The College of Arts and Sciences is, from both historical and functional points of view, the core of the modern university. The College of Arts and Sciences views creativity, inquiry and understanding as among the greatest values in human experience. Thus, it is dedicated to the questioning, creation and transmission of knowledge; to the provision of undergraduate and graduate educational programs that are responsive to the need for an enlightened and productive citizenry; and to the provision of programs and services that enhance the quality of life of the people it serves. 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.

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.

# **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.

# 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.

#### **ARCHIVAL STUDIES MINOR (18 HOURS)**

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

Select two courses from the following, including at least one at the 4000 level:

4000 level:		
GEO/HIS3316	(3)	History of Alabama
GEO/SOC4406	(3)	Urbanism
HIS 4405	(3)	Old South
HIS 4406	(3)	New South
HIS/POL 4441	(3)	American Constitutional Develop.
HIS 4470	(3)	Oral History
HIS 4471	(3)	Local History
MGT 4471	(3)	Organizational Development
MGT 4474	(3)	Business and Society
POL 4421	(3)	Introduction to Public Administration
SOC 4433	(3)	The Community
SOC 4435	(3)	The Sociology of Complex Societies

# **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)**

#### **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 Apps.
TROY 1101	(1)	University Orientation

#### Select one sequence:

PHY 2252

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

(3)

General Physics I

#### **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

Select one hoto	inv course w	vith its corresponding lab:	BIO 4430	(3)	Applied Genetics
BIO 3325	(3)	Plant Form and Function	BIO L430	(1)	Applied Genetics Lab
BIO L325	(1)	Plant Form and Function Lab	BIO 4433	(3)	Embryology
BIO 3326	(3)	Plant Diversity	BIO L433	(1)	Embryology Embryology Lab
BIO L326	(1)	Plant Diversity Lab	BIO 4451	(3)	Toxicology
BIO 4402	(4)	Spring Flora	BIO L451	(1)	Toxicology Lab
BIO 4425	(4)	Field Botany	BIO 4478	(3)	Cell Biology
DIO 4423	(4)	1 icid Botany	BIO 1478	(1)	Cell Biology Lab
Salaat ona zool	omi anima	with its compensating lab	BIO 4480		Histology
BIO 3307		with its corresponding lab: Invertebrate Zoology	BIO L480	(3)	Histology Histology Lab
BIO 5307 BIO L307	(3)	Invertebrate Zoology Invertebrate Zoology Lab	BIO 4482	(1)	Molecular Biology
BIO 2307	(1)	Vertebrate Zoology	BIO L482	(3) (1)	Molecular Biology  Molecular Biology Lab
BIO 5308 BIO L308	(3)	Vertebrate Zoology Vertebrate Zoology Lab	DIO L462	(1)	Molecular Biology Lab
	(1)	65	Calast and umma	u loval aday	is an appropriate his last account and its
BIO 4405	(3)	Entomology	corresponding l		iser-approved biology course and its
BIO L405	(1)	Entomology Lab	corresponding i	uo.	
BIO 4410	(3)	Animal Behavior		DIOI OC	V MINOD (10 20 HOUDS)
BIO L410	(1)	Animal Behavior Lab			Y MINOR (18-20 HOURS)
BIO 4420	(4)	Field Vertebrate Zoology			ading labs must be taken together:
BIO 4432	(3)	Comparative Vertebrate Anatomy	BIO 1101	(3)	Organismal Biology
BIO L432	(1)	Comparative Vertebrate Anatomy Lab	BIO L101	(1)	Organismal Biology Lab
BIO 4445	(3)	Ichthyology	BIO 2229	(3)	General Ecology
BIO 1445 BIO L445	(1)	Ichthyology Lab	BIO L229	(1)	General Ecology Lab
BIO 4446		Herpetology	BIO 3320	(3)	Genetics
BIO L446	(3)	Herpetology Lab	BIO L320	(1)	Genetics Lab
BIO 4447	(1)	Ornithology			
	(3)				corresponding lab:
BIO L447 BIO 4448	(1)	Ornithology Lab	BIO 2220	(3)	Principles of Cell Biology
	(3)	Mammalogy	BIO L220	(1)	Principles of Cell Biology Lab
BIO L448	(1)	Mammalogy Lab	BIO 3372	(3)	Microbiology
BIO 4471	(3)	Parasitology	BIO L372	(1)	Microbiology Lab
DIO I 471	(1)	Damanitala and Lab		(-)	
BIO L471	(1)	Parasitology Lab		(1)	
		-	Select 2-4 addit	ional seme	ster hours of approved upper-level
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Select one ecolab:	ology/enviro	nmental course with its corresponding	Select 2-4 addit	ional seme	ster hours of approved upper-level
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Select one ecolab:	ology/enviro	nmental course with its corresponding  Principles of Environmental Science Principles of Environmental Science	Select 2-4 addit (3300 or above)	ional seme. biology co	ster hours of approved upper-level nurses with corresponding labs.  PROGRAM (55 HOURS)
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Select one ecolab: BIO 2202 BIO L202 BIO L202 BIO 4413 BIO L413 BIO 4416 BIO L416 BIO 4421 BIO L421 BIO L427 BIO L479 Select one corresponding BIO 3347 BIO L347 BIO L348 BIO L348 BIO L348 BIO 3382 BIO L382 BIO 3386	(3) (1) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Principles of Environmental Science Principles of Environmental Science Principles of Environmental Science Lab Limnology Limnology Lab Microbial Ecology Microbial Ecology Population E	Select 2-4 addit (3300 or above)  Specialized Ge Area III BIO 1100 BIO L100 CHM 1142 CHM L142 MTH 1125 Area V Requir IS 2241 TROY 1101 BIO 1101 BIO L101 CHM 1143 CHM L143  Select one sequence of the contrology	(3) (1) (3) (1) (4) (3) (1) (3) (1) (4) (4) (5) (6) (7) (7) (8) (9) (1) (1) (1) (2) (1) (3) (1) (3) (1) (3) (1) (3) (1) (4) (5) (6) (7) (7) (8) (8) (9) (9) (9) (9) (9) (9) (9) (9) (9) (9	ster hours of approved upper-level nurses with corresponding labs.  PROGRAM (55 HOURS)  ies Requirements  Principles of Biology Principles of Biology Lab General Chemistry I General Chemistry I Lab Calculus I  Computer Concepts and Apps. University Orientation Organismal Biology Organismal Biology Organismal Biology Lab General Chemistry II General Chemistry II Lab
Select one ecolab: BIO 2202 BIO L202 BIO L202 BIO L413 BIO L413 BIO 4416 BIO L416 BIO L421 BIO L421 BIO L429 Select one corresponding BIO 3347 BIO L347 BIO L348 BIO L348 BIO L382 BIO L386 BIO L386	(3) (1) (3) (1	Principles of Environmental Science Principles of Environmental Science Principles of Environmental Science Lab Limnology Limnology Lab Microbial Ecology Microbial Ecology Population E	Select 2-4 addit (3300 or above)  Specialized Ge Area III BIO 1100 BIO L100 CHM 1142 CHM L142 MTH 1125 Area V Requir IS 2241 TROY 1101 BIO 1101 BIO L101 CHM 1143 CHM L143  Select one sequence of the characteristic of the sequence of the characteristic of the chara	(3) (1) (3) (1) (4)  rements (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3)	ster hours of approved upper-level purses with corresponding labs.  PROGRAM (55 HOURS)  ies Requirements  Principles of Biology Principles of Biology Lab General Chemistry I General Chemistry I Lab Calculus I  Computer Concepts and Apps. University Orientation Organismal Biology Organismal Biology Organismal Biology Lab General Chemistry II General Chemistry II General Chemistry II Lab  sics sequence not required for medical General Physics I General Physics I Lab General Physics II
Select one ecolab: BIO 2202 BIO L202 BIO L202 BIO L413 BIO L413 BIO 4416 BIO L416 BIO L421 BIO L421 BIO L427 BIO L479 Select one corresponding BIO 3347 BIO L347 BIO L348 BIO L348 BIO L382 BIO L386 BIO L386 BIO L386 BIO L414	(3) (1) (3) (1	Principles of Environmental Science Principles of Environmental Science Principles of Environmental Science Lab Limnology Limnology Lab Microbial Ecology Microbial Ecology Population Ecology Population Ecology Population Ecology Population Ecology Lab Environmental Assessment Environmental Assessment Environmental Assessment Lab  W/cell/molecular course with its  Human Anatomy and Physiology I Human Anatomy and Physiology I Lab Human Anatomy and Physiology II Lab Immunology Immunology Immunology Immunology Immunology Hematology Hematology Lab Food Microbiology	Select 2-4 addit (3300 or above)  Specialized Ge Area III  BIO 1100  CHM 1142  CHM L142  MTH 1125  Area V Requir IS 2241  TROY 1101  BIO 1101  CHM 1143  CHM L143  Select one sequence of technology conceptive c	(3) (1) (3) (1) (4)  rements (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3)	ster hours of approved upper-level burses with corresponding labs.  Z PROGRAM (55 HOURS)  ies Requirements  Principles of Biology Principles of Biology Lab General Chemistry I General Chemistry I Lab Calculus I  Computer Concepts and Apps. University Orientation Organismal Biology Organismal Biology Organismal Biology Lab General Chemistry II General Chemistry II General Chemistry II Lab  sics sequence not required for medical General Physics I General Physics I Lab General Physics II Lab Physics I with Calculus
Select one ecolab: BIO 2202 BIO L202 BIO L202 BIO L413 BIO L413 BIO 4416 BIO L416 BIO L421 BIO L421 BIO L429 Select one corresponding BIO 3347 BIO L347 BIO L348 BIO L348 BIO L382 BIO L386 BIO L386	(3) (1) (3) (1	Principles of Environmental Science Principles of Environmental Science Principles of Environmental Science Lab Limnology Limnology Lab Microbial Ecology Microbial Ecology Population E	Select 2-4 addit (3300 or above)  Specialized Ge Area III BIO 1100 BIO L100 CHM 1142 CHM L142 MTH 1125 Area V Requir IS 2241 TROY 1101 BIO 1101 CHM 1143 CHM L143  Select one sequence of technology concepty 2252 PHY L252 PHY L253 PHY L253 or	(3) (1) (3) (1)	ster hours of approved upper-level burses with corresponding labs.  Z PROGRAM (55 HOURS)  ies Requirements  Principles of Biology Principles of Biology Lab General Chemistry I General Chemistry I Lab Calculus I  Computer Concepts and Apps. University Orientation Organismal Biology Organismal Biology Organismal Biology Lab General Chemistry II General Chemistry II General Chemistry II Lab  sics sequence not required for medical General Physics I General Physics I Lab General Physics II General Physics II Lab

PHY 2263	(3)	Physics II with Calculus
PHY L263	(1)	Physics II with Calculus Lab
Requirements		
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

Students in the general biology concentration, ecology and field biology concentration, or medical technology concentration select:

BIO 2220	(3)	Principles of Cell Biology
BIO L220	(1)	Principles of Cell Biology Lab

Students in the biomedical sciences concentration or food safety concentration, select:

BIO 3372	(3)	Microbiology
BIO L372	(1)	Microbiology Lab

Select one of the five concentrations shown below (biomedical sciences, food safety, general biology, ecology and field biology, or medical technology):

# · 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

Select 16 hours (four lectures with labs) from the courses listed below. With the adviser's approval, one upper level botany, ecology or zoology course with its corresponding laboratory course may be taken.

BIO 3382	(3)	Immunology
BIO L382	(1)	Immunology Lab
BIO 4416	(3)	Microbial Ecology
BIO L416	(1)	Microbial Ecology Lab
BIO 4430	(3)	Applied Genetics
BIO L430	(1)	Applied Genetics Lab
BIO 4451	(3)	Toxicology
BIO L451	(1)	Toxicology Lab
BIO 4471	(3)	Parasitology
BIO L471	(1)	Parasitology Lab
BIO 4480	(3)	Histology
BIO L480	(1)	Histology Lab
CHM 3352	(3)	Biochemistry
CHM L352	(1)	Biochemistry Lab

#### · Food Safety Concentration

BIO 3372	(3)	Microbiology
BIO L372	(1)	Microbiology Lab
BIO 4414	(3)	Food Microbiology
BIO L414	(1)	Food Microbiology Lab
BIO 4451	(3)	Toxicology
BIO L451	(1)	Toxicology Lab
BIO 4418	(3)	Food Laws and Regulations
CHM 3352	(3)	Biochemistry
CHM L352	(1)	Biochemistry Lab
MGT 4466	(3)	Restaurant Management
NSG 2211	(3)	Human Nutrition

Select 7 or more hours from the courses listed below. Lectures and their corresponding labs must be taken together.

BIO 3382	(3)	Immunology	
BIO L382	(1)	Immunology Lab	
BIO 4416	(3)	Microbial Ecology	
BIO L416	(1)	Microbial Ecology Lab	
BIO 4471	(3)	Parasitology	
BIO L471	(1)	Parasitology Lab	
BIO 4478	(3)	Cell Biology	
BIO L478	(1)	Cell Biology Lab	
BIO 4482	(3)	Molecular Biology	
BIO L482	(1)	Molecular Biology Lab	
BIO 4488/4489/44	190	(1-8) Internship in the Biological or	
		Environmental Sciences	
CHM 4455	(3)	Instrumental Analysis	
CHM L455	(1)	Instrumental Analysis Lab	
MGT 3372	(3)	Hospitality Management	
MGT 4465	(3)	Food and Beverage Service	

# · General Biology Concentration

Select one bot	any course wit	h its corresponding lab:
BIO 3325	(3)	Plant Form and Function
BIO L325	(1)	Plant Form and Function Lab
BIO 3326	(3)	Plant Diversity
BIO L326	(1)	Plant Diversity Lab
BIO 4402	(4)	Spring Flora
BIO 4425	(4)	Field Botany

Select one zoology course with its corresponding lab:

BIO 3307	(3)	Invertebrate Zoology
BIO L307	(1)	Invertebrate Zoology Lab
BIO 3308	(3)	Vertebrate Zoology
BIO L308	(1)	Vertebrate Zoology Lab
BIO 4405	(3)	Entomology
BIO L405	(1)	Entomology Lab
BIO 4410	(3)	Animal Behavior
BIO L410	(1)	Animal Behavior Lab
BIO 4420	(4)	Field Vertebrate Zoology
BIO 4432	(3)	Comparative Vertebrate Anatomy
BIO L432	(1)	Comparative Vertebrate Anatomy
		Lab
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

DIO 4440	(2)				
BIO 4448	(3)	Mammalogy			
BIO L448	(1)	Mammalogy Lab			
BIO 4471	(3)	Parasitology			
BIO L471	(1)	Parasitology Lab			
Select one ecology lab:	/environm	ental course with its corresponding			
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			
Select one ph corresponding lab		cell/molecular course with its			
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 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 4433	(3)	Embryology			
BIO L433	(1)	Embryology Lab			
BIO 4451	(3)	Toxicology			
BIO L451	(1)	Toxicology Lab			
BIO 4478	(3)	Cell Biology			
BIO L478	(1)	Cell Biology Lab			
BIO 4480	(3)	Histology			
BIO L480	(1)	Histology Lab			
BIO 4482	(3)	Molecular Biology			
BIO L482	(1)	Molecular Biology Lab			
Select 16 addition	al semeste	er hours (four courses with labs) from			

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 six of these credits. BIO 4491 and 4493 may be mixed and taken in any sequence for up to six credits. However, the two course sequences of BIO 4491/4492 and BIO 4493/4494 may not be taken for more than six credits regardless of the mix. The 16 hours chosen should be based on the student's future plans (employment, graduate school, or professional school).

## · Ecology and Field Biology Concentration

			90
BIO	4420	(4)	Field Vertebrate Zoology
BIO	4421	(3)	Population Ecology
BIO	L421	(1)	Population Ecology Lab
BIO	4425	(4)	Field Botany

Select 12 hours (three courses with labs) from the three categories below. At least one course must be taken from each of the three categories.

categories.		
Zoology		
BIO 3307	(3)	Invertebrate Zoology
BIO L307	(1)	Invertebrate Zoology Lab
BIO 4405	(2)	Entomology
BIO L405	(2)	Entomology Lab
Botany		
BIO 3325	(3)	Plant Form and Function
BIO L325	(1)	Plant Form and Function Lab
BIO 3326	(3)	Plant Diversity
BIO L326	(1)	Plant Diversity Lab
Ecology		
BIO 4413	(3)	Limnology
BIO L413	(1)	Limnology Lab
BIO 4479	(3)	Environmental Assessment
BIO L479	(1)	Environmental Assessment Lab
MB 4406	(4)	Marsh Ecology

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

#### · 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)	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

Select one course with its corresponding lab:

BIO 3386	(3)	Hematology
BIO L386	(1)	Hematology Lab
BIO 4471	(3)	Parasitology
BIO L471	(1)	Parasitology Lab

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

BIOLOGY	Y, PREPR	OFESSIONAL MAJOR (55 HOURS)	BIO 4430	(3)	Applied Genetics
Specialized General Studies Requirements		BIO L430	(1)	Applied Genetics Lab	
Area III (12 Hours)		BIO 4432	(3)	Comparative Vertebrate Anatomy	
BIO 1100	(3 )	Principles of Biology	BIO L432	(1)	Comparative Vertebrate Anatomy Lab
BIO L100	(1)	Principles of Biology Lab	BIO 4433	(3)	Embryology
CHM 1142	(3)	General Chemistry I	BIO L433	(1)	Embryology Embryology Lab
CHM L142	(1)	General Chemistry I Lab	BIO 4451	(3)	Toxicology
MTH 1125	(4)	Calculus I	BIO L451	(1)	Toxicology Toxicology Lab
	(.)		BIO 4471	(3)	Parasitology
A 37 D *.	(20		BIO 1471 BIO L471	(1)	Parasitology Lab
Area V Require			BIO 4478	(3)	Cell Biology
BIO 1101	(3)	Organismal Biology Organismal Biology Lab	BIO L478	(1)	Cell Biology Lab
CHM 1143	(1) (3)	General Chemistry II	BIO 4480	(3)	Histology
CHM 1143 CHM L143	(1)	General Chemistry II Lab	BIO L480	(1)	Histology Lab
IS 2241	(3)	Computer Concepts and	BIO 4482	(3)	Molecular Biology
15 2241	(3)	Applications	BIO L482	(1)	Molecular Biology Lab
TROY 1101	(1)	University Orientation	CHM 3352	(3)	Biochemistry
11011101	(-)	CIII ( <b>C</b> III ( CIII	CHM L3352	(1)	Biochemistry Lab
Select one seque	ence (physic	cs sequence not required for medical			
technology conc				CHEN	MISTRY EDUCATION
PHY 2252	(3)	General Physics I	Students seekin		teacher certification should select
PHY L252	(1)	General Physics I Lab	chemistry as a f	irst maior a	and education as a second major. Stu-
PHY 2253	(3)	General Physics II	dents should con	nsult with t	heir advisers concerning all certification
PHY L253	(1)	General Physics II Lab		HM 3352	is required for Alabama teacher certifi-
or			cation.		
PHY 2262	(3)	Physics I with Calculus			
PHY L262	(1)	Physics I with Calculus Lab		CHEMIS	TRY MAJOR (37 HOURS)
PHY 2263	(3)	Physics II with Calculus	Specialized Ge	neral Stud	ies Requirements
PHY L263	(1)	Physics II with Calculus Lab	Area III		•
			BIO 1100	(3)	Principles of Biology
Requirements	for the ma	jor	BIO L100	(1)	Principles of Biology Lab
Lectures and the	eir correspo	onding labs must be taken together.	CHM 1142	(3)	General Chemistry I
BIO 2229	(3)	General Ecology	CHM L142	(1)	General Chemistry I Lab
BIO L229	(1)	General Ecology Lab	MTH 1125	(4)	Calculus I
BIO 3320	(3)	Genetics			
BIO L320	(1)	Genetics Lab	Area V Requir	ements	
BIO 3372	(3)	Microbiology	IS 2241	(3)	Computer Concepts and
BIO L372	(1)	Microbiology Lab		(-)	Applications
CHM 3342	(3)	Organic Chemistry I	TROY 1101	(1)	University Orientation
CHM L342	(1)	Organic Chemistry I Lab			
CHM 3343	(3)	Organic Chemistry II	Select one serie	s:	
CHM L343	(1)	Organic Chemistry II Lab	PHY 2252	(3)	General Physics I
MTH 2210	(3)	Applied Statistics	PHY L252	(1)	General Physics I Lab
			PHY 2253	(3)	General Physics II
Select 32 semest	ter hours fr	om the courses listed below:	PHY L253	(1)	General Physics II Lab
BIO 3347	(3)	Human Anatomy and Physiology I	or		
BIO L347	(1)	Human Anatomy and Physiology I	PHY 2262	(3)	Physics with Calculus I
		Lab	PHY L262	(1)	Physics with Calculus I Lab
BIO 3348	(3)	Human Anatomy and Physiology II	PHY 2263	(3)	Physics with Calculus II
BIO L348	(1)	Human Anatomy and Physiology II Lab	PHY L263	(1)	Physics with Calculus II Lab
BIO 3382	(3)	Immunology	Chemistry Cor	е (34 Пот	rs)
BIO L382	(1)	Immunology Lab	CHM 1143	(3)	General Chemistry II
BIO 3386	(3)	Hematology	CHM L143	(1)	General Chemistry II Lab
BIO L386	(1)	Hematology Lab	CHM 2242	(3)	Analytical Chemistry
BIO 4414	(3)	Food Microbiology	CHM L242	(1)	Analytical Chemistry Lab
BIO L414	(1)	Food Microbiology Lab	CHM 1242 CHM 3342		Organic Chemistry I
BIO 4416	(3)	Environmental Microbiology.	CHM L342	(3)	Organic Chemistry I Lab
BIO L416	(1)	Environmental Microbiology Lab	CHIVI L342	(1)	Organic Chemistry I Lau

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
MTH 1126	(4)	Calculus II

Select 3 hours of c	chemistry $\epsilon$	electives:
CHM 3352	(3)	Biochemistry
CHM L352	(1)	Biochemistry Lab
CHM L382	(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

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/L242	Analytical Chemistry and lab
CHM 3352 / L352	Biochemistry and 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.

# **CHEMISTRY PROGRAM (51 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

#### (1) MTH 1125 (4) Calculus I

CHM L142

Chemistry, Mathematics, and Physics Core Courses			
CHM 1143	(3)	General Chemistry II	
CHM I 143	(1)	General Chemistry II I ah	

CHM L143	(1)	General Chemistry II Lab
CHM 2242	(3)	Analytical Chemistry
CHM L242	(1)	Analytical Chemistry Lab
CHM 3342	(3)	Organic Chemistry I

Organic Chemistry I Lab CHM L342 (1) CHM 3343 (3)

Organic Chemistry II

General Chemistry I Lab

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
MTH 1126	(4)	Calculus II

#### Select one series:

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

#### Select five hours of chemistry electives:

CHM 3352	(3)	Biochemistry
CHM L352	(1)	Biochemistry Lab
CHM L382	(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

# COMPREHENSIVE GENERAL SCIENCE PROGRAM **(46 HOURS)**

# **Specialized General Studies Requirements**

#### Area III

BIO 1101	(3)	Principles of Biology
BIO L101	(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
TROY 1101	(1)	University Orientation

# Select one series:

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

Applied Discrete Mathematics

PHY 2262	(3)	Physics I with Calculus			r level physics or chemistry courses
PHY L262	(1)	Physics I with Calculus Lab	approved by the	academic	adviser.
PHY 2263	(3)	Physics II with Calculus			
PHY L263	(1)	Physics II with Calculus Lab	COM	1PUTER	SCIENCE MINOR (18 HOURS)
			CS 2250	(3)	Computer Science I
Required Cou	rses		CS 2255	(3)	Computer Science II
BIO 3320	(3)	Genetics			•
BIO L320	(1)	Genetics Lab	Select 12 semesi	ter hours o	of computer science courses with at least
CHM 3342	(3)	Organic Chemistry I	one course being		
CHM L342	(1)	Organic Chemistry I Lab			
MTH 2210	(3)	Applied Statistics	COMP	UTER SO	CIENCE PROGRAM (48 HOURS)
PHY 4410	(3)	Modern Physics			lies Requirements
PHY L410	(1)	Modern Physics Lab	-	iici ai Stuu	nes requirements
SCI 3335	(3)	Physical Geology	Area III	(4)	Calculus I in line of MTH 1110
SCI L335	(1)	Physical Geology Lab	MTH 1125	(4)	Calculus I, in lieu of MTH 1110
SCI 3336	(3)	Principles of Astronomy	Calant a farm ha	/	lah combination from the following.
Select one of th	e following	concentrations:	(Students must c ics. Also see Are	complete a	lab combination from the following: n 8 hour sequence in chemistry or phys- rements.)
Biology C	oncentrati	on	CHM 1142	(3)	General Chemistry I
BIO 2229	(3)	General Ecology	CHM L142	(1)	General Chemistry I Lab
BIO L229	(1)	General Ecology Lab	PHY 2252	(3)	General Physics I
BIO 3347	(3)	Anatomy & Physiology I	PHY L252	(1)	General Physics I Lab
BIO L347	(1)	Anatomy & Physiology I Lab		. ,	•
BIO 3348	(3)	Anatomy & Physiology II	Select remaining	g Area III d	courses as shown in the General Studies
BIO L348	(1)	Anatomy & Physiology II Lab	section of this co	atalog.	
BIO 3372	(3)	Microbiology			
BIO L372	(1)	Microbiology Lab	Area V Require	ments	
Select 1 botany	course wit	h corresponding lab (four hours).	CS 2250	(3)	Computer Science I
		ith corresponding lab(four hours).	MTH 1126	(4)	Calculus II
Select 1 20010g.	y course wi	in corresponding tho four hours).	TROY 1101	(1)	University Orientation
	y Concenti		Select a four hor	ur course/i	lab combination from the following:
CHM 2242	(3)	Analytical Chemistry			n 8 hour sequence in chemistry or phys-
CHM L242	(1)	Analytical Chemistry Lab	ics. Also see Are		
CHM 3343	(3)	Organic Chemistry II	CHM 1143	(3)	General Chemistry II
CHM L343	(1)	Organic Chemistry II Lab	CHM L143	(1)	General Chemistry II Lab
CHM 3352	(3)	Biochemistry	PHY 2253	(3)	General Physics II
CHM L352	(1)	Biochemistry Lab	PHY L253	(1)	General Physics II Lab
CHM 3381	(3)	Physical Chemistry I			
CHM L381	(1)	Physical Chemistry I Lab	Required Cour		
			CS 2255	(3)	Computer Science II
	ium of 8 s	semester hours of coursework from the	CS 3310	(3)	Foundations of Computer Science
following:	(2)	M : 1Cl : H	CS 3323	(3)	Data Structures
CHM 3382	(3)	Physical Chemistry II	CS 3329	(3)	Analysis of Algorithms
CHM L382	(1)	Physical Chemistry II Lab	CS 3332	(3)	Software Engineering I
CHM 4403	(3)	Advanced Organic Chemistry	CS 3360	(3)	Concepts of Object-Oriented
CHM 4444	(3)	Advanced Inorganic Chemistry		,_,	Programming I
CHM L444	(1)	Advanced Inorganic Chemistry Lab	CS 3365	(3)	Introduction to Computer Organization and Architectures
CHM 4445	(3)	Instrumental Analysis	CS 2270	(2)	-
CHM L445	(1)	Instrumental Analysis Lab	CS 3370 CS 3372	(3) (3)	Nature of Programming Languages Formal Languages and the Theory of Computation
• Physics C	oncentrati	on	CS 4420	(3)	Introduction to Database Systems
PHY 4411	(3)	Advanced Modern Physics	CS 4445	(3)	Data Communication and
PHY 4459	(3)	Optics	CD TTTJ	(3)	Networking
PHY L459	(1)	Optics lab	CS 4448	(3)	Operating Systems
PHY 4420	(3)	Mechanics	MTH 2210	(3)	Applied Statistics
PHY 4430	(3)	Electromagnetic Fields	MTH 2215	(3)	Applied Discrete Mathematics

MTH 2215

(3)

PHY 4430

PHY 4495

(3)

(3)

Electromagnetic Fields

Topics in Physics

C.I C.I.	c 11 ·		ENIC 1102	(2)	Commercial and 1 Mar 1 and
Select two of the	-		ENG 1102	(3)	Composition and Modern English II
CS 3320	(3)	Business Systems Programming	An		Liigiisii II
CS 3325	(3)	Operations Research	Area II		
CS 3331	(3)	Fundamentals of Artificial Intelligence	Select one:		
CS 3361	(3)	Concepts of Objected Oriented	ENG 2205	(3)	World Literature before 1660
CS 5501	(3)	Programming II	ENG 2206	(3)	World Literature after 1660
CS 4401	(3)	Advanced Artificial Intelligence	ENG 2211	(3)	American Literature before 1875
CS 4443	(3)	Web Based Software Development	ENG 2212	(3)	American Literature after 1875
CS 4447	(3)	Systems Analysis and Design	ENG 2244	(3)	British Literature before 1785
CS 4451	(3)	Computer Security and Reliability	ENG 2245	(3)	British Literature after 1785
CS 4461	(3)	Software Engineering II			
CS 4462	(3)	Special Topics in Object-Oriented	Select one:		
65 1102	(3)	Technology	ART 1133	(2)	Visual Arts
CS 4495	(3)	Special Topics in Computer Science	DRA 2200	(2)	Introduction to Drama
	( )	1 1	MUS 1131	(2)	Music Appreciation
CO	MPHTER	SCIENCE, APPLIED MAJOR			
CO		(36 HOURS)	Area III		
6		·	MTH 1125	(3)	Calculus I
-	neral Studi	ies Requirements	WIIII 1123	(3)	Calculus I
Area III			Coloct and acion		and company dive lab
MTH 2201	(3)	Business Calculus	BIO 1100		and corresponding lab: Principles of Biology
Select addition	al Area III	requirements as shown in the General	BIO L100	(3) (1)	Principles of Biology Principles of Biology Lab
Studies section	of this catai	log.	SCI 2233		Physical Science
Area V Requir	ements		SCI 2233 SCI L233	(3) (1)	Physical Science Lab
IS 2241	(3)	Computer Concepts and	SCI 1233 SCI 2234	(3)	Earth and Space Science
		Applications	SCI 2234 SCI L234	(1)	Earth and Space Science Lab
MTH 2215	(3)	Applied Discrete Mathematics	SCI L234	(1)	Earth and Space Science Lab
TROY 1101	(1)	University Orientation	4 117		
			Area IV		
Major Require	ements		Select one:		
CS 2250	(3)	Computer Science I	HIS 1101	(3)	Western Civilization I
CS 2255	(3)	Computer Science II	HIS 1102	(3)	Western Civilization II
CS 2265	(3)	Advanced Programming I	HIS 1111	(3)	U.S. to 1877
CS 3330	(3)	Data Structures and Algorithms	HIS 1112	(3)	U.S. since 1877
CS 4420	(3)	Introduction to Database Systems	HIS 1122	(3)	World History to 1500
CS 4443	(3)	Web-Based Software Development	HIS 1123	(3)	World History from 1500
CS 4445	(3)	Data Communications and			
		Networking	Area V		
CS 4447	(3)	Systems Analysis and Design	COM 1110	(3)	Effective Communication
CS 4448	(3)	Operating Systems			(Montgomery campus only)
			IS 2241	(3)	Computer Concepts and
Select three of t	he following	g:	TD OV 1101	(1)	Applications
CS 3320	(3)	<b>Business Systems Programming</b>	TROY 1101	(1)	University Orientation
CS 3332	(3)	Software Engineering I			
CS 3347	(3)	Advanced Programming II	Additional requ	irements	
CS 4449	(3)	Applied Networking	CS 2250	(3)	Computer Science I
CS 4451	(3)	Computer Security	CS 2255	(3)	Computer Science II
CS 4495	(3)	Special Topics in Computer Science	CS 3310	(3)	Foundations of Computer Science
			CS 3323	(3)	Data Structures
COMPI	UTER SCI	ENCE A.S. DEGREE (60 HOURS)	CS 3329	(3)	Analysis of Algorithms
COMI			CS 3332	(3)	Software Engineering I
		te of Science Degree	CS 3365	(3)	Introduction to Computer
	See the academic regulations section of this catalog for additional			(2)	Organization and Architectures
inf	ormation re	egarding associate degrees.	MTH 2215	(3)	Applied Discrete Mathematics
					_

**General Studies Requirements** 

Area I

ENG 1101 (3) Composition and Modern English I

Select 7-10 hours of free 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.

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
CJ 3345	(3)	Criminology
CJ 3352	(3)	Constitutional Law
CJ 3375	(3)	Introduction to Social Scientific Inquiry
CJ 4499	(3)	Senior Seminar

#### Select A or B below:

12 additional hours of advanced or upper-level criminal justice courses, as approved by the adviser,

or

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

		11
CJ 3335	(3)	Private and Public Security
		Administration
CJ 4435	(3)	Grant Writing
CJ 4440	(3)	Terrorism
CJ 4470	(3)	Criminal Justice Issues in Homeland
		Security
CJ 4472	(3)	Cyber Crime
CJ 4488	(3)	Internship (limit 1)
POL 3364	(3)	State and Local Politics
POL 4422	(3)	Public Policy Making

# **CRIMINAL JUSTICE MINOR (18 HOURS)**

CJ 1101 (3) Introduction to Criminal Justice

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

EARTH	I AND SPA	CE STUDIES MINOR (18 HOURS)
SCI 3335	(3)	Physical Geology
SCI L335	(1)	Physical Geology Lab
SCI 3336	(3)	Astronomy
SCI 3340	(3)	Marine Science
SCI L340	(1)	Marine Science Lab
SCI 3350	(3)	Weather and Climate
SCI L350	(1)	Weather and Science Lab
SCI 4403	(3)	Conservation

	ENGLI	SH MAJOR (36 HOURS)
Area V Requir	ements	
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
IS 2241	(3)	Computer Concepts and Applications
TROY 1101	(1)	University Orientation

# **Major Requirements**

ENG 3341 Advanced Grammar

Select an additional 33 hours of upper division courses, at least nine of which are at the 4000 level or above.

#### · Professional Writing Emphasis

Students at the Montgomery campus may select the Professional Writing Emphasis. In addition to ENG 3341, the following courses are required:

ENG 2260	(3)	Introduction to Technical and Professional Writing
ENG 3345	(3)	Technical and Professional Editing
ENG 3365	(3)	Advanced Technical and
	. ,	Professional Writing
ENG 3366	(3)	Professional Document Design
ENG 4488	(3)	Seminar in Professional Writing
		Portfolio Design
ENG 4490	(3)	Professional Writing Internship

Select an additional four courses:

ENG 2245

Select an adam	onai jour ce	ourses.
ENG 3320	(3)	Introduction to Linguistics
ENG 3351	(3)	Creative Writing I
ENG 3352	(3)	Creative Writing II
ENG 4400	(3)	Selected Topics
ENG 4405	(3)	History of the English Language
ENG 4419	(3)	Advanced Writing

	21.022	(10 110 0110)
ENG 3341	(3)	Advanced Grammar
Select one sequ	ience:	
ENG 2211	(3)	American Literature before 1875
ENG 2212	(3)	American Literature after 1875
or		
ENG 2244	(3)	British Literature before 1785

ENGLISH MINOR (18 HOURS)

Select an additional nine hours of upper division English courses.

British Literature after 1785

#### **ENGLISH MINOR, CREATIVE WRITING (18 HOURS)** ENG 3351 Introduction to Creative Writing (3) Select an additional 15 hours from the following:

(3)

Scieci an additi	onai 15 noi	irs from the following.
ENG 3352	(3)	Advanced Creative Writing I
ENG 3353	(3)	Advanced Creative Writing II
ENG 3354	(3)	Advanced Nonfiction Writing
ENG 3355	(3)	Verse Writing
ENG 3356	(3)	Forms and Theory of Fiction
ENG 4420	(3)	Selected Topics in Creative Writing
ENG 4427	(3)	Contemporary American Literature
ENG 4489	(3)	Internship

# ENGLISH MINOR, PROFESSIONAL WRITING EMPHASIS (18 HOURS)

	INTL I	IASIS (16 HOURS)
ENG 2260	(3)	Introduction to Technical and Professional Writing
ENG 3345	(3)	Technical and Professional Editing
ENG 3365	(3)	Advanced Technical and Professional Writing
ENG 3366	(3)	Professional Document Design

Select an additional six hours from the following:				
ENG 3320	IG 3320 (3) Introduction to Linguistics			
ENG 3351	(3)	Creative Writing I		
ENG 3352	(3)	Creative Writing II		
ENG 4400	(3)	Selected Topics		
ENG 4405	(3)	History of the English Language		
ENG 4419	(3)	Advanced Writing		
ENG 4488	(3)	Seminar in Professional Writing Portfolio Design		

# ENGLISH—LANGUAGE ARTS PROGRAM (139 HOURS)

Professional Writing Internship

Computer Concepts and Apps.

Intro. to Mass Communications

University Orientation

Students seeking Alabama teacher certification should complete the English major and the required courses for language arts, in addition to selecting education as a second major. Students should consult their advisers concerning all certification requirements.

# **Specialized General Studies Requirements**

(3)

ENG 4490

IS 2241

JRN 1101

TROY 1101

See the general studies section of this catalog for additional information.

injormation.		
Area II		
COM 2241	(3)	Fundamentals of Speech
DRA 2200	(2)	Introduction to Drama
ENG 2205	(3)	World Literature before 1660
ENG 2206	(3)	World Literature after 1660
Select one of the	following:	
ART 1133	(2)	Visual Arts
MUS 1131	(2)	Music Appreciation
Area V Require	ments	
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

#### **Required Courses for Language Arts**

(3)

(3)

(1)

COM 3342	(3)	Argumentation and Debate
COM 4441	(2)	Oral Interpretation
DRA 2211	(1)	Theatre for Youth
DRA 2245	(1)	Stagecraft Lab
DRA 3301	(2)	Acting I
DRA 4451	(3)	Directing I
ENG 3341	(3)	Advanced Grammar
ENG 3371	(3)	Literature for Young Adults
ENG 4405	(3)	History of the English Language
ENG 4478	(3)	Theory and Practice of Composition: Writing and Learning Across the Curriculum
JRN 3326	(3)	Advising Student Publications

Select twelve hours of upper division English electives, six of which must be at the 4000 level, three of which may be upper-level creative writing

ENVIRONMENTAL SCIENCE MINOR (18-20				
	SEMESTER HOURS)			
BIO 2202	(3)	Principles of Environmental Science		
BIO L202	(1)	Principles of Environmental Science Lab		
BIO 4428	(3)	Environmental Pollution and Control		
BIO L428	(1)	Environmental Pollution and Control Lab		

Select 12 hours from the following:

		C
BIO 4451	(3)	Toxicology
BIO L451	(1)	Toxicology Lab
BIO 4452	(3)	Industrial Hygiene
BIO L452	(1)	Industrial Hygiene Lab
BIO 4479	(3)	Environmental Assessment
BIO L479	(1)	Environmental Assessment Lab
BIO 4420	(4)	Field Vertebrate Zoology (combined lecture and lab)
BIO 4425	(4)	Field Botany or BIO 4402 (combined lecture and lab)
BIO 4476	(1-4)	Special Topics (combined lecture and lab)
BIO 4491	(1-4)	Guided Independent Research (combined lecture and lab)
CHM 3350	(3)	Principles of Physical Chemistry
CHM L350	(1)	Principles of Physical Chemistry Lab
CHM 3352	(3)	Biochemistry
CHM L352	(1)	Biochemistry Lab
CHM 4445	(3)	Instrumental Analysis
CHM L445	(1)	Instrumental Analysis Lab

# ENVIRONMENTAL SCIENCE PROGRAM (55 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 Apps.
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

Select 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	Select one:		
PHY L262	(1)	Physics I with Calculus Lab	ENG 2205	(3)	World Literature before 1660
PHY 2263	(3)	Physics II with Calculus	ENG 2206	(3)	World Literature after 1660
PHY L263	(1)	Physics II with Calculus Lab	ENG 2211	(3)	American Literature before 1875
	. ,	•	ENG 2212	(3)	American Literature after 1875
Program Requi	rements		ENG 2244	(3)	British Literature before 1785
BIO 2220	(3)	Principles of Cell Biology	ENG 2245	(3)	British Literature after 1785
BIO L220	(1)	Principles of Cell Biology Lab			
BIO 2229	(3)	General Ecology	Select six hours	of one fore	rign language.
BIO L229	(1)	General Ecology Lab		0 0	
BIO 3320	(3)	Genetics	Area III		
BIO L320	(1)	Genetics Lab	Select one:		
CHM 3342	(3)	Organic Chemistry I	MTH 1110	(3)	Finite Mathematics
CHM L342	(1)	Organic Chemistry I Lab	MTH 1110 MTH 1112	(3)	Pre-calculus Algebra
CHM 3343	(3)	Organic Chemistry II	WIIII 1112	(3)	110-caiculus 711gcola
CHM L343	(1)	Organic Chemistry II Lab	C-14		
MTH 2210	(3)	Applied Statistics	BIO 1100		and corresponding lab: Principles of Biology
		••	BIO 1100 BIO L100	(3) (1)	Principles of Biology Lab
Environmental	Science Co	re (32 semester hours):	SCI 2233	(3)	Physical Science
BIO 2202	(3)	Principles of Environmental Science	SCI 2233 SCI L233	(1)	Physical Science Lab
BIO L202	(1)	Principles of Environmental Science	SCI 2234	(3)	Earth and Space Science
	( )	Lab	SCI 2234 SCI L234	(1)	Earth and Space Science Lab
BIO 4428 trol	(3)	Environmental Pollution and Con-	SCI L234	(1)	Earth and Space Science Lab
BIO L428	(1)	Environmental Pollution and Con-	Area IV		
trol	(1)	Lab	Select one:		
BIO 4413	(3)	Limnology	HIS 1101	(3)	Western Civilization I
BIO L413	(1)	Limnology Lab	HIS 1102	(3)	Western Civilization II
BIO 4451	(3)	Toxicology	HIS 1111	(3)	U.S. to 1877
BIO L451	(1)	Toxicology Lab	HIS 1112	(3)	U.S. since 1877
BIO 4452	(3)	Industrial Hygiene	HIS 1122	(3)	World History to 1500
BIO L452	(1)	Industrial Hygiene Lab	HIS 1123	(3)	World History from 1500
BIO 4479	(3)	Environmental Assessment		(-)	
BIO L479	(1)	Environmental Assessment Lab	Area V		
			COM 1110	(3)	Effective Communication
Select eight hour	s of adviser	-approved upper-level courses in	COM IIIO	(3)	(Montgomery campus only)
biology, chemistry or mathematics.		IS 2241	(3)	Computer Concepts and Applications	
BIO 4488/4489/	4490 (1-8)	Internship in Environmental Science	TROY 1101	(1)	University Orientation

# GENERAL EDUCATION A.A. DEGREE (60 HOURS)

Associate of Arts 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:		
ART 1133	(2)	Visual Arts
DRA 2200	(2)	Introduction to Drama
MUS 1131	(2)	Music Appreciation

## Additional requirements

Select any minor or area of concentration.

Select additional free electives to complete a total of 60 hours.

# GENERAL EDUCATION A.S. DEGREE (60 HOURS)

Associate of Science Degree

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

Note: Students who pursue a baccalaureate degree with Troy University following the completion of the Associate of Science in General Education must meet the minimum grade requirements in mathematics.

# **General Studies Requirements**

# Area I

ENG 1101 Composition and Modern (3) English I

ENG 1102	(3)	Composition and Modern English II
Area II		
Select one:		
ART 1133	(2)	Visual Arts
DRA 2200	(2)	Introduction to Drama
MUS 1131	(2)	Music Appreciation
	. ,	
Select one:		
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 III		
Select one:		
MTH 1110	(3)	Finite Mathematics
MTH 1112	(3)	Pre-calculus Algebra
Select one science	course an	d 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:		
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		
COM 1110	(3)	Effective Communication
		(Montgomery campus only)
IS 2241	(3)	Computer Concepts and
TD 01/ 1101	(1)	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)			
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 eight credit hours from one of the four bundles:

Basics of Cartography and Survey-

•	Data	Collection/Analy	vsis

(3)

**GEM 2200** 

		ing
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 Proces	ssing	
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 2255	(3)	Computer Science II
CS 3330	(3)	Data Structures and Algorithms
CS 3360	(3)	Concepts of Object Oriented Pro-
		gramming I

# • GIS Database Development

CS 2255	(3)	Computer Science II
CS 3323	(3)	Data Structures
CS 4420	(3)	Introduction to Database Systems

<b>GEOGRAPHY MINOR (18 HOURS)</b>			
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

POL	2241	(3)	American National Government
SOC	2275	(3)	Introduction to Sociology

Select one six-hour sequence:

HIS	1101	(3)	Western Civilization I, or placement
HIS	1102	(3)	Western Civilization II, or place-
ment			_
Or			
HIS	1122	(3)	World History to 1500
HIS	1123	(3)	World History from 1500

#### **Area V Requirements**

GEO	2210	(3)	World Regional Geography
HIS	1111	(3)	U.S. to 1877, or placement
HIS	1112	(3)	U.S. since 1877, or placement
IS	2241	(3)	Computer Concepts and Apps.
TROY	1101	(1)	University Orientation

#### Requirements for the Major

HIS 3375	(3)	Research and Methodology
HIS 4490	(3)	Senior Seminar

#### **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 9 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.

NOTE: Students majoring in History Education may not select the Civil Rights emphasis in history.

#### **HISTORY MAJOR (36 HOURS)**

#### 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

GEO 2210	(3)	World Regional Geography
HIS 1111	(3)	U.S. to 1877, or placement
HIS 1112	(3)	U.S. since 1877, or placement
IS 2241	(3)	Computer Concepts and Apps.
TROY 1101	(3)	University Orientation

#### Requirements for the Major

HIS 3375	(3)	Research and Methodology
HIS 4490	(3)	Senior Seminar

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

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

#### • CIVIL RIGHTS EMPHASIS

#### **Specialized General Studies Requirements**

#### Area IV

Select a six hour sequence in western civilization or world history.

Select six additional Area IV courses as specified in the General Studies section of this catalog.

#### **Area V Requirements**

IS 2241	(3)	Computer Concepts and Apps.
TROY 1101	(1)	University Orientation
HIS 1111	(3)	U.S. to 1877, or placement
HIS 1112	(3)	U.S. since 1877, or placement
GEO 2210	(3)	World Regional Geography

#### Requirements for the major

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

Select nine hours of approved upper-level American/Latin American courses

Select nine 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**

IS 2241	(3)	Computer Concepts and Apps.
TROY 1101	(1)	University Orientation
HIS 1111	(3)	U.S. to 1877, or placement
HIS 1112	(3)	U.S. since 1877, or placement
GEO 2210	(3)	World Regional Geography

# Requirements for the Major

HIS 3375	(3)	Research and Methodology
HIS 4490	(3)	Senior Seminar

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 MINOR (18 HOURS)			
HIS 3375	(3)	Research and Methodology	

Select 15 hours of upper-level history courses.

Note: HIS 1111 and HIS 1112 are prerequisites for upper-level American history courses and must be taken if they have not been taken for general studies.

Note: HIS 1101 and HIS 1102 are prerequisites for upper-level European history courses and must be taken if they have not been taken for general studies.

HON	MELAND S	SECURITY MINOR (18 HOURS)
CJ 1101	(3)	Introduction to Criminal Justice
Select 15 addit adviser:	ional hours	from the following as approved by the
CJ 3335	(3)	Private and Public Security
		Administration
CJ 4435	(3)	Grant Writing
CJ 4440	(3)	Terrorism
CJ 4470	(3)	Criminal Justice Issues in Homeland Security
CJ 4472	(3)	Cyber Crime
CJ 4488	(3)	Internship (limit one)
POL 3364	(3)	State and Local Politics
POL 4422	(3)	Public Policy Making

Note: This minor is not available to criminal justice majors.

<b>HUMANITIES MINOR (18 HOURS)</b>		
ART 3302	(3)	History of the Arts
CLA 2260	(3)	Classical Mythology
CLA 2290	(3)	Classical Literature in English Translation
PHI 2203	(3)	Introduction to Philosophy
PHI 3301	(3)	Western Philosophy
REL 2280	(3)	World Religions

LEADERSHIP STUDIES 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 ar	ı additiona	l six hours from the following:	
AS 3312	(3)	Air Force Leadership Studies I	
AS 3313	(3)	Air Force Leadership Studies II	
COM 3326	(3)	Conflict Management	
COM 3345	(3)	Group Discussion and Leadership	
COM 4426	(3)	Organizational Communication	
SED 4400	(3)	Secondary Classroom Management	
HIS 3304	(3)	Military History of the United States	
HIS 3315	(3)	Vietnam War	
HIS 3318	(3)	History of American Women	
IDS 2200	(3)	Interdisciplinary Studies	
LDR 4402	(2)	Leadership Field Experiences	
LDR 4493-94	(1-3)	Guided Independent Study	
MGT 3371	(3)	Principles of Management and Organizational Behavior	
MGT 3375	(3)	Human Resources Management	
MGT 4472	(3)	Organizational Behavior	
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	

State and Local Politics

POL 3364

(3)

POL 4421	(3)	Introduction to Public Administration
PSY 4410	(3)	Business and Industrial Psychology
SOC 3301	(3)	Social Change in the Information Age
SOC 3310	(3)	Minorities in U.S. Social Structure
SS 4498	(3)	Social Science Theory

# **MARINE BIOLOGY PROGRAM (55 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 Apps.
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

Select 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
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 the 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
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

Troy University Courses:

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

Select three additional upper-level adviser-approved biology courses (12 SH). Lectures and their corresponding labs must be taken together.

#### 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.

01 /	.1	
seieci	inree	courses:

MB 4403	(4)	Marine Vertebrate Zoology
MB 4404	(4)	Marine Botany
MB 4410	(4)	Introduction to Oceanography
MB 4406	(4)	Marsh Ecology, or
MB 4418	(4)	Marine Behavioral Ecology, or
MB 4423	(4)	Marine Ecology

*Select four semester hours of marine biology elective(s).* 

#### 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**

BIO 1100	(3)	Principles of Biology
BIO L100	(1)	Principles of Biology Lab
MTH 1125	(4)	Calculus I

Select a four hour course/lab combination from the following:

Seieci a jour	nour course, ino	combination from the jollowing
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
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 V Requirements

TROY 1101	(1)	University Orientation
MTH 2220	(3)	Computer Programming for Mathe-
		matics

# Requirements for the Major

1104 4111 6111 6111 611 611	jo	-
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:

ATTI 4405

M1H 4425	(3)	Real Analysis II
MTH 4442	(3)	Abstract Algebra II
Or both of the f	ollowing:	
MTH 4451	(3)	Mathematical Statistics I
MTH 4452	(3)	Mathematical Statistics II

Students selecting MTH 4451 and MTH 4452: select 9 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
111111 5551	(3)	Emedi / ngeora

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.

# **MILITARY OPERATIONS MINOR (18 HOURS)**

Military electives may be taken from credit earned through the American Council on Education (ACE) recommendations, Community College of the Air Force (CCAF) or military credit from regionally accredited institutions. This minor is applicable only to Bachelor of Science programs. Military science as a specialization is applicable to the resources management program.

#### **MILITARY SCIENCE MINOR (19 HOURS)**

MSL 3301	(3)	Leadership and Problem Solving
MSL 3302	(3)	Leadership and Ethics
MSL 3304a	(1)	Leadership Lab
MSL 3304b	(1)	Leadership Lab
MSL 4401	(3)	Leadership and Management
MSL 4402	(3)	Officership
MSL 4404a	(1)	Leadership Lab
MSL 4404b	(1)	Leadership Lab

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

#### PHYSICAL SCIENCE MINOR (19-20 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
Select one series:		
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
PHY L262	(1)	Physics I with Calculus Lab
PHY 2263	(3)	Physics II with Calculus
PHY L263	(1)	Physics II with Calculus

Select an upper-level course in chemistry or physics (3-4 SH).

PHYSI	CS MINOR (19 HOURS)
(3)	Modern Physics
(1)	Modern Physics Lab
(3)	Mechanics
s:	
(3)	Gen. Physics I
(1)	Gen. Physics Lab I
(3)	Gen. Physics II
(1)	Gen. Physics Lab II
(3)	Physics I Calculus
(1)	Physics I with Calculus Lab
(3)	Physics II with Calculus
(1)	Physics II with Calculus Lab
	(3) (1) (3) (3) (1) (3) (1) (3) (1) (3)

Select an additional four hours of adviser-approved, upper-level physics courses.

POLITICAL SCIENCE MAJOR (36 HOURS)		
Area V Requir	ements	
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		

wiajor Kequireine	HILS	
POL 3300	(3)	Foundations of Political Science
POL 3330	(3)	Political Theory

Select one of the following concentrations:

#### · American Politics Concentration

Select 15 hours from the following:

	0	0
POL 3340	(3)	U.S. Government – Executive Branch
POL 3341	(3)	U.S. Government – Legislative Branch
POL 3342	(3)	U.S. Government – Judicial Branch
POL 3343	(3)	American Political Processes
POL 3364	(3)	State and Local Politics
POL 4422	(3)	Public Policy Making
POL 4423	(3)	American Foreign Policy to 1920
POL 4424	(3)	Contemporary American Foreign Policy
POL 4420	(3)	Constitutional Law
POL 4471	(3)	Intergovernmental Relations

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

#### · International Politics Concentration

POL 3351	(3)	International Relations
POL 4410	(3)	International Political Economy
POL 4433	(3)	Comparative Government

Select six hours from the following:

Select Six Hours fre	m me jom	owing.
POL 4415	(3)	International Conflict
POL 4423	(3)	American Foreign Policy to 1920
POL 4424	(3)	Contemporary American Foreign Policy
POL 4432	(3)	Comparative Public Policy
POL 4445	(3)	Inter-American Relations
POL 4450	(3)	Latin American Politics
POL 4452	(3)	International Law
POL 4460	(3)	Intercultural Relations
POL 4465	(3)	Politics of the Developing World
POL 4466	(3)	Middle Eastern Politics
POL 4470	(3)	European Politics
POL 4474	(3)	Terrorism and Political Violence
POL 4476	(3)	Politics of Southeast Asia

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

#### · Public Administration Concentration

Select 15 hours from the following:

POL 3364	(3)	State and Local Politics
POL 4421	(3)	Introduction to Public
		Administration
POL 4422	(3)	Public Policy Making
POL 4451	(3)	Public Personnel Administration
POL 4432	(3)	Comparative Public Policy
POL 4453	(3)	Bureaucratic Politics
POL 4471	(3)	Intergovernmental Relations
POL 4472	(3)	Administrative Law

Select an additional 15 hours of upper-level political science courses, as approved by your academic adviser.

	POLITICAL SC	IENCE MINOR (18 HOURS)
POL 3300	(3)	Foundations of Political Science
POL 3330	(3)	Introduction to Political Theory

Select an additional 12 hours of upper level courses, as approved by your academic adviser.

# 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. Students 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 (12 SH)

NOTE: Social Science majors with concentrations in anthropology, geography, or sociology should take Area IV electives appropriate for their concentration.

#### Requirements for the 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 one concentration:

#### · Concentration 1: Anthropology

ANT 3310	(3)	Cultural Anthropology
ANI 3310	(3)	
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 (six hours may be used from ECO 2251, ECO 2252, GEO 2210, ANT 2200, POL 2260 [World Politics], or SOC 2230) in at least three 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 adviser:

# · Concentration 4: Leadership

LDR 1100	(3)	Introduction to Leadership
LDR 4400	(3)	Leadership Seminar*

<sup>\*</sup>Requires approval of the Director of the Institute of Leadership Development

Select an additional 18 hours from the following:

sei	eci an addiiioni	u 10 nours	s from the following.
AS	3312	(3)	Air Force Leadership Studies I
AS	3313	(3)	Air Force Leadership Studies II
CO	M 3345	(3)	Group Discussion and Leadership
HIS	S 4415	(3)	Contemporary America
MC	GT 3371	(3)	Principles of Management and
			Organizational Behavior
MC	GT 3375	(3)	Human Resources Management
MS	SL 2202	(2)	Leadership and Teamwork
MS	SL 2204	(1)	Leadership Lab
PO	L 4422	(3)	Public Policy Making
PO	L 3351	(3)	Foundations of International
			Relations
PO	L 4421	(3)	Introduction to Public Administration
PS	Y 4410	(3)	Business and Industrial Psychology
SO	C 3301	(3)	Social Change in the Information Age
SO	C 3302	(3)	Sociology of Small Groups

# · Concentration 5: Sociology

Select at least 24 hours of additional 3000/4000-level sociology courses as approved by your faculty adviser.

# 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, social science, or sociology. At least 12 hours must be 3000/4000 level.

# **SOCIOLOGY MAJOR (36 HOURS)**

Area V Requirements			
IS 2241	(3)	Computer Concepts and Applications	
TROY 1101	(1)	University Orientation	
ANT 2200	(3)	Anthropology	
SOC 2230	(3)	Social Problems in Contemporary Society	
SOC 2275	(3)	Introduction to Sociology	

#### Requirements for the Major

SOC 3300	(3)	Social Institutions
SOC 4420	(3)	Sociological Theory
SS 3376	(3)	Application of Social Scientific
		Inquiry

Select an additional 27 hours of approved upper-level sociology courses.

#### **SOCIOLOGY MINOR (18 HOURS)**

ANT 2200	(3)	Anthropology
SOC 2230	(3)	Social Problems in Contemporary Society

Select an additional 12 hours of approved, upper-level sociology courses.

# SURVEYING AND GEOMATICS SCIENCES MAJOR (47 HOURS)

#### **Specialized General Studies Requirements**

#### Area II

Select the following in lieu of ART 1133:

ART 2201 (3) Introductory Drawing

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

#### Area III

BIO 1100	(3)	Principles of Biology
BIO L100	(1)	Principles of Biology Lab
PHY 2252	(3)	General Physics I
PHY L252	(1)	General Physics I Lab
MTH 1125	(4)	Calculus I

#### Area IV

ECO 2251	(3)	Principles of Macroeconomics
ECO 2252	(3)	Principles of Microeconomics

Select one history sequence as specified in the General Studies section of this catalog.

Area V Requirements			
IS 2241	(3)	Computer Concepts and Apps.	
TROY 1101	(1)	University Orientation	
CS 2250	(3)	Computer Science I	
MTH 2210	(3)	Applied Statistics	
MTH 1126	(4)	Calculus II	
PHY 2253	(3)	General Physics II	
PHY L253	(1)	General Physics II Lab	
Major Requireme			
GEM 2200	(3)	Basics of Cartography and Surveying	
GEM L220	(1)	Basics of Cartography and Surveying Lab	
GEM 3309	(3)	Land Parcel Administration and Law	
GEM L309	(1)	Land Parcel Administration and Law Lab	
GEM 3310	(3)	Land Surveying Practice	
GEM L310	(1)	Boundary Retracement Lab	
GEM 3330	(3)	Advanced Measurement Analysis	
GEM L330	(1)	Advanced Measurement Analysis Lab	
GEM 3366	(3)	Photogrammetry and Remote Sensing	
GEM L366	(1)	Photogrammetry and Remote Sensing Lab	
GEM 3370	(3)	Geodesy and Geodesics	
GEM L370	(1)	Geodesy and Geodesics Lab	
GEM 3379	(3)	Introduction to Least Squares Adjustment	
GEM L379	(1)	Introduction to Least Squares Adjustment Lab	
GEM 3390	(3)	Intro to GIS	
GEM L390	(1)	Intro to GIS Lab	
GEM 3391	(3)	Applications of GIS	
GEM L391	(1)	Applications of GIS Lab	
GEM 4405	(2)	Route and Construction Survey	
GEM L405	(1)	Route and Construction Survey Lab	
GEM 4407	(1)	Land Development	
GEM L407	(1)	Subdivision Design Practice	
GEM 4409	(3)	Hydrology	
GEM L409	(1)	Hydrology Lab	
GEM 4499	(2)	Geomatics/GIS Projects	

NOTE: It is strongly recommended that each student gain work experience with a professional surveyor or geomatics firm after completion of the sophomore year.