## **COLLEGE OF ARTS AND SCIENCES**

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 scholar-

AIR FORCE ROTC/AFROSPACE STUDIES MINOR

ship. 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.

(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 MAJOR (36 HOURS)**

#### Area IV

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

## **Major Requirements:**

ANT 3305	(3)	Introduction to Archaeology
ANT 3310	(3)	Cultural Anthropology
ANT 3311	(3)	Physical Anthropology
ANT 3340	(3)	Language in Culture and
		Society
ANT 4498	(3)	Anthropology Theory
SS 3376	(3)	Application of Social Scientific
		Inquiry

Select at least 18 hours of additional 3000/4000 level anthropolo gy 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.

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:

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 Organizations

#### **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 semster 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	(3)	General Physics I
PHY L252	(1)	General Physics I Lab

PHY 2253	(3)	General Physics II	BIO L413	(1)	Limnology Lab
PHY L253	(1)	General Physics II Lab	BIO 4416	(3)	Microbial Ecology
or			BIO L416	(1)	Microbial Ecology Lab
PHY 2262	(3)	Physics I with Calculus	BIO 4421	(3)	Population Ecology
PHY L262	(1)	Physics I with Calculus Lab	BIO L421	(1)	Population Ecology Lab
PHY 2263	(3)	Physics II with Calculus	BIO 4479	(3)	Environmental Assessment
PHY L263	(1)	Physics II with Calculus Lab	BIO L479	(1)	Environmental Assessment Lab
M . D .			G 1.	1 . 1	/ 11/ 1 1
Major Require BIO 2220		Dain similar of Call Distance	Complete on corresponding	e pnysioic lah:	ogy/cell/molecular course with its
	(3)	Principles of Cell Biology	BIO 3347	(3)	Human Anatomy and Physiology I
BIO L220 BIO 2229	(1)	Principles of Cell Biology Lab	BIO L347	(1)	Human Anatomy and Physiology I
BIO 2229 BIO L229	(3)	General Ecology	BIO ES IT	(1)	Lab
BIO 1229 BIO 3320	(1)	General Ecology Lab Genetics	BIO 3348	(3)	Human Anatomy and Physiology II
BIO 3320 BIO L320	(3)	Genetics Lab	BIO L348	(1)	Human Anatomy and Physiology II
CHM 3342	(1) (3)	Organic Chemistry I		( )	Lab
CHM 1342 CHM L342		Organic Chemistry I Lab	BIO 3372	(3)	Microbiology
CHM 1342 CHM 3343	(1)	Organic Chemistry II	BIO L372	(1)	Microbiology Lab
	(3)	Organic Chemistry II Lab	BIO 3382	(3)	Immunology
CHM L343	(1)	Applied Statistics	BIO L382	(1)	Immunology Lab
MTH 2210	(3)	Applied Statistics	BIO 3386	(3)	Hematology
			BIO L386	(1)	Hematology Lab
Commiste on a h		as with its someon on ding lab.	BIO 4414	(3)	Food Microbiology
BIO 3325	-	se with its corresponding lab:  Plant Form and Function	BIO L414	(1)	Food Microbiology Lab
BIO 3323 BIO L325	(3)	Plant Form and Function Lab	BIO 4430	(3)	Applied Genetics
	(1)		BIO L430	(1)	Applied Genetics Lab
BIO 3326 BIO L326	(3)	Plant Diversity Plant Diversity Lab	BIO 4433	(3)	Embryology
	(1)		BIO L433	(1)	Embryology Lab
BIO 4402 BIO 4425	(4)	Spring Flora Field Botany	BIO 4451	(3)	Toxicology
DIO 4423	(4)	Fleid Botally	BIO L451	(1)	Toxicology Lab
Complete one se	olom anu	rea with its corresponding lab	BIO 4478	(3)	Cell Biology
BIO 3307		rse with its corresponding lab: Invertebrate Zoology	BIO L478	(1)	Cell Biology Lab
BIO 3307 BIO L307	(3) (1)	Invertebrate Zoology Invertebrate Zoology Lab	BIO 4480	(3)	Histology
		Vertebrate Zoology	BIO L480	(1)	Histology Lab
BIO 3308 BIO L308	(3)	<del></del>	BIO 4482	(3)	Molecular Biology
BIO 4405	(1)	Vertebrate Zoology Lab	BIO L482	(1)	Molecular Biology Lab
BIO 4403 BIO L405	(3)	Entomology Entomology Lab			
BIO 4410	(1) (3)	Animal Behavior			adviser-approved biology course and its
BIO L410		Animal Behavior Lab	corresponding	lab.	
BIO 4420	(1) (4)	Field Vertebrate Zoology			
BIO 4420		Comparative Vertebrate Anatomy		BIOLOG	Y MINOR (18-20 HOURS)
BIO L432	(3)	Comparative Vertebrate Anatomy	Lectures and th	he correspon	nding labs must be taken together:
DIO L432	(1)	Lab	BIO 1101	(3)	Organismal Biology
BIO 4445	(3)	Ichthyology	BIO L101	(1)	Organismal Biology Lab
BIO L445	(1)	Ichthyology Lab	BIO 2220	(3)	Principles of Cell Biology
BIO 4446	(3)	Herpetology	BIO L220	(1)	Principles of Cell Biology Lab
BIO L446	(1)	Herpetology Lab	BIO 2229	(3)	General Ecology
BIO 4447	(3)	Ornithology	BIO L229	(1)	General Ecology Lab
BIO L447	(1)	Ornithology Lab	BIO 3320	(3)	Genetics
BIO 4448	(3)	Mammalogy	BIO L320	(1)	Genetics Lab
BIO L448	(1)	Mammalogy Lab			
BIO 4471	(3)	Parasitology	Complete two i	to four addit	ional semester hours of approved upper
BIO L471	(1)	Parasitology Lab			ogy courses with corresponding labs.
			-	DIOLOG:	A BROCK AM (55 HOURS)
Complete one		y/environmental course with its	<u> </u>		PROGRAM (55 HOURS)
corresponding lo		Principles of Environmental Science	*Special Topi	cs in Biolo 4491/44021	gy (BIO 4476), Guided Independent and Guided Independent Research
BIO 2202 BIO L202	(3)	Principles of Environmental Science Principles of Environmental Science			only be taken for a maximum of 6
DIO L202	(1)	Lab	semster hours		,

Lab

Limnology

(3)

BIO 4413

## **Specialized General Studies Requirements**

hours chosen should be based on the student's future plans for employment, graduate school or professional school.

Evolution

(3)

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 Require	ments	
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

BIO 3382	(3)	Immunology
BIO L382	(1)	Immunology Lab
BIO 4414	(3)	Food Microbiology
BIO L414	(1)	Food Microbiology 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
BIO 4476	(1-3)	Special Topics in Biology
BIO 4488/4489/ 4490	(1-3)	Internship in the Biological or Environmental Science
BIO 4491/4492	(1-3)	Guided Independent Research
BIO 4494/4494	(1-3)	Guided Independent Study
CHM 3352	(3)	Biochemistry
CHM L352	(1)	Biochemistry 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
PHY L262	(1)	Physics I with Calculus Lab
PHY 2263	(3)	Physics II with Calculus
PHY L263	(1)	Physics II with Calculus Lab

## Food Safety Concentration:

MGT 4465

BIO 3340

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

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

		8
BIO 3340	(3)	Evolution
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 4476	(1-3)	Special Topics in Biology*
BIO 4482	(3)	Molecular Biology
BIO L482	(1)	Molecular Biology Lab
BIO 4488/4489/44	90 (1-8)	Internship in the Biological or Environmental Sciences
BIO 4491/4492	(3)	Guided Independent Research*
BIO 4493/4494	(3)	Guided Independent Study*
CHM 4455	(3)	Instrumental Analysis
CHM L455	(1)	Instrumental Analysis Lab
MGT 3372	(3)	Hospitality Management

Food and Beverage Service

(3)

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

## Biomedical Sciences Concentration:

Diomicalcal Sci	chees cone	CHITATION:
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

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

02 00222	02 01 11111	. 1. 1. 2. 2. 2. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.				
General Biol	ogy Concentra	<u>ition:</u>	BIO 44	130	(3)	Applied Genetics
Complete on	e botany cours	e with its corresponding lab:	BIO L4	430	(1)	Applied Genetics Lab
BIO 3325	(3)	Plant Form and Function	BIO 44	133	(3)	Embryology
BIO L325	(1)	Plant Form and Function Lab	BIO L	433	(1)	Embryology Lab
BIO 3326	(3)	Plant Diversity	BIO 44	151	(3)	Toxicology
BIO L326	(1)	Plant Diversity Lab	BIO L	451	(1)	Toxicology Lab
BIO 4402	(4)	Spring Flora	BIO 44	180	(3)	Histology
BIO 4425	(4)	Field Botany	BIO L	480	(1)	Histology Lab
			BIO 44		(3)	Molecular Biology
		rse with its corresponding lab:	BIO L	182	(1)	Molecular Biology Lab
BIO 3307	(3)	Invertebrate Zoology				
BIO L307	(1)	Invertebrate Zoology Lab	Comple	ete 16 ada	litional s	remester hours of BIO or MB courses.
BIO 3308	(3)	Vertebrate Zoology	The 16	hours cho	sen shou	ld be based on the student's future plans
BIO L308	(1)	Vertebrate Zoology Lab				school or professional school.
BIO 4405	(3)	Entomology	_	-		Concentration:
BIO L405	(1)	Entomology Lab	BIO	4420	(4)	Field Vertebrate Zoology
BIO 4410	(3)	Animal Behavior	BIO	4421	(3)	Population Ecology
BIO L410	(1)	Animal Behavior Lab	BIO	L421	(1)	Population Ecology Lab
BIO 4420	(4)	Field Vertebrate Zoology	BIO	4425	(4)	Field Botany
BIO 4432	(3)	Comparative Vertebrate Anatomy				
BIO L432	(1)	Comparative Vertebrate Anatomy Lab	Comple	ete 12 hou	rs (three	courses with labs) from the three cate-
BIO 4445	(2)	Ichthyology			least one	course must be taken from each of the
BIO 4443 BIO L445	(3)	Ichthyology Lab	inree c	ategories.		
BIO 4446	(1) (3)	Herpetology	- I			
BIO L446	(1)	Herpetology Lab	Zoolog		(2)	7 1
BIO 4447	(3)	Ornithology	BIO 33		(3)	Invertebrate Zoology
BIO 1447 BIO L447	(1)	Ornithology Lab	BIO L3		(1)	Invertebrate Zoology Lab
BIO 4448	(3)	Mammalogy	BIO 44		(2)	Entomology
BIO L448	(1)	Mammalogy Lab	BIO L	105	(2)	Entomology Lab
BIO 4471	(3)	Parasitology				
BIO 4471 BIO L471	(1)	Parasitology Lab	Botany			
DIO L4/1	(1)	Tarasitology Lau	BIO 33		(3)	Plant Form and Function
Complete on	a acolomy/any	ironmental course with its correspond-	BIO L3		(1)	Plant Form and Function Lab
ing lab:	e ecology/envi	ironmental course with its correspond-	BIO 33		(3)	Plant Diversity
BIO 4413	(3)	Limnology	BIO L3	326	(1)	Plant Diversity Lab
BIO L413	(1)	Limnology Lab				
BIO 4416	(3)	Microbial Ecology	Ecolog	y		
BIO L416	(1)	Microbial Ecology Lab	BIO 44	113	(3)	Limnology
BIO 4421	(3)	Population Ecology	BIO L		(1)	Limnology Lab
BIO L421	(1)	Population Ecology Lab	BIO 44		(3)	Environmental Assessment
BIO 4479	(3)	Environmental Assessment	BIO L	179	(1)	Environmental Assessment Lab
BIO L479	(1)	Environmental Assessment Lab				
			Comple	ete an ada	litional e	ight hours of adviser-approved BIO or
Complete	one physiolo	gy/cell/molecular course with its	МВ сог	urses.		
correspondin		gyreen/merceana. course with the				
BIO 3347	(3)	Human Anatomy and Physiology I	Medica	al Technolo	ogy Conc	entration:
BIO L347	(1)	Human Anatomy and Physiology I				olete 29 semester hours on the Troy
		Lab				for an internship.
BIO 3348	(3)	Human Anatomy and Physiology II	•	•	11 7 0.	
BIO L348	(1)	Human Anatomy and Physiology II	Lecture	es and their	r correspo	onding labs must be taken together.
D.C. 00.50	(2)	Lab	BIO 33		(3)	Human Anatomy and Physiology I
BIO 3372	(3)	Microbiology	BIO L3		(1)	Human Anatomy and Physiology I
BIO L372	(1)	Microbiology Lab				Lab
BIO 3382	(3)	Immunology	BIO 33	348	(3)	Human Anatomy and Physiology II
BIO L382	(1)	Immunology Lab	BIO L3	348	(1)	Human Anatomy and Physiology II
BIO 3386	(3)	Hematology				Lab
BIO L386	(1)	Hematology Lab	BIO 33		(3)	Microbiology
BIO 4414	(3)	Food Microbiology	BIO L3		(1)	Microbiology Lab
BIO L414	(1)	Food Microbiology Lab	BIO 33	882	(3)	Immunology

				COI	LLEGE OF ARTS AND SCIENCES · 53
BIO L382	(1)	Immunology Lab	BIO L347	(1)	Human Anatomy and Physiology I Lab
Complete one c	ourse with	its corresponding lab:	BIO 3348	(3)	Human Anatomy and Physiology II
BIO 3386	(3)	Hematology	BIO L348	(1)	Human Anatomy and Physiology II
BIO L386	(1)	Hematology Lab			Lab
BIO 4471	(3)	Parasitology	BIO 3382	(3)	Immunology
BIO L471	(1)	Parasitology Lab	BIO L382	(1)	Immunology Lab
	( )	23	BIO 3386	(3)	Hematology
In addition to t	he ahove c	ourses, including core courses, students	BIO L386	(1)	Hematology Lab
		r hours of hospital internship MT 4400-	BIO 4414	(3)	Food Microbiology
4413 courses.			BIO L414	(1)	Food Microbiology Lab
			BIO 4416	(3)	Environmental Microbiology.
			BIO L416	(1)	Environmental Microbiology Lab
BIOLOG	Y. PREPR	OFESSIONAL MAJOR (55 HOURS)	BIO 4430	(3)	Applied Genetics
-			BIO L430	(1)	Applied Genetics Lab
-		lies Requirements	BIO 4432	(3)	Comparative Vertebrate Anatomy
<b>Area III (12 H</b> 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 Lab
CHM L142	(1)	General Chemistry I Lab	BIO 4451	(3)	Toxicology
MTH 1125	(4)	Calculus I	BIO L451	(1)	Toxicology Lab
141111 1123	(1)	Calculus I	BIO 4471	(3)	Parasitology
			BIO L471	(1)	Parasitology Lab
Area V Require	-	· · · · · · · · · · · · · · · · · · ·	BIO 4478	(3)	Cell Biology
BIO 1101	(3)	Organismal Biology	BIO L478	(1)	Cell Biology Lab
BIO L101	(1)	Organismal Biology Lab	BIO 4480	(3)	Histology
CHM 1143	(3)	General Chemistry II	BIO L480	(1)	Histology Lab
CHM L143	(1)	General Chemistry II Lab	BIO 4482	(3)	Molecular Biology
IS 2241	(3)	Computer Concepts and Applications	BIO L482	(1)	Molecular Biology Lab
TROY 1101	(1)	University Orientation	CHM 3352	(3)	Biochemistry
1KO1 1101	(1)	Oniversity Orientation	CHM L3352	(1)	Biochemistry Lab
Complete one se		hysics sequence not required for medi-			MISTRY EDUCATION
PHY 2252	(3)	General Physics I			
PHY L252	(1)	General Physics I Lab			teacher certification should select
PHY 2253	(3)	General Physics II	dents should co	ırsı major neult with	and education as a second major. Stutheir advisers concerning all certification
PHY L253		General Physics II Lab	requirements. C	HM 3352	is required for Alabama teacher certifi-
or	(1)	General Filysies II Lab	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	lies Requirements
PHY L263	(1)	Physics II with Calculus Lab	Area III		•
			BIO 1100	(3)	Principles of Biology

## Requirements for the major

Lectures and their corresponding labs must be taken together.

Lectures	ana men	correspon	aing tabs must be taken together.
BIO 222	9	(3)	General Ecology
BIO L22	29	(1)	General Ecology Lab
BIO 332	0	(3)	Genetics
BIO L32	20	(1)	Genetics Lab
BIO 337	2	(3)	Microbiology
BIO L37	12	(1)	Microbiology Lab
CHM 33	42	(3)	Organic Chemistry I
CHM L3	342	(1)	Organic Chemistry I Lab
CHM 33	43	(3)	Organic Chemistry II
CHM L3	343	(1)	Organic Chemistry II Lab
MTH 22	10	(3)	Applied Statistics

Select 32 semester hours from the courses listed below:

BIO 3347 (3) Human Anatomy and Physiology I

		,
Specialized Ge	neral Stud	lies 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 Require	ements	
IS 2241	(3)	Computer Concepts and Applications
TROY 1101	(1)	University Orientation
Select one serie	s:	
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		

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PHY 2262	(3)	Physics with Calculus I	CHM 1142	(3)	General Chemistry I
PHY L262	(1)	Physics with Calculus I Lab	CHM L142	(1)	General Chemistry I Lab
PHY 2263	(3)	Physics with Calculus II	MTH 1125	(4)	Calculus I
PHY L263	(1)	Physics with Calculus II Lab	Chemistry, Mat		and Physics Core Courses
			CHM 1143	(3)	General Chemistry II
<b>Chemistry Core</b> (	34 Hours	)	CHM L143	(1)	General Chemistry II Lab
CHM 1143	(3)	General Chemistry II	CHM 2242	(3)	Analytical Chemistry
CHM L143	(1)	General Chemistry II Lab	CHM L242	(1)	Analytical Chemistry Lab
CHM 2242	(3)	Analytical Chemistry	CHM 3342	(3)	Organic Chemistry I
CHM L242	(1)	Analytical Chemistry Lab	CHM L342	(1)	Organic Chemistry I Lab
CHM 3342	(3)	Organic Chemistry I	CHM 3343	(3)	Organic Chemistry II
CHM L342	(1)	Organic Chemistry I Lab	CHM L343	(1)	Organic Chemistry II Lab
CHM 3343	(3)	Organic Chemistry II	CHM 3381	(3)	Physical Chemistry I
CHM L343	(1)	Organic Chemistry II Lab	CHM L381	(1)	Physical Chemistry I Lab
CHM 3381	(3)	Physical Chemistry I	CHM 3382	(3)	Physical Chemistry II
CHM L381	(1)	Physical Chemistry I Lab	CHM 4444	(3)	Advanced Inorganic Chemistry
CHM 3382	(3)	Physical Chemistry II	CHM 4445	(3)	Instrumental Analysis
CHM 4444	(3)	Advanced Inorganic Chemistry	CHM L445	(1)	Instrumental Analysis Lab
CHM 4445	(3)	Instrumental Analysis	MTH 1126	(4)	Calculus II
CHM L445	(1)	Instrumental Analysis Lab	Select one series		
MTH 1126	(4)	Calculus II	PHY 2252	(3)	General Physics I
			PHY L252	(1)	General Physics I Lab
Select three hours	of chemist		PHY 2253	(3)	General Physics II
CHM 3352	(3)	Biochemistry	PHY L253	(1)	General Physics II Lab
CHM L352	(1)	Biochemistry Lab	or		
CHM L382	(1)	Physical Chemistry II Lab	PHY 2262	(3)	Physics with Calculus I
CHM 4400	(3)	Special Topics	PHY L262	(1)	Physics with Calculus I Lab
CHM 4403	(3)	Advanced Organic Chemistry	PHY 2263	(3)	Physics with Calculus II
CHM L444	(1)	Advanced Inorganic Chemistry Lab	PHY L263	(1)	Physics with Calculus II Lab
CHM 4491/2	(1-3)	Guided Independent Research			
CHM 4493/4	(1-3)	Guided Independent Study	Select five hours	of chemists	ry electives:
CHM 4499	(1)	Senior Research Seminar	CHM 3352	(3)	Biochemistry
			CHM L352	(1)	Biochemistry Lab
C	HEMIST	RY MINOR (20 HOURS)	CHM L382	(1)	Physical Chemistry II Lab
CHM 1142	(3)	General Chemistry I	CHM 4400	(3)	Special Topics
CHM L142	(1)	General Chemistry I Lab	CHM 4403	(3)	Advanced Organic Chemistry
CHM 1143	(3)	General Chemistry II	CHM L444	(1)	Advanced Inorganic Chemistry Lab
CHM L143	(1)	General Chemistry II Lab	CHM 4491/2	(1-3)	Guided Independent Research
CHM 3342	(3)	Organic Chemistry I	CHM 4493/4	(1-3)	Guided Independent Study
CHM L342	(1)	Organic Chemistry I Lab	CHM 4499	(1)	Senior Research Seminar
CHM 3343	(3)	Organic Chemistry II			
CHM L343	(1)	Organic Chemistry II Lab	COMPRE		GENERAL SCIENCE PROGRAM
				(	46 HOURS)
Select four addition	onal hours	of advanced chemistry courses, such	Specialized Gen	eral Studi	es Requirements
CHM 2242/L242		Analytical Chemistry and lab	Area III		
CHM 3352 / L352		Biochemistry and Lab	BIO 1101	(3)	Principles of Biology
011111111111111111111111111111111111111		Siovinomony una Euc	BIO L101	(1)	Principles of Biology Lab
Note: The chemis	try minor	requires 20 hours in addition to the	CHM 1142	(3)	General Chemistry I
hours required for	a major in	another discipline. For example, the	CHM L142	(1)	General Chemistry I Lab
		nic Chemistry II and lab, so a student	MTH 1125	(4)	Calculus I
hours of advanced		eed to select eight, not four, additional			
nours or advanced	Chemisuy	courses.	Area V Require	ments	
	CATCEDA	V PROCE AM (51 HOURS)	BIO 1101	(3)	Organismal Biology
СН	LIVIISTRY	Y PROGRAM (51 HOURS)	BIO L101	(1)	Organismal Biology Lab
Specialized Gene	ral Studie	s Requirements	CHM 1143	(3)	General Chemistry II
Area III			CHM L143	(1)	General Chemistry II Lab
BIO 1100	(3)	Principles of Biology	IS 2241	(3)	Computer Concepts/Applications
BIO L100	(1)	Principles of Biology Lab	TROY 1101	(1)	University Orientation

Introduction to Computer

of Computation

Organization and Architectures

Nature of Programming Languages

Formal Languages and the Theory

			PHY 4411	(3)	Advanced Modern Physics
Select one series	s:		PHY 4459	(3)	Optics
PHY 2252	(3)	General Physics I	PHY L459	(1)	Optics lab
PHY L252	(1)	General Physics I Lab	PHY 4420	(3)	Mechanics
PHY 2253	(3)	General Physics II	PHY 4430	(3)	Electromagnetic Fields
PHY L253	(1)	General Physics II Lab	PHY 4495	(3)	Topics in Physics
or	. ,	,			
PHY 2262	(3)	Physics I with Calculus	Select eight ho	urs of upp	per 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	CON	1PUTER S	SCIENCE MINOR (18 HOURS)
			CS 2250	(3)	Computer Science I
Required Cour	ses		CS 2255	(3)	Computer Science II
BIO 3320	(3)	Genetics	05 2200	(5)	company serone ii
BIO L320	(1)	Genetics Lab	Salaat 12 samas	tan hauna a	of computer science courses with at least
CHM 3342	(3)	Organic Chemistry I	one course bein	o at the 40	of computer science courses with at least
CHM L342	(1)	Organic Chemistry I Lab	one course sem	s at the 10	
MTH 2210	(3)	Applied Statistics			
PHY 3310	(3)	Modern Physics	COMP	PHTER SC	CIENCE PROGRAM (48 HOURS)
PHY L310	(1)	Modern Physics Lab			
SCI 3335	(3)	Physical Geology	•	neral Stud	ies Requirements
SCI L335	(1)	Physical Geology Lab	Area III		
SCI 3336	(3)	Principles of Astronomy	MTH 1125	(4)	Calculus I, in lieu of MTH 1110
Select one of the Biology Concen		concentrations:	Select a four ho (Students must of physics. Also see	complete ai	ab combination from the following: n eight hour sequence in chemistry or equirements )
BIO 2229	(3)	General Ecology	CHM 1142	(3)	General Chemistry I
BIO L229	(1)	General Ecology Lab	CHM L142	(1)	General Chemistry I Lab
BIO 3347	(3)	Anatomy & Physiology I	PHY 2252	(3)	General Physics I
BIO L347	(1)	Anatomy & Physiology I Lab	PHY L252	(1)	General Physics I Lab
BIO 3348	(3)	Anatomy & Physiology II		(-)	2
BIO L348	(1)	Anatomy & Physiology II Lab	Select remaining	g Area III d	courses as shown in the General Studies
BIO 3372	(3)	Microbiology	section of this co		
BIO L372	(1)	Microbiology Lab			
Select one hotan	( )	vith corresponding lab (four hours).	Area V Require	ments	
Scieci one solun	iy course n	un corresponding the your nours).	CS 2250	(3)	Computer Science I
Select one zoolo	ov course	with corresponding lab (four hours).	MTH 1126	(4)	Calculus II
Select one 20010	gy course	win corresponding the your noursy.	TROY 1101	(1)	University Orientation
Chemistry Conc	entration:		Calant a favo ha	//	ab combination from the following:
CHM 2242	(3)	Analytical Chemistry			n eight hour sequence in chemistry or
CHM L242	(1)	Analytical Chemistry Lab	physics. Also se		
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	ses	
G 1	c		CS 2255	(3)	Computer Science II
	m of eight	semester hours of coursework from the	CS 3310	(3)	Foundations of Computer Science
following: CHM 3382	(2)	Physical Chemistry II	CS 3323	(3)	Data Structures
CHM 3382 CHM L382	(3)	Physical Chemistry II Physical Chemistry II Lab	CS 3329	(3)	Analysis of Algorithms
CHM L382 CHM 4403	(1)	Advanced Organic Chemistry	CS 3332	(3)	Software Engineering I
	(3)	Advanced Inorganic Chemistry Advanced Inorganic Chemistry	CS 3360	(3)	Concepts of Object-Oriented
CHM 4444 CHM L444	(3) (1)	Advanced Inorganic Chemistry Advanced Inorganic Chemistry Lab	~~		Programming I
CITIVI L444	(1)	Auvanceu morganie Chemisuv Lan	CS 3365	(3)	Introduction to Computer

CS 3365

CS 3370

CS 3372

(3)

(3)

(3)

**Physics Concentration:** 

(1)

(3)

(1)

Advanced Inorganic Chemistry Lab

Instrumental Analysis

Instrumental Analysis Lab

CHM L444

CHM 4445

CHM L445

CS 4420 CS 4445	(3) (3)	Introduction to Database Systems Data Communication and	information regarding associate degrees.		
		Networking	General Studie	s Requirem	ents
CS 4448	(3)	Operating Systems	Area I	s recquirem	CHUS
MTH 2210	(3)	Applied Statistics	ENG 1101	(2)	Composition and Modern
MTH 2215	(3)	Applied Discrete Mathematics		(3)	English I
Select two of the fe	ollowing:		ENG 1102	(3)	Composition and Modern English II
CS 3320	(3)	Business Systems Programming			Engusii ii
CS 3325	(3)	Operations Research	Area II		
CS 3331	(3)	Fundamentals of Artificial	Select one of the		W 1117 1 1 C 1660
00.0074	(2)	Intelligence	ENG 2205	(3)	World Literature before 1660
CS 3361	(3)	Concepts of Objected Oriented Programming II	ENG 2206	(3)	World Literature after 1660
CS 4401	(2)	-	ENG 2211	(3)	American Literature before 1875
CS 4401	(3)	Advanced Artificial Intelligence	ENG 2212	(3)	American Literature after 1875
CS 4443	(3)	Web Based Software Development	ENG 2244	(3)	British Literature before 1785
CS 4447	(3)	Systems Analysis and Design	ENG 2245	(3)	British Literature after 1785
CS 4451	(3)	Computer Security and Reliability			
CS 4461	(3)	Software Engineering II			
CS 4462	(3)	Special Topics in Object-Oriented	Select one of the	e following:	
GG 440#	(2)	Technology	ART 1133	(2)	Visual Arts
CS 4495	(3)	Special Topics in Computer Science	DRA 2200	(2)	Introduction to Drama
			MUS 1131	(2)	Music Appreciation
COM	PUTER S	CIENCE, APPLIED MAJOR	WIUS 1131	(2)	Wusic Appreciation
	(3	36 HOURS)			
Specialized Gene	ral Studie	s Requirements	Area III		
Area III	i ui Stuuit	s requirements	MTH 1125	(4)	Calculus I
MTH 2201	(2)	Business Calculus			
	(3)		Select one scien	ce course an	nd corresponding lab:
Select additional	Area III r	equirements as shown in the General	BIO 1100	(3)	Principles of Biology
Studies section of		g.	BIO L100	(1)	Principles of Biology Lab
Area V Requirem	ents		SCI 2233	(3)	Physical Science
IS 2241	(3)	Computer Concepts and	SCI L233	(1)	Physical Science Lab
		Applications	SCI 2234	(3)	Earth and Space Science
MTH 2215	(3)	Applied Discrete Mathematics	SCI L234	(1)	Earth and Space Science Lab
TROY 1101	(1)	University Orientation	2	(-)	
			Area IV		
Major Requirem			Select one of the	following:	
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 1112	(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	HIS 1123	(3)	World History Holli 1300
		Networking			
CS 4447	(3)	Systems Analysis and Design	Area V		
CS 4448	(3)	Operating Systems	IS 2241	(3)	Computer Concepts and
			TROY 1101	(1)	Applications University Orientation
Select three of the			1101	(1)	Oniversity Orientation
CS 3320	(3)	Business Systems Programming			
CS 3332	(3)	Software Engineering I	Additional requ		
CS 3347	(3)	Advanced Programming II	CS 2250	(3)	Computer Science I
CS 4449	(3)	Applied Networking	CS 2255	(3)	Computer Science II
CS 4451	(3)	Computer Security	CS 3310	(3)	Foundations of Computer Science
CS 4495	(3)	Special Topics in Computer Science	CS 3323	(3)	Data Structures
			CS 3329	(3)	Analysis of Algorithms
COMPIT	ER SCIF	INCE A.S. DEGREE (60 HOURS)	CS 3332	(3)	Software Engineering I
20			CS 3365	(3)	Introduction to Computer
		e of Science Degree			Organization and Architectures
See the academic	regulation	as section of this catalog for additional	MTH 2215	(3)	Applied Discrete Mathematics

Select 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:

A. 12 additional hours of upper-level (3000-4000) criminal justice courses, as approved by the adviser for the major, or

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

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 J	USTICE 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.

## **CYBER SECURITY MINOR/CERTIFICATE (18 HOURS)**

Requirements for Minor (6)

. 1		- (-)
CJ 4475	(3)	Seminar in Cyber Security
CS 3310	(3)	Foundations of Computer Science
Select 15 ho	ours from th	he following. See Course Descriptions for
pre-requisit	es and rest	rictions:
CJ 1101	(3)	Introduction to Criminal Justice
CJ 4473	(3)	Computer Forensics
CJ 4472	(3)	Cyber Crime
CS 3375	(3)	Foundations of Networking
-or-		
CS 4445	(3)	Data Communication and Networking
CS 4449	(3)	Applied Networking
	. ,	

CS 3380	(3)	Cyber Security
-or-		
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.

		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
ENVIRO	NMENTAI	SCIENCE MINOR (18-20 HOURS)
BIO 2202	(3)	Principles of Environmental Science
BIO L202	(1)	Principles of Environmental Science Lab
BIO 3328	(3)	Environmental Pollution and Control
BIO L328	(1)	Environmental Pollution and Control Lab
Complete 12 ho	ours from the	e following:
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

# ENVIRONMENTAL SCIENCE PROGRAM (55 HOURS)

Biochemistry

Biochemistry Lab

Instrumental Analysis

Instrumental Analysis Lab

\*Special Topics in Biology (BIO 4476), Guided Independent Studies (BIO 4491/4492) and Guided Independent Research

CHM 3352

**CHM L352** 

CHM 4445

**CHM L445** 

(3)

(1)

(3)

(1)

(BIO 4493, 4494)	may	only	be	taken	for	a	maximum	$\mathbf{of}$	6
semster hours.									

(RIO	4493,	4494)	may	only	be	taken	for	a	maximum	of	6
semst	er hou	rs.									

<b>Specialized General Studies</b>	Requirements
Area III	

(3)

(1)

S.
S.
S.

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

General Chemistry II

General Chemistry II Lab

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

## **Program Requirements**

CHM 1143

**CHM L143** 

(3)	Principles of Cell Biology
(1)	Principles of Cell Biology Lab
(3)	General Ecology
(1)	General Ecology Lab
(3)	Genetics
(1)	Genetics Lab
(3)	Organic Chemistry I
(1)	Organic Chemistry I Lab
(3)	Organic Chemistry II
(1)	Organic Chemistry II Lab
(3)	Applied Statistics
	(1) (3) (1) (3) (1) (3) (1) (3) (1)

Environmental	Science C	ore (32 semester hours):
BIO 2202	(3)	Principles of Environmental Science
BIO L202	(1)	Principles of Environmental Science Lab
BIO 3328	(3)	Environmental Pollution and Control
BIO L328	(1)	Environmental Pollution and Control Lab
BIO 4413	(3)	Limnology
BIO L413	(1)	Limnology Lab
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

Complete eight hours of adviser-approved upper-level courses in

biology, marine biology, chemistry or mathematics.

BIO 4488/4489/4490 (1-8) Internship in Environmental Science

## 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.

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

## **General Studies Requirements**

Area	İ

ENG 1101	(3)	Composition and Modern English I
ENG 1102	(3)	Composition and Modern English II

## Area II

Select one	of the following:	
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ART 1133	(2)	Visual Arts
DRA 2200	(2)	Introduction to Drama
MUS 1131	(2)	Music Appreciation

## Select one of the following:

Beiece one of the	jouowing.	
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
FNG 2245	(3)	British Literature after 1785

Select six hours of one foreign language.

#### Area III

Select one	of	the	foll	lowing:
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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 150

Area V		
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.

## 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.

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## **General Studies Requirements**

Area	I

ENG 1101	(3)	Composition and Modern English I
ENG 1102	(3)	Composition and Modern English II

#### Area II

ADT 1122

Select one of the following:

AK1 1133	(2)	v isuai Aits
DRA 2200	(2)	Introduction to Drama
MUS 1131	(2)	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 III

Select one of the following:

MTH 1110	(3)	Finite Mathematics
MTH 1112	(3)	Pre-calculus Algebra

Select one science course and corresponding lab:

Sereer one serence	com se um	ar corresponding raio.
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:

sereer one of m	e jouro ming.	•
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 HIS 1123	(3) (3)	World History to 1500 World History from 1500
Area V		
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.

GEOG	RAPHIC	INFORM	MATI(	ON SYS	TEMS (GIS)
MINOR (18 HOURS)					
CEN ( 2200	(2)	T .	1	4 010	

GEM 3390	(3)	Introduction to GIS
<b>GEM L390</b>	(1)	Introduction to GIS Lab
GEM 3391	(3)	Applications of GIS
<b>GEM L391</b>	(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:

## • Data Collection/Analysis

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	GEM 2200	(3)	Basics of Cartography and Surveying
GEM L330 (1) Advanced Measurement Analysis Lab	GEM L220	(1)	Basics of Cartography and Surveying Lab
Lab	GEM 3330	(3)	Advanced Measurement Analysis
GEM L371 (1) Measurement for GIS Lab	GEM L330	(1)	2
	GEM L371	(1)	Measurement for GIS Lab

## • Image Processing

GEM 1100	(1)	Computer-Aided Drafting
GEM L110	(2)	Computer-Aided Drafting Lab
GEM 3366	(3)	Photogrammetry and Remote Sens-
		ing
GEM L366	(1)	Photogrammetry and Remote Sens-
		ing 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

# (3) Principles of Physical Geography

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

## Select one six-hour sequence:

Select of	ıe sıx-nou	r sequence	2:
HIS	1101	(3)	Western Civilization I, or placement
HIS	1102	(3)	Western Civilization II, or placement
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 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 nine 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

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.

#### 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.

## Public History 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

Tree Treequ		
HIS 1111	(3)	U.S. to 1877, or placement
HIS 1112	(3)	U.S. since 1877, or placement
IS 2241	(3)	Computer Concepts and Applications
TROY 1101	(1)	University Orientation

## Requirements for the Major

HIS 3375	(3)	Research and Methodology
HIS 4425	(3)	Principles of Public History
HIS 4470	(3)	Local History
HIS 4471	(3)	Oral History
HIS 4490	(3)	Senior Seminar
HIS 4499	(3)	Internship in History
		(90 contact hours)

					COL	ELGE OF MICIO MIND SCIENCES
PHI 2204	(3)	Ethic	s and the Modern World	CLA 2290	(3)	Classical Literature in English Translation
C-1+ 0 1	C		1	PHI 2203	(3)	Introduction to Philosophy
seieci 9 nou phasis.	rs oj ap	pprovea	upper-level history courses in any em-	PHI 3301	(3)	Western Philosophy
phasis.				ANT 2280	(3)	World Religions
Select 6 hou	rs from	the cou	rses listed below:			
ANT 3330	(3)		orical Archaeology			
ART 2250	(3)		ey of Art History I	LEAD	DERSHIP	STUDIES MINOR (18 HOURS)
ART 2251	(3)		ey of Art History II	LDR 1100	(3)	Introduction to Leadership
CJ 4435	(3)		t Writing	LDR 2200	(3)	Tools for Leaders
GEO 4403	(3)		ervation	LDR 3300	(3)	Leadership Theory
GEO 4406	(3)	Urba	nism	LDR 4400	(3)	Leadership Seminar
GEO 4408	(3)	Rural	America: Past & Present			
HIS 3360	(3)		duction to Archives:	Select at least an	additiona	l six hours from the following:
	( )		ries and Issues	AS 3312	(3)	Air Force Leadership Studies I
HIS 3362	(3)	Arch	ival Methods and Practices	AS 3313	(3)	Air Force Leadership Studies II
HIS 4450	(3)	Envi	ronmental History of	COM 3326	(3)	Conflict Management
	(-)		United States	COM 3345	(3)	Group Discussion and Leadership
MGT 3371	(3)		iples of Management	COM 4426	(3)	Organizational Communication
MGT 4475	(3)		l Business Management	SED 4400	(3)	Secondary Classroom Managemen
POL4421	(3)		duction to Public Administration	HIS 3304	(3)	Military History of the United Stat
. 0221	(5)	111110	**************************************	HIS 3315	(3)	Vietnam War
				HIS 3318	(3)	History of American Women
	Н	IISTOR	Y MINOR (18 HOURS)	IDS 2200	(3)	Interdisciplinary Studies
			I receive credit for no more than six	LDR 4402	(2)	Leadership Field Experiences
			00-level history courses taken before or	LDR 4403	(1)	Contemporary Issues in Leadership
concurrently	with H	18 33/5		LDR 4444	(3-6)	Leadership Internship
THG 2255		(2)	D 1 116 4 11	LDR 4450	(1-6)	Leadership Service Learning
HIS 3375		(3)	Research and Methodology	LDR 4493-94	(1-3)	Guided Independent Study
Select 15 ho	urs of u	pper-lev	vel history courses.	MGT 3371	(3)	Principles of Management and Organizational Behavior
				MGT 3375	(3)	Human Resources Management
Note: HIS 1	!111 an	d HIS	1112 are prerequisites for upper-level	MGT 4472	(3)	Organizational Behavior
American hi	story co	ourses a	nd must be taken if they have not been	MSL 2201	(2)	Individual Leadership Studies
taken for ger				MSL 2202	(2)	Leadership and Teamwork
Note: HIS 1	!101 an	d HIS	1102 are prerequisites for upper-level	MSL 2204	(2)	Leadership Lab
European hi taken for gei	istory co	ourses a	and must be taken if they have not been	PHI 2204	(3)	Ethics and the Modern World
				POL 3340	(3)	U.S. Government – Executive Branch
Н	OMEL	AND SI	ECURITY MINOR (18 HOURS)	POL 3364	(3)	State and Local Politics
CJ 1101		(3)	Introduction to Criminal Justice	POL 4421	(3)	Introduction to Public Administration
Select 15 add	ditional	hours f	rom the following as approved by the	PSY 4410	(3)	Business and Industrial Psychology
adviser:		, , , , , , , , , , , , , , , , , , ,	g g	SOC 3301	(3)	Social Change in the Information
CJ 3335		(3)	Private and Public Security	SOC 2210	(2)	Age
ar 116 -		(2)	Administration	SOC 3310	(3)	Minorities in U.S. Social Structure
CJ 4435		(3)	Grant Writing	SS 4498	(3)	Social Science Theory
CJ 4440		(3)	Terrorism			
CJ 4470		(3)	Criminal Justice Issues in Homeland Security	I IRED	AI STUD	IES PROGRAM (60 HOURS)
CJ 4472		(3)	Cyber Crime	LIDEK	IL GIUD	LEST ROOMEN (OU HOURS)
CJ 4488		(3)	Internship (limit one)		• •	***7
POL 3364		(3)	State and Local Politics	Required Cours		
POL 4422		(3)	Public Policy Making	POL 2241 (3		American National Government
				POL 2260 (3	I	World Politics

## **HUMANITIES MINOR (18 HOURS)**

ART 3302 (3) History of the Arts CLA 2260 (3) Classical Mythology

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

**Required Courses in Area V:**ANT 2200 (3) Anthropology

(3)

(3)

POL 2260

SOC 2275

ECO 2251 (3) Principles of Macroeconomics

World Politics

Introduction to Sociology

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ECO 2252	(3)	Principles of Microeconomics	PSY 3380	(3)	Social Psychology
GEO 2210	(3)	World Regional Geography	SOC 3332	(3)	Family Violence
PSY 2200	(3)	General Psychology	SOC 4409	(3)	Political Sociology
			SOC 4436	(3)	Social Evolution: Anarchy
Required Li	beral Stud	ies Courses (30 shrs)			Democracy
LST 3301	(3)	Methods in Critical Inquiry			
LST 3310	(3)	Critical Theory	Cognitive ar	nd Languag	ge Studies (select at least six hours):
LST 4499	(3)	Senior Seminar in Liberal	ANT 3340	(3)	Language in Culture and Society
		Studies	COM 3341	(3)	American Public Address
Select 21 hor	urs from th	ne following:	COM 4433	(3)	Literary Criticism
ANT 3310	(3)	Cultural Anthropology	COM 3328	(3)	International/Intercultural
ECO 4456	(3)	Economic Foundations in			Communications
		Capitalism	ENG 3305	(3)	Folklore/Mythology
ENG 3305	(3)	Folklore/Mythology	ENG 3320	(3)	Introduction to Linguistics
ENG 4405	(3)	History of the English Language	ENG 4405	(3)	History of the English Language
GEO 3301	(3)	Principles of Cultural Geography	PSY 4460	(3)	Cognitive Psychology
GEO 4402	(3)	Political Geography			
HIS 3342	(3)	Renaissance and Reformation	Global Stud	ies (select a	t least six hours):
POL 3300	(3)	Foundations of Political Science	ANT 3310	(3)	Cultural Anthropology
POL 3330	(3)	Political Theory	ANT 3320	(3)	Prehistory of North American
PSY 3370	(3)	Comparative Psychology		. ,	Indians
PSY 3380	(3)	Social Psychology	ANT 3321	(3)	North American Indians Since
SOC 3300	(3)	Social Institutions		( )	Contact
SOC 3301	(3)	Social Change	ANT 4410	(3)	High Civilizations of the Old
				(-)	World
Select at leas	st six hours	from each of the following for a total of	ANT 4411	(3)	High Civilizations of the New
30 hours:			111/1 1111	(5)	World
			ECO 4555	(3)	Comparative Economic Systems
Societal Stud	dies (select	at least six hours):	ENG 4465	(3)	African American Literature
ANT 4410	(3)	High Civilizations of the Old	GEO 3301	(3)	Principles of Physical Geography
		World	GEO 4402	(3)	Political Geography
ANT 4411	(3)	High Civilizations of the New	POL 3351	(3)	International Relations
		World	POL 4410	(3)	International Political Economy
ECO 4451	(3)	International Trade	POL 4431		
HIS 3342	(3)	Renaissance and Reformation	POL 4431	(3)	Comparative Governments
HIS 3343	(3)	Age of Absolutism			
HIS 3344	(3)	Age of Reason	M	ARINE BI	OLOGY PROGRAM (55 HOURS)
POL 3360	(3)	Contemporary Political Thought			
POL 4431	(3)	Comparative Government	*Special Top	oics in Biolo	gy (BIO 4476), Guided Independent ) and Guided Independent Research (BIO
SOC 3300	(3)	Social Institutions	4493, 4494)	mav only be	e taken for a maximum of 6 semster hours.
SOC 3301	(3)	Social Change	, , , , , , ,		
SOC 4420	(3)	Sociological Theory	Students mus	st take cours	ses at both Troy University and Dauphin
SOC 4435	(3)	The Sociology of Complex	Island Sea La	ab.	
50050	(5)	Societies Societies			
		Societies	Specialized (	General St	udies Requirements
Rehavioral S	Studies (sel	ect at least six hours):	Area III		
ANT 3360	(3)	Magic, Witchcraft, and Religion	BIO 1100	(3)	Principles of Biology
COM 3324	(3)	Gender Communications	BIO L100	(1)	Principles of Biology Lab
POL 3351	(3)	International Relations	CHM 1142	(3)	General Chemistry I
POL 4415	(3)	International Conflict	CHM L142	(1)	General Chemistry I Lab
			MTH 1125	(4)	Calculus I
POL 4440	(3)	Political Sociology			
POL 4460	(3)	Intercultural Relations	Area V Requ		
PSY 3304	(3)	Abnormal Psychology	IS 2241	(3)	Computer Concepts and Apps.
PSY 3312	(3)	Psychology of Women	TROY 1101	(1)	University Orientation
PSY 3370	(3)	Comparative Psychology	BIO 1101	(3)	Organismal Biology

General Chemistry I

BIO L101	(1)	Organismal Biology Lab
CHM 1143	(3)	General Chemistry II
CHM L143	(1)	General Chemistry II Lab
	one sequence	(physics sequence not required

ed for medical technology concentration):

mearear recimoro	Sy concenti	anony.
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 corresponding labs must be taken together.

	1	0	0
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

Complete 12 additional semester hours of adviser-approved biology 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

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:* 

(3)

C111V1 11 12	(3)	General Chemistry 1
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

CHM 1142

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

## 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 fo	llowing:	
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

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.

## **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.

M	ILITARY S	CIENCE MINOR (19 HOURS)
MSL 3301	(3)	Leadership and Problem Solving
MSL 3302	(3)	Leadership and Ethics
MSL 3304	(1)	Leadership Lab
MSL 3305	(1)	Leadership Lab
MSL 4401	(3)	Leadership and Management
MSL 4402	(3)	Officership
MSL 4404	(1)	Leadership Lab
MSL 4405	(1)	Leadership Lab

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

PHYS	SICAL SC	CIENCE 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 serie.	s:	
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 (three to four semester hours).

	PHYSI	CS MINOR (19 HOURS)
PHY 3310	(3)	Modern Physics
PHY L310	(1)	Modern Physics Lab
PHY 4420	(3)	Mechanics
Select one serie	es:	
PHY 2252	(3)	Gen. Physics I
PHY L252	(1)	Gen. Physics Lab I
PHY 2253	(3)	Gen. Physics II
PHY L253	(1)	Gen. Physics Lab II
or		
PHY 2262	(3)	Physics I Calculus
PHY L262	(1)	Physics I with Calculus Lab
PHY 2263	(3)	Physics II with Calculus
PHY L263	(1)	Physics II with Calculus Lab

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

POLITICAL SCIENCE MAJOR (36 HOURS)		
Area V Require	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 Require	ements	
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:

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 3355	(3)	Southern Politics
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.

## <u>International Politics Concentration:</u>

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

Select six hours from the following:

		C
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 4467	(3)	Asian 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 S	SCIENCE MINOR (18 HOURS)
0	(3)	Foundations of Political Science

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.

## 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. 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**

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 of the five following concentrations:

#### Anthropology Concentration:

ANT 3310	(3)	Cultural Anthropology
ANT 3311	(3)	Physical Anthropology

Select at least 18 hours of additional 3000/4000-level anthropology courses as approved by your faculty adviser.

## General Social Science Concentration:

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, ÉCO 2252, GEO 2210, ANT 2200, PÓL 2260 [World Politics], or SOC 2230) in at least three disciplines.

#### Geography Concentration:

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:

## <u>Leadership Concentration:</u>

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

\*Requires approval of the director of the Institute of Leadership Development

Select an additional 18 hours 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
HIS 4415	(3)	Contemporary America
MGT 3371	(3)	Principles of Management and
		Organizational Behavior
MGT 3375	(3)	Human Resources Management
MSL 2202	(2)	Leadership and Teamwork
MSL 2204	(1)	Leadership Lab
POL 4422	(3)	Public Policy Making
POL 3351	(3)	Foundations of International
		Relations
POL 4421	(3)	Introduction to Public Administration
PSY 4410	(3)	Business and Industrial Psychology
SOC 3301	(3)	Social Change in the Information Age
SOC 3302	(3)	Small Groups

#### Sociology Concentration:

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 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 IV Requirements

SOC 2275 Introduction to Sociology

## Area V Requirements

IS 2241	(3)	Computer Concepts and Applications
TROY 1101	(1)	University Orientation
SOC 2280	(3)	Social Problems in Contemporary
500 2200	(3)	Society

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.

## Requirements for the Major

SS 3375	(3)	Introduction to Social Science
		Inquiry
SS 3376	(3)	Application of Social Scientific
		Inquiry
SOC 4420	(3)	Sociological Theory

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GEM L220 GEM 3309 GEM L309 GEM L310 GEM L310 GEM L330 GEM L330 GEM L330 GEM L330 GEM L366 GEM L366 GEM L370 GEM L379 GEM L379 GEM L379 GEM L391 GEM L391 GEM L405 GEM L405 GEM L407 GEM L407	(1) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Basics of Surveying Lab Land Parcel Admin & Law Land Parcel Admin & Law Land Surveying Practice Boundary Retracement Seminar Advanced Measurement Analysis Advanced Measurement Analysis Lab  Photogrammetry and Remote Sensing Photogrammetry and Remote Sensing Lab Geodesy & Geodetics Geodesy & Geodetics Geodesy & Geodetics Lab Introduction to Least Squares Adjustment Introduction to GIS Introduction to GIS Introduction to GIS Introduction of GIS Applications of GIS Applications of GIS Route & Construction Surveying Route & Construction Surveying Lab Land Development
GEM L309 GEM 3310 GEM 3310 GEM 3330 GEM L330 GEM L330 GEM L366 GEM L366 GEM L370 GEM L379 GEM L379 GEM L379 GEM L391 GEM L391 GEM L391 GEM L405 GEM L405 GEM L407	(1) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	Land Parcel Admin & Law Lab Land Surveying Practice Boundary Retracement Seminar Advanced Measurement Analysis Advanced Measurement Analysis Lab  Photogrammetry and Remote Sensing Photogrammetry and Remote Sensing Lab Geodesy & Geodetics Geodesy & Geodetics Geodesy & Geodetics Lab Introduction to Least Squares Adjustment Introduction to GIS Introduction to GIS Introduction to GIS Lab Applications of GIS Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM 3310 GEM 1310 GEM 1310 GEM 3330 GEM L330 GEM L330 GEM L366 GEM 1366 GEM 1370 GEM 1379 GEM 1379 GEM 1391 GEM 1391 GEM 1405 GEM 1405 GEM 1407	(3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3)	Land Surveying Practice Boundary Retracement Seminar Advanced Measurement Analysis Advanced Measurement Analysis Lab  Photogrammetry and Remote Sensing Photogrammetry and Remote Sensing Lab Geodesy & Geodetics Geodesy & Geodetics Geodesy & Geodetics Lab Introduction to Least Squares Adjustment Introduction to GIS Introduction to GIS Introduction to GIS Introduction of GIS Applications of GIS Applications of GIS Route & Construction Surveying Route & Construction Surveying Lab
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GEM 3330 GEM L330 GEM L330 GEM L336 GEM L366 GEM L370 GEM L370 GEM J379 GEM L379 GEM L390 GEM L390 GEM L391 GEM L405 GEM L405 GEM L407	(3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3)	Advanced Measurement Analysis Advanced Measurement Analysis Lab  Photogrammetry and Remote Sensing Photogrammetry and Remote Sensing Lab Geodesy & Geodetics Geodesy & Geodetics Lab Introduction to Least Squares Adjustment Introduction to Least Squares Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
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GEM 3366 GEM L366 GEM L370 GEM L370 GEM L379 GEM L379 GEM L390 GEM L390 GEM L391 GEM L391 GEM L405 GEM L405 GEM L407	(3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3)	Photogrammetry and Remote Sensing Photogrammetry and Remote Sensing Lab Geodesy & Geodetics Geodesy & Geodetics Lab Introduction to Least Squares Adjustment Introduction to Least Squares Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM L366 GEM 3370 GEM L370 GEM 3379 GEM L379 GEM 3390 GEM L390 GEM L391 GEM L391 GEM 4405 GEM L405 GEM L407	(1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3) (1) (3)	Sensing Photogrammetry and Remote Sensing Lab Geodesy & Geodetics Geodesy & Geodetics Lab Introduction to Least Squares Adjustment Introduction to Least Squares Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM 3370 GEM L370 GEM 3379 GEM L379 GEM 3390 GEM L390 GEM L391 GEM 4405 GEM L405	(3) (1) (3) (1) (3) (1) (3) (1) (3) (1)	Sensing Lab Geodesy & Geodetics Geodesy & Geodetics Lab Introduction to Least Squares Adjustment Introduction to Least Squares Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM L370 GEM 3379 GEM L379 GEM 3390 GEM L390 GEM L391 GEM 4405 GEM L405 GEM L407	(1) (3) (1) (3) (1) (3) (1) (3) (1)	Geodesy & Geodetics Lab Introduction to Least Squares Adjustment Introduction to Least Squares Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM 3379  GEM L379  GEM 3390  GEM L390  GEM L391  GEM 4405  GEM L405  GEM 4407  GEM L407	(3) (1) (3) (1) (3) (1) (3) (1)	Introduction to Least Squares Adjustment Introduction to Least Squares Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Lab Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM L379 GEM 3390 GEM L390 GEM 3391 GEM L391 GEM 4405 GEM L405 GEM 4407 GEM L407	(1) (3) (1) (3) (1) (3) (1) (3) (1)	Adjustment Introduction to Least Squares Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Lab Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM 3390 GEM L390 GEM 3391 GEM L391 GEM 4405 GEM L405	(3) (1) (3) (1) (3) (1)	Introduction to Least Squares Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM 3390 GEM L390 GEM 3391 GEM L391 GEM 4405 GEM L405	(3) (1) (3) (1) (3) (1)	Adjustment Lab Introduction to GIS Introduction to GIS Lab Applications of GIS Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
GEM L390 GEM 3391 GEM L391 GEM 4405 GEM L405 GEM 4407 GEM L407	(1) (3) (1) (3) (1)	Introduction to GIS Introduction to GIS Lab Applications of GIS Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
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GEM 3391 GEM L391 GEM 4405 GEM L405 GEM 4407 GEM L407	(3) (1) (3) (1)	Applications of GIS Applications of GIS Lab Route & Construction Surveying Route & Construction Surveying Lab
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GEM L405 GEM 4407 GEM L407	(3) (1) (3)	Route & Construction Surveying Route & Construction Surveying Lab
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GEM 4400	(1)	Land Development Lab
OEM 4409		Hydrology
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		Geomatics Capstone
GEM 4470	(1)	Geomatics Capstone
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		Comment of CIC Products
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