physiology II
BIO 3384 (3) Human Anatomy and Physiology II Lab
BIO 3386 (3) Human Anatomy and Physiology I
BIO 3398 (1) Human Anatomy and Physiology I Lab
BIO 3401 (3) Microbiology
BIO 3402 (1) Microbiology Lab
BIO 3412 (3) Immunology
BIO 3416 (1) Immunology Lab

In addition to the above courses, students must complete 33 semester hours of hospital internship MLS 4400-4413 courses.

**BIOLOGY, PRE-PROFESSIONAL MAJOR (56 HOURS)**

**Specialized General Studies Requirements**

**Area II (12 Hours)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO L100</td>
<td>Human Anatomy &amp; Physiology I</td>
</tr>
<tr>
<td>BIO L101</td>
<td>Human Anatomy &amp; Physiology I Lab</td>
</tr>
<tr>
<td>CHM L114</td>
<td>General Chemistry I</td>
</tr>
<tr>
<td>CHM L116</td>
<td>General Chemistry I Lab</td>
</tr>
<tr>
<td>IS 2241</td>
<td>Computer Concepts and Applications</td>
</tr>
<tr>
<td>TROY 1101</td>
<td>University Orientation</td>
</tr>
</tbody>
</table>

**Area III (12 Hours)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 4420</td>
<td>Field Vertebrate Zoology</td>
</tr>
<tr>
<td>BIO 4421</td>
<td>Population Ecology</td>
</tr>
<tr>
<td>BIO 4425</td>
<td>Field Botany</td>
</tr>
</tbody>
</table>

**Area IV Requirements (20 Hours)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 4413</td>
<td>Limnology</td>
</tr>
<tr>
<td>BIO L400</td>
<td>Limnology Lab</td>
</tr>
<tr>
<td>BIO 4479</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>BIO L479</td>
<td>Environmental Assessment Lab</td>
</tr>
</tbody>
</table>

**Complete an additional eight hours of adviser-approved BIO or MB courses.**

**Medical Laboratory Science Concentration**

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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 3372</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIO L372</td>
<td>Microbiology Lab</td>
</tr>
<tr>
<td>BIO 3382</td>
<td>Immunology</td>
</tr>
<tr>
<td>BIO L382</td>
<td>Immunology Lab</td>
</tr>
</tbody>
</table>

Select 32 semester hours from the courses listed below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 3347</td>
<td>Human Anatomy &amp; Physiology I</td>
</tr>
<tr>
<td>BIO L347</td>
<td>Human Anatomy &amp; Physiology I Lab</td>
</tr>
<tr>
<td>BIO 3348</td>
<td>Human Anatomy &amp; Physiology II</td>
</tr>
<tr>
<td>BIO L348</td>
<td>Human Anatomy &amp; Physiology II Lab</td>
</tr>
<tr>
<td>BIO 3372</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIO L372</td>
<td>Microbiology Lab</td>
</tr>
<tr>
<td>BIO 3382</td>
<td>Immunology</td>
</tr>
<tr>
<td>BIO L382</td>
<td>Immunology Lab</td>
</tr>
</tbody>
</table>

**Complete one course with its corresponding lab:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 3386</td>
<td>Hematology</td>
</tr>
<tr>
<td>BIO L386</td>
<td>Hematology Lab</td>
</tr>
<tr>
<td>BIO 4471</td>
<td>Parasitology</td>
</tr>
<tr>
<td>BIO L471</td>
<td>Parasitology Lab</td>
</tr>
</tbody>
</table>

**Complete one sequence:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 2225</td>
<td>General Physics I</td>
</tr>
<tr>
<td>PHY L225</td>
<td>General Physics Lab</td>
</tr>
<tr>
<td>PHY 2253</td>
<td>General Physics II</td>
</tr>
<tr>
<td>PHY L253</td>
<td>General Physics II Lab</td>
</tr>
</tbody>
</table>

**OR**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 2262</td>
<td>Physics I with Calculus</td>
</tr>
<tr>
<td>PHY L262</td>
<td>Physics I with Calculus Lab</td>
</tr>
<tr>
<td>PHY 2263</td>
<td>Physics II with Calculus</td>
</tr>
<tr>
<td>PHY L263</td>
<td>Physics II with Calculus Lab</td>
</tr>
</tbody>
</table>

**Requirements for the major**

Lectures and their corresponding labs must be taken together.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 2220</td>
<td>Principles of Cell Biology</td>
</tr>
<tr>
<td>BIO L220</td>
<td>Principles of Cell Biology Lab</td>
</tr>
<tr>
<td>BIO 2229</td>
<td>General Ecology</td>
</tr>
<tr>
<td>BIO L229</td>
<td>General Ecology Lab</td>
</tr>
<tr>
<td>BIO 3320</td>
<td>Genetics</td>
</tr>
<tr>
<td>BIO L320</td>
<td>Genetics Lab</td>
</tr>
<tr>
<td>CHM 3342</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHM L342</td>
<td>Organic Chemistry I Lab</td>
</tr>
<tr>
<td>CHM 3343</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHM L343</td>
<td>Organic Chemistry II Lab</td>
</tr>
<tr>
<td>MTH 2210</td>
<td>Applied Statistics</td>
</tr>
<tr>
<td>BIO 4484</td>
<td>Senior Seminar in Biological &amp;</td>
</tr>
<tr>
<td></td>
<td>Environment Sciences</td>
</tr>
</tbody>
</table>

Select 32 semester hours from the courses listed below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 3347</td>
<td>Human Anatomy &amp; Physiology I</td>
</tr>
<tr>
<td>BIO L347</td>
<td>Human Anatomy &amp; Physiology I Lab</td>
</tr>
<tr>
<td>BIO 3348</td>
<td>Human Anatomy &amp; Physiology II</td>
</tr>
<tr>
<td>BIO L348</td>
<td>Human Anatomy &amp; Physiology II Lab</td>
</tr>
<tr>
<td>BIO 3382</td>
<td>Immunology</td>
</tr>
<tr>
<td>BIO L382</td>
<td>Immunology Lab</td>
</tr>
<tr>
<td>BIO 4414</td>
<td>Food Microbiology</td>
</tr>
<tr>
<td>BIO L414</td>
<td>Food Microbiology Lab</td>
</tr>
<tr>
<td>BIO 4430</td>
<td>Applied Genetics</td>
</tr>
</tbody>
</table>
CHEMISTRY EDUCATION

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. CHM 3352 is required for Alabama teacher certification.

CHEMISTRY MAJOR (36 HOURS)

Specialized General Studies Requirements

Area III

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

Area V Requirements

IS 2241 (3) Computer Concepts and Applications
MTH 1126 (4) Calculus II
*PHY 2262 (3) Physics I with Calculus
*PHY L262 (1) Physics I with Calculus Lab
*PHY 2263 (3) Physics II with Calculus
*PHY L263 (1) Physics II with Calculus Lab
TROY 1101 (1) University Orientation

*Chemistry majors minoring in Physics may replace these with free electives.

Chemistry Core (36 Hours)

CHM 1143 (3) General Chemistry II
CHM L143 (1) General Chemistry II Lab
CHM 2242 (3) Analytical Chemistry
CHM L242 (1) Analytical Chemistry 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
CHM 3381 (3) Physical Chemistry I
CHM L381 (1) Physical Chemistry I Lab
CHM 3382 (3) Physical Chemistry II
CHM 4444 (3) Advanced Inorganic Chemistry
CHM 4445 (3) Instrumental Analysis
CHM L445 (1) Instrumental Analysis Lab

Complete 6 hours of the following electives:

CHM 3352 (3) Biochemistry
CHM L352 (1) Biochemistry Lab
CHM 3382 (1) Physical Chemistry II Lab
CHM 4400 (3) Special Topics
CHM 4403 (3) Advanced Organic Chemistry
CHM L444 (1) Advanced Inorganic Chemistry Lab
CHM 4491/2 (1-3) Guided Independent Research
CHM 4493/4 (1-3) Guided Independent Study
CHM 4499 (1) Senior Research Seminar
MTH 2210 (3) Applied Statistics

Students must select an 18 semester hour minor:

CHEMISTRY MINOR (20 HOURS)

CHM 1142 (3) General Chemistry I
CHM L142 (1) General Chemistry I Lab
CHM 1143 (3) General Chemistry II
CHM L143 (1) General Chemistry II 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

Select four additional hours of advanced chemistry courses, such as

CHM 2242 (3) Analytical Chemistry
CHM L242 (1) Analytical Chemistry Lab
CHM 3352 (3) Biochemistry Lab
CHM L352 (1) Biochemistry Lab

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

COMPREHENSIVE GENERAL SCIENCE PROGRAM (54 HOURS)

Specialized General Studies Requirements

Area III

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

Area V

IS 2241 (3) Computer Concepts/Applications
PHY 2262 (3) Physics I w/Calculus
PHY L262 (1) Physics I w/Calculus Lab
SCI 2234 (3) Earth & Space Science
SCI L234 (1) Earth & Space Science Lab
TROY 1101 (1) University Orientation

Required Courses:

BIO 1101 (3) Organismal Biology
BIO L101 (1) Organismal Biology Lab
BIO 2220 (3) Principles of Cell Biology
BIO L220 (1) Principles of Cell Biology Lab
BIO 3320 (3) Genetics
BIO L320 (1) Genetics Lab
BIO 3347 (3) Human Anatomy & Physiology
BIO L347 (1) Human Anatomy & Physiology Lab
CHM 1143 (3) General Chemistry II
CHM L143 (1) General Chemistry II 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
CHM 3381 (3) Physical Chemistry I
CHM L381 (1) Physical Chemistry I Lab
MTH 1126 (4) Calculus II
MTH 2210 (3) Applied Statistics
PHY 2263 (3) Physics II w/Calculus
PHY L263 (1) Physics II w/Calculus Lab
PHY 3310 (3) Modern Physics
PHY L310 (1) Modern Physics Lab
PHY 3359 (3) Waves and Optics
PHY L359 (1) Waves and Optics Lab
PHY 4420 (3) Mechanics

COMPUTER SCIENCE MINOR (18 HOURS)
CS 2250 (3) Computer Science I
CS 2255 (3) Computer Science II

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

COMPUTER SCIENCE PROGRAM (48 HOURS)

Specialized General Studies Requirements

Area III
MTH 1125 (4) Calculus I, in lieu of MTH 1110

Select a four hour course/lab combination from the following:
(Students must complete an eight hour sequence in chemistry or
physics. Also see Area V Requirements.)
CHM 1142 (3) General Chemistry I
CHM L142 (1) General Chemistry I Lab
PHY 2252 (3) General Physics I
PHY L252 (1) General Physics I Lab

Select remaining Area III courses as shown in the General
Studies section of this catalog.

Area V Requirements
CS 2250 (3) Computer Science I
MTH 1126 (4) Calculus II
TROY 1101 (1) University Orientation

Select a four hour course/lab combination from the following:
(Students must complete an eight hour sequence in chemistry or
physics. Also see Area III.)
CHM 1143 (3) General Chemistry II
CHM L143 (1) General Chemistry II Lab
PHY 2253 (3) General Physics II
PHY L253 (1) General Physics II Lab

Required Courses:
CS 2255 (3) Computer Science II
CS 3310 (3) Foundations of Computer Science
CS 3323 (3) Data Structures
CS 3329 (3) Analysis of Algorithms
CS 3332 (3) Software Engineering I
CS 3360 (3) Concepts of Object-Oriented Programming I
CS 3365 (3) Introduction to Computer Organization and
Architectures
CS 3370 (3) Nature of Programming Languages
CS 3372 (3) Formal Languages and the Theory of
Computation
CS 4420 (3) Introduction to Database Systems
CS 4445 (3) Data Communication and Networking
CS 4448 (3) Operating Systems
MTH 2210 (3) Applied Statistics
MTH 2215 (3) Applied Discrete Mathematics

Select two of the following:
CS 3320 (3) Business Systems Programming
CS 3325 (3) Operations Research
CS 3331 (3) Fundamentals of Artificial Intelligence
CS 3361 (3) Concepts of Object Oriented Programming II
CS 4401 (3) Advanced Artificial Intelligence
CS 4443 (3) Web Based Software Development
CS 4447 (3) Systems Analysis and Design
CS 4451 (3) Computer Security and Reliability
CS 4461 (3) Software Engineering II
CS 4462 (3) Special Topics in Object-Oriented Technology
CS 4495 (3) Special Topics in Computer Science

COMPUTER SCIENCE, APPLIED MAJOR
(36 HOURS)

Area III
MTH 2210 (3) Calculus II, in lieu of MTH 1110

Select additional Area III requirements as shown in the General
Studies section of this catalog.

Area V Requirements
IS 2241 (3) Computer Concepts and Applications
MTH 2215 (3) Applied Discrete Mathematics
TROY 1101 (1) University Orientation

Major Requirements:
CS 2250 (3) Computer Science I
CS 2255 (3) Computer Science II
CS 2265 (3) Advanced Programming I
CS 3330 (3) Data Structures and Algorithms
CS 4420 (3) Introduction to Database Systems
CS 4443 (3) Web-Based Software Development
CS 4445 (3) Data Communications and Networking
CS 4447 (3) Systems Analysis and Design
CS 4448 (3) Operating Systems

Select three of the following:
CS 3320 (3) Business Systems Programming
CS 3332 (3) Software Engineering I
CS 3347 (3) Advanced Programming II
CS 4449 (3) Applied Networking
CS 4451 (3) Computer Security
CS 4495 (3) Special Topics in Computer Science

COMPUTER SCIENCE A.S. DEGREE (60 HOURS)

Associate of Science Degree
See the academic regulations section of this catalog for additional
information regarding associate degrees.

General Studies Requirements
Area I
ENG 1101 (3) Composition and Modern English I
ENG 1102 (3) Composition and Modern English II

Area II
Select one of the following:
A. Complete one of three concentrations below:

1. CJ 4499
2. CJ 3375
3. CJ 3352
4. CJ 3345
5. CJ 2241
6. CJ 2231
7. CJ 2221
8. CJ 1101
9. Spanish or another foreign language as part of their general studies

Criminal justice majors are encouraged to take two semesters of

Select 9 hours of free electives.

B. Homeland Security Concentration.
Select 12 additional hours from the following as approved by
the adviser:

- CJ 3305 (3) Foundations of Emergency Management
- CJ 3335 (3) Security Operations
- CJ 4420 (3) Comparative Criminal Justice
- CJ 4440 (3) Terrorism
- CJ 4470 (3) Criminal Justice Issues in Homeland Security
- CJ 4488 (3) Internship (limit 1)
- POL 3364 (3) State and Local Politics
- POL 4415 (3) International Conflict
- POL 4422 (3) Public Policy Making

C. Digital Forensics concentration.
Select 12 additional hours from the following as approved by the adviser:

- CJ 3380 (3) Digital Forensics I
- CJ 3382 (3) Social Media Investigation
- CJ 4480 (3) Digital Forensics II
- CJ 4481 (3) Operating and File System Forensics
- CJ 4482 (3) Digital Evidence Practicum
- CJ 4472 (3) Cyber Crime
- CJ 4475 (3) Seminar in Cyber Crime

CRIMINAL JUSTICE MINOR (18 HOURS)

Select 15 additional hours of upper-level criminal justice courses
as approved by the adviser.

CYBER SECURITY MINOR/CERTIFICATE (21 HOURS)

Requirements for Minor (9)

- CJ 1101 (3) Introduction to Criminal Justice
- CJ 4475 (3) Seminar in Cyber Security
- CS 3310 (3) Foundations of Computer Science

Select 12 hours from the following:
See Course Descriptions for pre-requisites and restrictions:

- CJ 3352 (3) Constitutional Law in Criminal Justice
- CJ 4473 (3) Computer Forensics
- CJ 4472 (3) Cyber Crime
- CS 3375 (3) Foundations of Networking
- CS 4445 (3) Data Communication and Networking
- CS 4449 (3) Applied Networking
- CS 3380 (3) Cyber Security
- CS 4451 (3) Computer Security

Students may not receive academic credit for both CS 3375 and
CS 4445, or CS 3380 and CS 4451.

A certificate in Cyber Security with the same requirements as the
Cyber Security Minor is available. Computer Science majors
should contact the Department of Computer Science for
information about the certificate program. All other students
interested in the certification program should contact
the Department of Criminal Justice. Students seeking the certificate in
Cyber Security must be admitted to Troy University.

DIGITAL FORENSICS MINOR / CERTIFICATE
(18 HOURS)

Select 18 hours from the following:

- CJ 3380 (3) Digital Forensics I
- CJ 3382 (3) Social Media Investigation
Area III

Specialized General Studies Requirements

BIO 1100 (3) Principles of Biology
BIO L100 (1) Principles of Biology Lab
CHM 1143 (3) General Chemistry I
CHM L143 (1) General Chemistry I Lab
MTH 1125 (4) Calculus I

Area IV Requirements

IS 2241 (3) Computer Concepts and Applications
TROY 1101 (1) University Orientation
MUS 1131 (3) Music Appreciation

Select one of the following:
- ENG 2205 (3) World Literature before 1660
- ENG 2206 (3) World Literature after 1660
- ENG 2211 (3) American Literature before 1875
- ENG 2212 (3) American Literature after 1875
- ENG 2244 (3) British Literature before 1785
- ENG 2245 (3) British Literature after 1785

Area II
Select one of the following:
- ART 1133 (3) Visual Arts
- THE 2200 (3) Introduction to Theatre
- MUS 1131 (3) Music Appreciation

Select one of the following:
- ENG 2205 (3) World Literature before 1660
- ENG 2206 (3) World Literature after 1660

Area III
Select one of the following:
- MUS 1131
- THE 2200
- ART 1133

Select one of the following:
- ENG 1102
- ENG 1101

Area I
General Studies Requirements

Select six hours of one foreign language.

Area III
Select one of the following:
- MTH 1110 (3) Finite Mathematics
- MTH 1112 (3) Pre-calculus Algebra

Select one science course and corresponding lab:
- BIO 1100 (3) Principles of Biology
- BIO L100 (1) Principles of Biology Lab
- SCI 2233 (3) Physical Science
- SCI L233 (1) Physical Science Lab
- SCI 2234 (3) Earth and Space Science
- SCI L234 (1) Earth and Space Science Lab

Area IV
Select one of the following:
- HIS 1101 (3) Western Civilization I
- HIS 1102 (3) Western Civilization II
- HIS 1111 (3) U.S. to 1877
- HIS 1112 (3) U.S. since 1877
- HIS 1122 (3) World History to 1500
- HIS 1123 (3) World History from 1500

Area V
Select one of the following:
- IS 2241 (3) Computer Concepts and Applications
- TROY 1101 (1) University Orientation

Additional requirements
Select any minor or area of concentration.
Select additional free electives to complete a total of 60 hours.

GEOGRAPHIC INFORMATION SYSTEMS (GIS)
MINOR (18 HOURS)

Required Courses: (9 Hours)
- GIS 3301 (3) Cartography and Geo-Visualization
- GEM 3390 (3) Fundamentals of Geographical Information and Analysis
- GIS 3305 (3) Spatial Information and Analysis

Electives: (9 Hours)
Select one course from the following: (3 Hours)
- GEO 3300 (3) Cultural Geography
- GEO 3301 (3) Physical Geography
- POL 4402 (3) Political Geography

Select two courses from the following: (6 Hours)
- GIS 4401 (3) Spatial Database Design and Management
- GIS 4405 (3) Spatial Modeling and Programming
- GEM 3391 (3) Application of Geospatial Information Systems
- GEM 4410 (3) Introduction to Global Positions
- CS 3310 (3) Foundations of Computer Sciences

GEOGRAPHY MINOR (18 HOURS)

Required Courses: (9 Hours)
- GEO 3300 (3) Principles of Physical Geography
- GEO 3301 (3) Principles of Cultural Geography

Select an additional 12 hours of approved, upper-level geography courses. GEO 2210 may not be counted toward both general studies and the geography minor.
**HISTORY EDUCATION (36 HOURS)**

Students seeking Alabama teacher certification should select history as a first major and education as a second major. Students should consult with their advisers concerning all certification requirements.

**Specialized General Studies Requirements**

**Area IV**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 2241</td>
<td>(3) American National Government</td>
</tr>
<tr>
<td>SOC 2275</td>
<td>(3) Introduction to Sociology</td>
</tr>
</tbody>
</table>

Select one six-hour sequence:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 1101</td>
<td>(3) Western Civilization I, or placement</td>
</tr>
<tr>
<td>HIS 1102</td>
<td>(3) Western Civilization II, or placement</td>
</tr>
</tbody>
</table>

**Area V Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 2210</td>
<td>(3) World Regional Geography</td>
</tr>
<tr>
<td>HIS 1111</td>
<td>(3) U.S. to 1877, or placement</td>
</tr>
<tr>
<td>HIS 1112</td>
<td>(3) U.S. since 1877, or placement</td>
</tr>
<tr>
<td>IS 2241</td>
<td>(3) Computer Concepts and Apps.</td>
</tr>
<tr>
<td>TROY 1101</td>
<td>(1) University Orientation</td>
</tr>
</tbody>
</table>

**Requirements for the Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 3375</td>
<td>(3) Research and Methodology</td>
</tr>
<tr>
<td>HIS 4490</td>
<td>(3) Senior Seminar</td>
</tr>
</tbody>
</table>

Select one emphasis:

**American/Latin American History Emphasis:**

Select 15 hours of upper-level American/Latin American courses in addition to either HIS 3316 or 4406.

Select an additional nine hours of upper-level European/Asian/African courses in addition to HIS 4451.

**European/Asian/African History Emphasis:**

Select 15 hours of upper-level European/Asian/African courses in addition to HIS 4451.

Select an additional 9 hours of upper-level American/Latin American courses in addition to either HIS 3316 or 4406.

**HISTORY MAJOR (36 HOURS)**

History Majors/Minors will receive credit for no more than six hours of 3000-level and 4000-level history courses taken before or concurrently with HIS 3375.

Select one emphasis below:

**American/Latin American Emphasis:**

**Specialized General Studies Requirements**

**Area IV**

Select a six-hour sequence in Western Civilization or World History. Select additional Area IV courses as specified in the General Studies section of this catalog.

**Area V Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 2210</td>
<td>(3) World Regional Geography</td>
</tr>
<tr>
<td>HIS 1111</td>
<td>(3) U.S. to 1877, or placement</td>
</tr>
<tr>
<td>HIS 1112</td>
<td>(3) U.S. since 1877, or placement</td>
</tr>
<tr>
<td>IS 2241</td>
<td>(3) Computer Concepts and Applications</td>
</tr>
<tr>
<td>TROY 1101</td>
<td>(1) University Orientation</td>
</tr>
</tbody>
</table>

**Requirements for the Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 3375</td>
<td>(3) Research and Methodology</td>
</tr>
<tr>
<td>HIS 4490</td>
<td>(3) Senior Seminar</td>
</tr>
</tbody>
</table>

Select 18 hours of approved upper-level American/Latin American courses.

Select 12 hours of approved upper-level European/Asian/African courses.

**European/Asian/African Emphasis:**

**Specialized General Studies Requirements**

**Area IV**

Select a six-hour sequence in Western Civilization or World History. Select six hours of additional Area IV courses as specified in the General Studies section of this catalog.

**Area V Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS 2241</td>
<td>(3) Computer Concepts and Applications</td>
</tr>
<tr>
<td>TROY 1101</td>
<td>(1) University Orientation</td>
</tr>
<tr>
<td>HIS 1111</td>
<td>(3) U.S. to 1877, or placement</td>
</tr>
<tr>
<td>HIS 1112</td>
<td>(3) U.S. since 1877, or placement</td>
</tr>
<tr>
<td>GEO 2210</td>
<td>(3) World Regional Geography</td>
</tr>
</tbody>
</table>

**Requirements for the Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 3375</td>
<td>(3) Research and Methodology</td>
</tr>
<tr>
<td>HIS 4490</td>
<td>(3) Senior Seminar</td>
</tr>
</tbody>
</table>

Select 18 hours of approved, upper-level European/Asian/African courses.

Select 12 hours of approved, upper-level American/Latin American courses.

**HISTORY MINOR (18 HOURS)**

History Majors/Minors will receive credit for no more than six hours of 3000-level and 4000-level history courses taken before or concurrently with HIS 3375.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIS 3375</td>
<td>(3) Research and Methodology</td>
</tr>
</tbody>
</table>

Select 15 hours of upper-level history courses.

Note: HIS 1111 and HIS 1112 or permission of instructor are prerequisites for upper-level American/Latin American history courses. HIS 1101 and HIS 1102 or HIS 1122 and 1123 or permission of instructor are prerequisite for upper-level European/Asian/African history courses.

**HOMELAND SECURITY MINOR (18 HOURS)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 1101</td>
<td>(3) Introduction to Criminal Justice</td>
</tr>
</tbody>
</table>

Select 15 additional hours from the following as approved by the adviser:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CJ 3305</td>
<td>(3) Foundations of Emergency Management</td>
</tr>
<tr>
<td>CJ 3335</td>
<td>(3) Security Operations</td>
</tr>
<tr>
<td>CJ 4420</td>
<td>(3) Comparative Criminal Justice</td>
</tr>
<tr>
<td>CJ 4405</td>
<td>(3) National Security and the Law</td>
</tr>
<tr>
<td>CJ 4440</td>
<td>(3) Terrorism</td>
</tr>
<tr>
<td>CJ 4470</td>
<td>(3) Criminal Justice Issues in Homeland Security</td>
</tr>
<tr>
<td>CJ 4488</td>
<td>(3) Internship (limit one)</td>
</tr>
<tr>
<td>POL 3364</td>
<td>(3) State and Local Politics</td>
</tr>
<tr>
<td>POL 4415</td>
<td>(3) International Conflict</td>
</tr>
<tr>
<td>POL 4422</td>
<td>(3) Public Policy Making</td>
</tr>
</tbody>
</table>

**HUMANITIES MINOR (18 HOURS)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 3302</td>
<td>(3) History of the Arts</td>
</tr>
<tr>
<td>CLA 2260</td>
<td>(3) Classical Mythology</td>
</tr>
<tr>
<td>CLA 2290</td>
<td>(3) Classical Literature in English Translation</td>
</tr>
</tbody>
</table>
LEADERSHIP DEVELOPMENT MINOR (18 HOURS)

LDR 1100 (3) Introduction to Leadership
LDR 2200 (3) Tools for Leaders
LDR 3300 (3) Leadership Theory
LDR 4400 (3) Leadership Seminar

Select at least an additional six hours from the following:
AS 3312 (3) Air Force Leadership Studies I
AS 3313 (3) Air Force Leadership Studies II
COM 3345 (3) Group Discussion and Leadership
LDR 3310 (3) Leadership and Interpersonal Skills
LDR 3320 (3) Great Leaders
LDR 4444 (3-6) Leadership Internship
LDR 4450 (1-6) Leadership Service Learning
LDR 4493-94 (1-3) Guided Independent Study
MGT 3300 (3) Principles of Management
MSL 2201 (2) Individual Leadership Studies
MSL 2202 (2) Leadership and Teamwork
MSL 2204 (2) Leadership Lab
PHI 2204 (3) Ethics and the Modern World
POL 3340 (3) U.S. Government – Executive Branch

LEGAL STUDIES MINOR (18 HOURS)

Required Courses (9 hours)
LGL 2200 (3) Introduction to Legal Studies
LGL 3300 (3) Legal Research and Writing
LGL 4400 (3) Seminar in Legal Studies

Elective Courses (9 hours)
Select any two (2) courses from the following:

- CJ 2241 (3) Survey of Law and Criminal Procedure
- CJ 4447 (3) Current Issues in Legal Systems Operation and Administration
- LAW 2221 (3) Legal Environment of Business
- POL 3342 (3) Judicial Branch
- POL 4472 (3) Administrative Law

OR

- LAW 4420 (3) Administrative Law

Select one (1) course from the following:

- CJ 2241 (3) Survey of Law and Criminal Procedure
- CJ 3352 (3) Constitutional Law in Criminal Justice

OR

- POL 4420 (3) Constitutional Law
- CJ 4442 (3) Criminal Investigation and Evidence
- CJ 4447 (3) Current Issues in Legal Systems Operation and Administration
- LAW 2221 (3) Legal Environment of Business
- POL 3342 (3) Judicial Branch
- POL 4472 (3) Administrative Law

OR

- LAW 4420 (3) Administrative Law

LIBERAL STUDIES PROGRAM (60 HOURS)

Area IV Requirements
POL 2241 (3) American National Government
POL 2260 (3) World Politics
SOC 2275 (3) Introduction to Sociology

Area V Requirements

PHI 2203 (3) Introduction to Philosophy
PHI 3301 (3) Western Philosophy
REL 2280 (3) World Religions

ANT 2200 (3) Anthropology
ECO 2251 (3) Principles of Macroeconomics
ECO 2252 (3) Principles of Microeconomics
GEO 2210 (3) World Regional Geography
PSY 2200 (3) General Psychology

Required Liberal Studies Courses (30 hours)
LST 3301 (3) Methods in Critical Inquiry
LST 3310 (3) Critical Theory
LST 4499 (3) Senior Seminar in Liberal Studies

Select 21 hours from the following:

Select at least six hours from each of the following for a total of 30 hours:

Societal Studies (select at least six hours):
- ANT 3310 (3) Cultural Anthropology
- ECO 4456 (3) The Economics and Moral Foundations of Capitalism
- ENG 3305 (3) Folklore/Mythology
- ENG 4405 (3) History of the English Language
- GEO 3301 (3) Principles of Cultural Geography
- GEO 4402 (3) Political Geography
- HIS 4466 (3) Renaissance and Reformation
- POL 3300 (3) Foundations of Political Science
- POL 3330 (3) Political Theory
- PSY 3370 (3) Comparative Psychology
- PSY 3380 (3) Social Psychology
- SOC 3300 (3) Social Institutions
- SOC 3301 (3) Social Change

Behavioral Studies (select at least six hours):
- ANT 3360 (3) Magic, Witchcraft, and Religion
- COM 3324 (3) Gender Communications
- POL 3351 (3) International Relations
- POL 4415 (3) International Conflict
- POL 4460 (3) Intercultural Relations
- PSY 3304 (3) Abnormal Psychology
- PSY 3312 (3) Psychology of Women
- PSY 3370 (3) Comparative Psychology
- PSY 3380 (3) Social Psychology
- SOC 3332 (3) Family Violence
- SOC 4409 (3) Political Sociology
- SOC 4436 (3) Social Evolution: Anarchy to Democracy

Cognitive and Language Studies (select at least six hours):
- ANT 3340 (3) Language in Culture and Society
- COM 3341 (3) American Public Address
- COM 3328 (3) International/Intercultural Communications
- ENG 3305 (3) Folklore/Mythology
- ENG 3320 (3) Introduction to Linguistics
- ENG 4405 (3) History of the English Language
- ENG 4433 (3) Literary Criticism
Global Studies (select at least six hours):

- ANT 3310 (3) Cultural Anthropology
- ANT 3320 (3) Prehistory of North American Indians
- ANT 3321 (3) North American Indians Since Contact
- ANT 4410 (3) High Civilizations of the Old World
- ANT 4411 (3) High Civilizations of the New World
- GEO 4555 (3) Comparative Economic Systems
- ENG 4465 (3) African American Literature
- GEO 3301 (3) Principles of Physical Geography
- GEO 4442 (3) Political Geography
- POL 3351 (3) International Relations
- POL 4410 (3) International Political Economy
- POL 4433 (3) Comparative Governments

MARINE BIOLOGY PROGRAM (56 HOURS)

*Special Topics in Biology (BIO 4476), Guided Independent Studies (BIO 4491/4492) and Guided Independent Research (BIO 4493, 4494) may only be taken for a maximum of 6 semester hours.

Students must take courses at both Troy University and Dauphin Island Sea Lab.

Specialized General Studies Requirements

**Area III**

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

**Area V Requirements**

- IS 2241 (3) Computer Concepts and Applications
- TROY 1101 (1) University Orientation
- BIO 1101 (3) Organismal Biology
- BIO L101 (1) Organismal Biology Lab
- CHM 1143 (3) General Chemistry II
- CHM L143 (1) General Chemistry II Lab

Complete one sequence (physics sequence not required for medical technology concentration):

- PHY 2252 (3) General Physics I
- PHY L251 (1) General Physics I Lab
- PHY 2253 (3) General Physics II
- PHY L251 (1) General Physics II Lab
- OR
- PHY 2262 (3) Physics I with Calculus
- PHY L262 (1) Physics I with Calculus Lab
- PHY 2263 (3) Physics II with Calculus
- PHY L263 (1) Physics II with Calculus Lab

Requirements for the Program

Lectures and corresponding labs must be taken together.

- BIO 2220 (3) Principles of Cell Biology
- BIO L220 (1) Principles of Cell Biology Lab
- BIO 2229 (3) General Ecology
- BIO L229 (1) General Ecology Lab
- BIO 3320 (3) Genetics
- BIO L320 (1) Genetics Lab
- BIO 4484 (1) Senior Seminar in Biological & Environment Sciences
- 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) Introductory Statistics

**Troy University Courses:**

- BIO 3307 (3) Invertebrate Zoology
- BIO L307 (1) Invertebrate Zoology Lab

Complete 12 additional semester hours of adviser-approved biology or marine biology (MB) courses.

**Dauphin Island Sea Lab (DISL) Courses (16 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.

Complete 16 semester hours of MB courses approved by the DISL liaison and Department Chair.

**MATHEMATICS EDUCATION**

Students seeking Alabama teacher certification should select mathematics as a first major and education as a second major. Students should consult with their advisers concerning all certification requirements.

**MATHEMATICS MAJOR (38 HOURS)**

**Specialized General Studies Requirements**

**Area III**

- MTH 1125 (4) Calculus I

**Area V Requirements**

- TROY 1101 (1) University Orientation
- MTH 2210 (3) Introductory Statistics
- MTH 2220 (3) Computer Programming for Mathematics

**Requirements for the Major**

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

Select one of the following:

- MTH 4425 (3) Real Analysis II
- MTH 4442 (3) Abstract Algebra II

OR both of the following:

- MTH 4451 (3) Mathematical Statistics I
- MTH 4452 (3) Mathematical Statistics II

Students selecting MTH 4451 and MTH 4452: select nine more hours of mathematics courses at the 3000 level and above (excluding MTH 4481).

Students selecting MTH 4425 or MTH 4442: select 12 hours of mathematics courses at the 3000 level and above (excluding MTH 4481).

Students seeking Alabama teacher certification must select MTH 3325 and MTH 4451.

**MATHEMATICS MINOR (18 HOURS)**

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

Select an additional three hours of math courses at the 3000 level and above, other than those courses whose catalog description declares that they do not count toward the major or minor.
PHILOSOPHY AND RELIGION MINOR (18 HOURS)

Select 9 hours from the following:

- PHI 2201 (3) Introduction to Political Philosophy
- PHI 2203 (3) Introduction to Philosophy
- PHI 2204 (3) Ethics and the Modern World
- PHI 2205 (3) Introduction to Logic
- PHI 2210 (3) Critical Thinking
- REL 2280 (3) World Religions

Select 9 hours from the following upper division courses. At least 6 hours must be philosophy (PHI) courses:

- ANT 3340 (3) Language in Culture and Society
- ANT 3360 (3) Magic, Witchcraft, and Religion
- CLA 3311 (3) Civilization of Greece
- HIS 3330 (3) History of Western Thought
- HIS 3356 (3) History of the Middle East
- HIS 4463 (3) The Age of Reason
- PHI 3301 (3) Western Philosophy
- PHI 3310 (3) Applied Ethics
- PHI 3320 (3) Non-Western Philosophies
- PHI 3322 (3) Philosophy of Religion
- PHI 3365 (3) Bioethics in Historical Context
- PHI 4493-94 (3) Guided Independent Study

Select 9 hours from the following:

- PHI 2204 (3) Ethics and the Modern World
- PHI 2205 (3) Introduction to Logic
- PHI 3301 (3) Western Philosophy
- PHI 3310 (3) Applied Ethics
- PHI 3320 (3) Non-Western Philosophies
- PHI 3322 (3) Philosophy of Religion
- PHI 3365 (3) Bioethics in Historical Context
- PHI 4493-94 (3) Guided Independent Study

PHILOSOPHY AND RELIGION MINOR (18 HOURS)

Area I Requirements:

- COM 2241 (3) Fundamentals of Speech

Area IV Requirements:

Select one 2000 level 3-hour course from one of the following areas: Psychology, Sociology, or Political Science.

- MSL 3301 (3) Leadership and Problem Solving
- MSL 3302 (3) Leadership and Ethics
- MSL 3304 (1) Military Advanced Leadership Lab 111-A
- MSL 3305 (1) Military Advanced Leadership Lab 111-B
- MSL 4401 (3) Leadership and Management
- MSL 4402 (3) Officer Lab
- MSL 4404 (1) Military Advanced Leadership Lab IV-A
- MSL 4405 (1) Military Advanced Leadership Lab IV-B
- MSL 4497 (1-3) Senior Seminar in Military Science

Select a three-hour military history course approved by the professor of military science.

Area V Requirements:

Select any minor offered by Troy University (18 Hours)

POLITICAL SCIENCE MAJOR (36 HOURS)

Area V Requirements:

- IS 2241 (3) Computer Concepts and Applications
- TROY 1101 (1) University Orientation
- POL 2241 (3) American National Government or placement in POL 2240
- POL 2260 (3) World Politics

Major Requirements:

- POL 3300 (3) Foundations of Political Science
- POL 3330 (3) Political Theory
- POL 3390 (3) The Art of Political Science Research

PHYSICS MINOR (19 HOURS)

Select a minimum of 10 semester hours from the courses listed below:

- PHY 3320 (3) Mathematical Methods for Physicists
- PHY 3321 (3) Equations of Mathematical Physics
- PHY 3359 (3) Waves and Optics
- PHY L359 (1) Waves and Optics Lab
- PHY 4438 (3) Electromagnetic Fields
- PHY 4440 (3) Dynamics of Particles & Systems
- PHY 4446 (3) Quantum Mechanics II
- PHY 4460 (3) Special Relativity
- PHY 4470 (3) Nuclear Physics
- PHY 4475 (3) Particle Physics
- PHY 4478 (3) Intro to General Relativity
- PHY 4480 (3) Black Holes & Cosmology
- PHY 4482 (3) Introduction to String Theory
- PHY 4495 (3) Topics in Physics
- PHY 4491-92 (3) Guided Independent Research
- PHY 4493-94 (3) Guided Independent Study

Select any minor offered by Troy University (18 Hours)
Select one of the following concentrations:

**American Politics and Public Administration Concentration**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3340</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3341</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3342</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Students must also meet requirements for the graduate program. At least 90 credit hours, and 18 hours of political science courses.

Select six hours from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3343</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3355</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3364</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3338</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3339</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4405</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4420</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4421</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4422</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4424</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4432</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4451</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4453</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4469</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4472</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Select an additional 12 hours of upper level (3000-4000) political science courses, as approved by your academic adviser.

**International Politics Concentration**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3351</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4410</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4433</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Select six hours from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 4405</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4415</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4424</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4432</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4445</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4450</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4452</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4460</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4464</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4465</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4466</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4467</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4468</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4470</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4474</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4476</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Select an additional 12 hours of upper level (3000-4000) political science courses, as approved by your academic adviser.

**Accelerated Honors Requirements:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>*IR 5551</td>
<td>(3)</td>
</tr>
<tr>
<td>*IR 6601</td>
<td>(3)</td>
</tr>
<tr>
<td>*IR 6620</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Select an additional 3 hours of upper level (3000-4000) political science courses, as approved by your academic adviser.

*Registration for courses marked with an asterisk is restricted to students who have been admitted to International Relations Concentration Accelerated Honors Option, have completed at least 90 credit hours, and 18 hours of political science courses. Students must also meet requirements for the graduate program.*

**POLITICAL SCIENCE MINOR (18 HOURS)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3300</td>
<td>(3)</td>
</tr>
</tbody>
</table>

**American Politics Minor (18 Hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3343</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3355</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3364</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3338</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 3339</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4405</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4420</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4421</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4422</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4424</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4432</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4451</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4453</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4469</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4472</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Select an additional 12 hours of upper level (3000-4000) political science courses, as approved by your academic adviser.

**International Relations Minor (18 Hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 3351</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4410</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4433</td>
<td>(3)</td>
</tr>
</tbody>
</table>

Select three from the following courses (9 hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL 4405</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4415</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4424</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4432</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4445</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4450</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4452</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4460</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4464</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4465</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4466</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4467</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4468</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4470</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4474</td>
<td>(3)</td>
</tr>
<tr>
<td>POL 4476</td>
<td>(3)</td>
</tr>
</tbody>
</table>

**SCIENCE EDUCATION**

Students seeking Alabama teacher certification should select the comprehensive science program as a first major and education as a second major. Students should consult with their advisers concerning all certification requirements.

**SOCIAL SCIENCE EDUCATION**

Students seeking Alabama teacher certification should complete the social science major with a general social science concentration and select education as a second major.
should consult their education advisers concerning all certification requirements and with their academic discipline adviser for requirements in the major.

**SOCIAL SCIENCE MAJOR (36 HOURS)**

**Specialized General Studies Requirements**

**AREA IV**
NOTE: Social Science major with a concentration should take Area IV electives appropriate for their concentration.

**Requirements for the Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS 3375</td>
<td>(3)</td>
<td>Introduction to Social Science Inquiry</td>
</tr>
<tr>
<td>SS 3376</td>
<td>(3)</td>
<td>Statistical Applications of Social Science Inquiry</td>
</tr>
<tr>
<td>SS 3377</td>
<td>(3)</td>
<td>Spacial Applications of Social Science Inquiry</td>
</tr>
<tr>
<td>SS 4498</td>
<td>(3)</td>
<td>Social Science Theory</td>
</tr>
<tr>
<td>SS 4499</td>
<td>(3)</td>
<td>Senior Seminar</td>
</tr>
</tbody>
</table>

Select one of the following concentrations:

**General Social Science Concentration:**
Select at least 21 hours of additional 3000/4000-level courses from anthropology, economics, geography, history, political science, psychology or sociology (six hours may be used from ECO 2251, ECO 2252, GEO 2210, ANT 2200, POL 2260 [World Politics], or SOC 2280) in at least three disciplines.

**Geography Concentration:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEO 3300</td>
<td>(3)</td>
<td>Principles of Physical Geography</td>
</tr>
<tr>
<td>GEO 3301</td>
<td>(3)</td>
<td>Principles of Cultural Geography</td>
</tr>
</tbody>
</table>

Select at least 15 hours of additional 3000/4000-level courses as approved by your faculty adviser:

**Leadership Development Concentration:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDR 1100</td>
<td>(3)</td>
<td>Introduction to Leadership</td>
</tr>
<tr>
<td>LDR 2200</td>
<td>(3)</td>
<td>Tools for Leaders</td>
</tr>
<tr>
<td>LDR 3300</td>
<td>(3)</td>
<td>Leadership Theory</td>
</tr>
<tr>
<td>LDR 4400</td>
<td>(3)</td>
<td>Leadership Seminar</td>
</tr>
</tbody>
</table>

Select an additional 9 hours from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS 3312</td>
<td>(3)</td>
<td>Air Force Leadership Studies I</td>
</tr>
<tr>
<td>AS 3313</td>
<td>(3)</td>
<td>Air Force Leadership Studies II</td>
</tr>
<tr>
<td>COM 3345</td>
<td>(3)</td>
<td>Group Discussion and Leadership</td>
</tr>
<tr>
<td>HIS 4415</td>
<td>(3)</td>
<td>Contemporary America</td>
</tr>
<tr>
<td>LDR 3310</td>
<td>(3)</td>
<td>Leadership and Interpersonal Skills</td>
</tr>
<tr>
<td>LDR 3320</td>
<td>(3)</td>
<td>Great Leaders</td>
</tr>
<tr>
<td>MGT 3300</td>
<td>(3)</td>
<td>Principles of Management</td>
</tr>
<tr>
<td>MSL 2202</td>
<td>(2)</td>
<td>Leadership and Teamwork</td>
</tr>
<tr>
<td>MSL 2204</td>
<td>(1)</td>
<td>Leadership Lab</td>
</tr>
<tr>
<td>POL 4422</td>
<td>(3)</td>
<td>Public Policy Making</td>
</tr>
<tr>
<td>POL 3351</td>
<td>(3)</td>
<td>Foundations of International Relations</td>
</tr>
<tr>
<td>POL 4421</td>
<td>(3)</td>
<td>Introduction to Public Administration</td>
</tr>
<tr>
<td>PSY 4410</td>
<td>(3)</td>
<td>Business and Industrial Psychology</td>
</tr>
<tr>
<td>SOC 3301</td>
<td>(3)</td>
<td>Collective Behavior and Social Movements</td>
</tr>
<tr>
<td>SOC 3302</td>
<td>(3)</td>
<td>Small Groups</td>
</tr>
</tbody>
</table>

**SOCIAL SCIENCE MINOR: GENERAL SOCIAL SCIENCE (18 HOURS)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS 4498</td>
<td>(3)</td>
<td>Social Science Theory</td>
</tr>
</tbody>
</table>

Select an additional 15 hours from at least three of the following: anthropology, economics, geography, history, political science, psychology, social science, or sociology. At least 12 hours must be 3000/4000 level.

**SOCIOLOGY MAJOR (36 HOURS)**

**Area IV Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 2275</td>
<td>(3)</td>
<td>Introduction to Sociology</td>
</tr>
</tbody>
</table>

**Area V Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS 2241</td>
<td>(3)</td>
<td>Computer Concepts and Applications</td>
</tr>
<tr>
<td>TROY 1101</td>
<td>(1)</td>
<td>University Orientation</td>
</tr>
<tr>
<td>SOC 2280</td>
<td>(3)</td>
<td>Social Problems in Contemporary Society</td>
</tr>
</tbody>
</table>

**Required for the Major**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 4420</td>
<td>(3)</td>
<td>Sociological Theory</td>
</tr>
<tr>
<td>SS 3375</td>
<td>(3)</td>
<td>Introduction to Social Science Inquiry</td>
</tr>
<tr>
<td>SS 3376</td>
<td>(3)</td>
<td>Statistical Applications of Social Science Inquiry</td>
</tr>
<tr>
<td>SS 4499</td>
<td>(3)</td>
<td>Senior Seminar</td>
</tr>
</tbody>
</table>

Select an additional 24 hours of approved upper-level sociology courses.

**SOCIOLOGY MINOR (18 HOURS)**

Select 18 hours of approved, upper-level Sociology courses. SOC 2280 may be applied toward the minor.

**SURVEYING AND GEOMATICS SCIENCES PROGRAM (53 HOURS)**

**Area II**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 2201</td>
<td>(3)</td>
<td>Introductory Drawing</td>
</tr>
</tbody>
</table>

Select remaining Area II courses as specified in the General Studies section of this catalog.

**Area III Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH 1125</td>
<td>(4)</td>
<td>Calculus I</td>
</tr>
</tbody>
</table>

Select an 8 hour physics sequence with labs:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 2252</td>
<td>(3)</td>
<td>General Physics I</td>
</tr>
<tr>
<td>PHY L252</td>
<td>(1)</td>
<td>General Physics I Laboratory</td>
</tr>
<tr>
<td>PHY 2253</td>
<td>(3)</td>
<td>General Physics II</td>
</tr>
<tr>
<td>PHY L253</td>
<td>(1)</td>
<td>General Physics II Laboratory</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHY 2262</td>
<td>(3)</td>
<td>Physics I with Calculus</td>
</tr>
<tr>
<td>PHY L262</td>
<td>(1)</td>
<td>Physics I with Calculus Laboratory</td>
</tr>
<tr>
<td>PHY 2263</td>
<td>(3)</td>
<td>Physics II with Calculus</td>
</tr>
<tr>
<td>PHY L263</td>
<td>(1)</td>
<td>Physics II with Calculus Laboratory</td>
</tr>
</tbody>
</table>

**Area V Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 2250</td>
<td>(3)</td>
<td>Computer Science I</td>
</tr>
<tr>
<td>IS 2241</td>
<td>(3)</td>
<td>Computer Concepts &amp; Application</td>
</tr>
<tr>
<td>MTH 1126</td>
<td>(4)</td>
<td>Calculus II</td>
</tr>
<tr>
<td>MTH 2210</td>
<td>(3)</td>
<td>Applied Statistics</td>
</tr>
<tr>
<td>TROY 1101</td>
<td>(1)</td>
<td>University Orientation</td>
</tr>
</tbody>
</table>

**Program Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEM 1100</td>
<td>(2)</td>
<td>Computer-Aided Drafting I</td>
</tr>
<tr>
<td>GEM 1101</td>
<td>(2)</td>
<td>Computer-Aided Drafting II</td>
</tr>
<tr>
<td>GEM 2220</td>
<td>(3)</td>
<td>Basics of Surveying</td>
</tr>
<tr>
<td>GEM L220</td>
<td>(1)</td>
<td>Basics of Surveying Lab</td>
</tr>
<tr>
<td>GEM 3309</td>
<td>(3)</td>
<td>Land Survey Principles</td>
</tr>
<tr>
<td>GEM L309</td>
<td>(1)</td>
<td>Land Survey Principles Lab</td>
</tr>
<tr>
<td>GEM 3310</td>
<td>(3)</td>
<td>Land Survey Practice</td>
</tr>
<tr>
<td>GEM L310</td>
<td>(1)</td>
<td>Land Survey Practice Lab</td>
</tr>
<tr>
<td>GEM 3330</td>
<td>(3)</td>
<td>Advanced Measurement Analysis Lab</td>
</tr>
<tr>
<td>GEM L330</td>
<td>(1)</td>
<td>Advanced Measurement Analysis Lab</td>
</tr>
<tr>
<td>GEM 3366</td>
<td>(3)</td>
<td>Photogrammetry and Remote Sensing</td>
</tr>
<tr>
<td>GEM 3379</td>
<td>(3)</td>
<td>Introduction to Least Squares Adjustment</td>
</tr>
</tbody>
</table>
GEM 3390 (3) Fundamentals of Geographic Information and Analysis
GEM 3391 (3) Application of Geospatial Information Science
GEM 4405 (3) Route & Construction Surveying
GEM L405 (1) Route & Construction Surveying Lab
GEM 4407 (3) Land Development
GEM L407 (1) Land Development Lab
GEM 4408 (3) Geodesy & Geodetics
GEM 4409 (3) Hydrology
GEM L409 (1) Hydrology Lab
GEM 4410 (3) Introduction to Global Positions
GEM 4490 (1) Geomatics Capstone

Select two hours below:
GEM 4499 (2) Geomatics/GIS Projects
OR
GEM 3395 (1) Cooperative Work Experience I and
GEM 4496 (1) Cooperative Work Experience II