

Approval Chart for Curriculum Changes

A = Approve I= Information Item¹ R= Advise & Respond²

Course Number ENVR 345 or Degree Plan(s) _____

State the requested change and reason. A memo may be attached if more space is necessary.

Please find the attached memo describing proposed changes.

Circle the number that corresponds to the requested change. Degree plan changes are on the second page.

		COUNCIL ¹								
	Change to a Course	Dept./School	College Academic	Deans	TEC	UGEC	UUAC	GRAD	Provost	President
1.	Title (description unchanged)	A	A	A		I			I	I
2.	Description (not affecting content)	A	A	A		I			I	I
3.	Content (substantive change)	A	A	A		I			A	A
4.	Number of hours (lecture, lab, contact)	A	A	A		A			A	A
5.	Course number within the hundred	A	A	I		I			I	I
6.	Course number beyond the hundred	A	A	A		A			A	A
7.	Prerequisites	A	A	A		I			I	I
8.	Course fee(s)	A	--	A		--			A	I
9.	From U to G or G to U	A	A	A		A			A	A
10.	Cross list with another department: U or G level	A	A	A		A			A	A
11.	Department of record	A	A	A		A			A	A
12.	Open or close a course	A	A	A		A			A	A
13.	New course — See website for application and process. This change includes combining or splitting a course(s).	A	A	A		A			A	A

Note: When an academic unit does not have a council, the UGEC and/or UUAC will serve as its academic council, depending on the nature of the issue.

Approval Chart for Curriculum Changes

A = Approve

I = Information Item¹

R = Advise & Respond²

		COUNCIL ³										
	Change to a Degree Plan	Dept./School	College Academic	Deans	TEC	UGEC	UUAC	GRAD	Provost	Faculty	President	Board of Trustees
1.	University Requirements — Change in approved course content ⁵	A	A	A	A				A	--	A	--
2.	University Requirements — Add or drop a required course from the University Requirements chart ⁶	A	A	A	A				A	A	A	--
3.	University Requirements — Add or drop a course from a menu within the University Requirements ⁶	A	A	A	A				A	--	A	--
4.	University Requirements — Change hours within a menu on the University Requirements chart ⁶	A	A	A	A				A	A	A	--
5.	Major — Revision of major ^{4,5}	A	A	A	A				A	--	A	--
6.	Major — Adopt or change admission requirements	A	A	A	A				A	--	A	--
7.	Major — Add ^{4,5}	A	A	A	A				A	A	A	I
8.	Major — Discontinue (proposed by the department or college)	A	A	A	A				A	A	A	I
9.	Major — Discontinue (proposed by the Provost)	See below.										
10.	GPA — Revise major or cumulative requirement	A	A	A	A				A	A	A	--
11.	Minor — Revise course selection	A	A	A	I				I	--	I	--
12.	Minor — Add	A	A	A	A				A	--	A	--
13.	Minor — Discontinue (proposed by the department or college)	A	A	A	A				A	--	A	--
14.	Minor — Discontinue (proposed by the Provost)	See below.										
15.	Degree — Add	A	A	A	A				A	A	A	I
16.	Degree — Discontinue (proposed by the department or college)	A	A	A	A				A	A	A	I
17.	Degree — Discontinue (proposed by the Provost)	See below.										
18.	Any change to a graduate degree program	A	A	A	A				A	--	A	--

COUNCIL ³										
	Provost-Proposed Change	Provost	Department	Dean	TEC	UUAC	Graduate	Faculty	President	Board of Trustees
1.	Major/Graduate Program – Discontinue (proposed by the Provost)	A	R	R		A		A	A	I
2.	Minor – Discontinue (proposed by the Provost)	A	R	R		A		--	A	--
3.	Degree – Discontinue (proposed by the Provost)	A	R	R		A		A	A	I

Approval Chart for Curriculum Changes

A = Approve I= Information Item¹ R= Advise & Respond²

COUNCIL ³									
	Change to the Catalog Information	Dept./School	College Academic	Deans	UGEC	UUAC	GRAB	Provost	President
1.	General requirements for graduation including course requirements that are common to all majors for all degrees ⁷	--	--	--		A		A	A
2.	Admission requirements	--	--	--		A		A	A
3.	Policies governing academic probation and suspension	--	--	--		A		A	A
4.	Requirements for graduating with honors	--	--	--		A		A	A
5.	Other academic policy changes	--	--	--		A		A	A

¹ Councils may request additional information about "Information" items. These items are approved as "Consent Agenda."

² The Dean and Department should respond to the Provost's recommendation to close a program in writing. Advise & Respond (R) requires that the voting body should receive the written responses at least one week prior to the vote.

³ All courses that meet University Requirements for general education must go through UGEC. Courses or degrees offered only to students seeking teacher certification must go through the Teacher Education Council. All undergraduate changes must go before the UUAC. All graduate degree plan changes must go through the Graduate Council.

⁴ A minimum of 30 hours is required for a major. A maximum is specified for each degree (e.g., BA, BS). The university minimum for elective hours is 6, unless the requirements of external accrediting bodies make it impossible.

⁵ Program or course changes that apply to any major that includes Teacher Certification will be reviewed by the college, the Teacher Education Council (TEC), and then the UUAC.

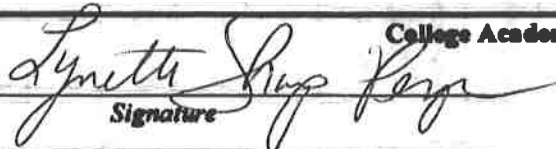
⁶ Courses that satisfy ACU's University Requirements (General Education) will normally have lower-level numbering, be free of prerequisites and co-requisites, appeal to more than one or two majors, and "not narrowly focus on those skills, techniques, and procedures specific to a particular occupation or profession" (SACS 2.7.3). Departments may request exceptions to the first three criteria.

⁷ The UUAC approved the clarification that "general requirements for graduation" means the enumerated items in the "General Requirements for Bachelor's Degrees" section of the catalog.

Revised 10-16-13

Curriculum/Catalog Changes Signature Page

Department/School Chair(s)	
 Signature	11/18/15 Approval date
 Signature	11/24/15 Approval date

College Academic Council(s)	
 Signature	1-20-16 Approval date
_____ Signature	_____ Approval date

Dean(s)	
_____ Signature	_____ Approval date
_____ Signature	_____ Approval date

Teacher Education Council	
_____ Chair's signature	_____ Approval date

General Education Council	
_____ Chair's signature	_____ Approval date

Undergraduate Academic Council	
_____ Chair's signature	_____ Approval date

Graduate Council	
_____ Chair's signature	_____ Approval date

Provost	
_____ Signature	_____ Approval date

Faculty	
_____ Chair of faculty senate	_____ Approval date

President	
_____ Signature	_____ Approval date



Request to Add or Change Course Fees

Course fees or changes to existing course fees must be approved and published in the ACU Catalog for the following year in order for them to be assessed on a student's account. Course fees which are not processed by February 1st will not be included in the fall catalog.

Request Date 11 January 2016

Amount of Fee \$200

Department Making Request Agricultural and Environmental Sciences

Contact Person Joshua Brokaw

Semester and year for fee to begin Fall 2016

Check the appropriate fee category below:

FOAP: 202170 20720 6700 10

☒ Fee is the same for every section and every student

☐ Fee applies to certain sections only

If fee applies to certain sections only, please specify below if it is a one-time fee for a single section or a repeating fee that will be applied on a regular schedule (e.g., a fee charged each time the course is taken in a summer session but not in the fall or spring).

This request applies to the following course (one per form):

Course Number/Section

Course Title

BIOL 345 and ENVR 345

Range and Wildland Plants

State the justification for your request below. You will be notified of final approval or denial.

See second major paragraph in attached memo regarding course fees.

The following signatures must be obtained before any request is approved.

Approved

Declined

Thomas E. Felt
Department Chair

13 Jan. 2016
Date

[Signature]
College Dean

1/19/16
Date

Graduate Dean (when applicable)

Date

Vice Provost

Date

Vice President for Finance

Date

If approved by all above, route to:

Controller

FOAP

Date Completed

Accounts Receivable

Fee Code for use on course

Date Completed

Registrar's Office

Date Completed

Memo

To: Dr. Lynette Sharp Penya
From: Dr. Josh Brokaw
cc: Dr. Ed Brokaw, Dr. Tom Lee
Date: November 13, 2015
Re: ENVR 345 Changes

Dr. Sharp Penya,

Two circumstances have combined to prompt minor changes to ENVR 345. The following describes four proposed changes requiring the approval of multiple committees and administrators.

First, restructuring of the Agricultural and Environmental Sciences Department has encouraged greater cooperation with the Biology Department. ENVR 345 is currently taught by faculty from the Biology Department and administered through the Agriculture and Environmental Sciences Department. Most of the students taking this course are in a wildlife environmental science track or organismal biology track. To serve both groups, we propose the cross-listing of ENVR 345 as an upper level elective for biology majors with the new course number, BIOL 345. In addition we propose changing the name and wording of the description of the course without changing the content of the course in order to more fully describe the course competencies that will best serve students in future careers.

Second, restructuring of the ACU motor pool has significantly increased the travel costs of field courses. Travel expenses incurred during the fall of 2015 on 9 afternoon field trips and 2 extended trips to northeast Texas and southwest Texas totaled approximately \$175 per student. Costs included van rental, fuel, food, and camping fees, but over 1/2 of the total incurred represents recent increases in motor pool rental fees. With volatile fuel prices and enrollment, we estimate that travel costs per student in the near future will range from \$150 to \$250 and average near \$200. Therefore, we request a travel fee of \$200 for this course. Below are the proposed changes to the catalog shown with "track changes".

ENVR 345 ~~Rangeland-Range and Wildland~~ Plants (2-3-3), fall. Identification, classification, multiple use and economic value of native and introduced range ~~and wildland~~ plants in the Southwest. Laboratory graded and credited with course. Prerequisite: Junior standing. ~~Same as BIOL 345. Special travel fee.~~

BIOL 345 Range and Wildland Plants (2-3-3), fall. Identification, classification, multiple use and economic value of native and introduced range and wildland plants in the Southwest. Laboratory graded and credited with course. Prerequisite: Junior standing. Same as ENVR 345. Special travel fee.

Agricultural and Environmental Sciences

ANIMAL SCIENCE (BS)

The animal science degree is designed to prepare students to effectively serve the livestock industry by producing graduates conversant in issues related to animal agriculture. The curriculum is designed for academically talented students interested in the application of biology and technology to the care, management and study of domestic animals. While the program emphasizes traditional farm species of dairy cattle, beef cattle and swine, it also addresses companion animals, small ruminants, and poultry. The animal science curriculum contains a fundamental animal science core accompanied by emphasis tracks. The tracks are pre-veterinary medicine and health, business and industry, livestock management, and biotechnology and research. Graduates are prepared for admission to professional and/or graduate programs for advanced studies or entry into career fields.

BS: ANIMAL SCIENCE DEGREE PLAN (ANSC)

UNIVERSITY REQUIREMENTS

Please see the University Requirements section of this catalog (page 37).

MAJOR REQUIREMENTS

Agricultural and Environmental Sciences Core

AENV 110 Introduction to Agricultural and Environmental Systems and Technology	3
ANSC 111 General Animal Science	3
ENVR 112 Plant Science	3
ENVR 233 Soil Science	3

TOTAL 12

Animal Science Core

AGRB 261 Principles of Agricultural and Applied Economics .. (3) ¹	
AGRB 382 Agribusiness Management	3
ANSC 336 Animal Nutrition	3
ANSC 343 Animal Reproduction	3
ANSC 392 Animal Health	3
ANSC 496 Animal Breeding	3
ANSC 497 Special Problems in Animal Science (capstone and writing-intensive course)	3

TOTAL 18

Kinesiology

(LM and PVH use ANSC 360 for 1 hour of PEAC activity) (1)¹

Mathematics

MATH 123 Elementary Statistics (BI and LM), MATH 124 Precalculus II (BR) or MATH 377 Statistical Methods (PVH).....	(3) ¹
---	------------------

Science Requirements

BIOL 112 General Biology I	(3) ¹
BIOL 114 General Biology I Lab	1
BIOL 113/115 General Biology II Lecture/Lab	4
BIOL 351 Genetics	3
CHEM 113 Introductory Chemistry (BI and LM) or CHEM 133 General Chemistry I (BR and PVH)	(3) ¹

TOTAL 38

¹Hours (in parentheses) may also fulfill university requirements and are not included in total major hours

ANIMAL INDUSTRY AND BUSINESS TRACK (BI)

ANSC 337 Animal Nutrition Lab	1
ANSC 345 Techniques in Animal Production	1

SUPPLEMENT FOR MAJOR (BI TRACK)

ACCT 210 Financial Accounting	3
ACCT 211 Managerial Accounting	3
CHEM 111 Introductory Chemistry Lab	1
CHEM 112/114 Introductory Organic and Biological Chemistry Lecture/Lab	4
TOTAL	11

BIOTECHNOLOGY AND RESEARCH TRACK (BR)

AENV 371 Experimental Designs and Data Analysis	3
ANSC 337 Animal Nutrition Lab	1
ANSC 431 Animal Biotechnology	3

Recommended Emphases (choose 1):

Biotechnology Emphasis (8 hours)

BIOL 312 Cell Biology	3
BIOL 475 Molecular Genetics	3
BIOL 476 Biotechnology Lab	2

Research Emphasis (7 hours)

ANSC 345 Techniques in Animal Production	1
Choose 2 from the following	6
ANSC 235 Companion Animal Management	
ANSC 363 Monogastric Livestock Production	
ANSC 483 Ruminant Livestock Production	
ENVR 350 Rangeland Management	

TOTAL 14-15

SUPPLEMENT FOR MAJOR (BR TRACK)

CHEM 131 General Chemistry Lab	1
CHEM 132/134 General Chemistry II Lecture/Lab	4
CHEM 221/223 Organic Chemistry I Lecture/Lab	4
CHEM 322/324 Organic Chemistry II Lecture/Lab	4
TOTAL	13

LIVESTOCK MANAGEMENT TRACK (LM)

ANSC 337 Animal Nutrition Lab	1
ANSC 345 Techniques in Animal Production	1
ANSC 483 Ruminant Livestock Production	3
ENVR 350 Rangeland Ecology	3

Recommended Emphases (choose 1):

Animal Production Emphasis (14 hours)

AENV 371 Experimental Designs and Data Analysis	3
ANSC 235 Companion Animal Management	3
ANSC 360 Horses and Horsemanship	2
ANSC 363 Monogastric Livestock Production	3
ANSC 431 Animal Biotechnology	3

Rangeland Ecology Emphasis (13 hours)

ENVR 345 Range and Wildland Plants	3
ENVR 354 Range Science	3
ENVR 455 Wildlife Ecology	4

Choose 1 from the following

AENV 371 Experimental Designs and Data Analysis	
ANSC 235 Companion Animal Management	
ANSC 363 Monogastric Livestock Production	
ENVR 341 Water Resources	

TOTAL 21-22

SUPPLEMENT FOR MAJOR (LM TRACK)

CHEM 111 Introductory Chemistry Lab	1
CHEM 112/114 Introductory Organic and Biological	

Chemistry Lecture/Lab	4
TOTAL	5
PRE-VETERINARY MEDICINE AND HEALTH TRACK (PVH)	
ANSC 235 Companion Animal Management	3
ANSC 360 Horses and Horsemanship	2
TOTAL	5
SUPPLEMENT FOR MAJOR (PVH TRACK)	
BIOL 355/357 Microbiology I Lecture/Lab	4
CHEM 131 General Chemistry Lab	1
CHEM 132/134 General Chemistry II Lecture/Lab	4
CHEM 221/223 Organic Chemistry I Lecture/Lab	4
CHEM 322/324 Organic Chemistry II Lecture/Lab	4
CHEM 453 Biochemistry I	3
CHEM 454 Biochemistry II	3
PSYC 120 Introduction to Psychology	(3) ¹
TOTAL	23
ELECTIVES	
Minimum (BI Track)	6
Minimum (BR Track)	6-7
Minimum (LM Track)	7-8
Minimum (PVH Track)	6
TOTAL MAJOR HOURS	72
OTHER GRADUATION REQUIREMENTS	
Minimum GPA for graduation	2.00
Minimum advanced hours	33
Minimum total hours	128
<i>Courses numbered 0** do not count in minimum hours required for degree.</i>	

ENVIRONMENTAL SCIENCE (BS)

The purpose of this degree is to fulfill the educational needs of students who are preparing for careers in natural resource management. As the national consciousness of the finite nature of natural resources has increased, the extraction industries, agriculture and manufacturers in general have been required to change the way they handle natural resources. Interactions between companies that consume natural resources and regulations governing the conservation of these resources have led to the creation of new disciplines and new career opportunities. Graduate schools in colleges of agriculture as well as in colleges of arts and sciences offer degrees and graduate assistantships in a multitude of environmental areas. The emergence of new jobs in natural resource management indicates the opportunities for graduates in environmental science.

Please see the University Requirements section of this catalog (page 37).	
Agricultural and Environmental Sciences Core	
AENV 110 Introduction to Agricultural and Environmental Systems and Technology	3
ANSC 111 General Animal Science	3
ENVR 112 Plant Science	3
ENVR 233 Soil Science	3
TOTAL	12
Environmental Science Core	
AGRB 261 Principles of Agricultural and Applied Economics	(3) ¹
AGRB 382 Agribusiness Management	3
ENVR 320 Energy Resources	3
ENVR 341 Water Resources	3
ENVR 345 Range and Wildland Plants	3
ENVR 350 Rangeland Ecology	3
ENVR 354 Range Science	3
ENVR 410 Environmental Law and Policy (capstone course)	3

ENVR 420 Environmental Thought (capstone and writing-intensive course)	3
TOTAL	24
¹ Hours (in parentheses) may also fulfill university requirements and are not included in total major hours	
SUPPLEMENT FOR MAJOR	
Mathematics	
MATH 123 Elementary Statistics (ENW, ENVO, ENVP), MATH 124 or MATH 185 (ENVF)	(3) ¹
Science Core	
BIOL 112 General Biology I	(3) ¹
BIOL 114 General Biology I Lab	1
CHEM 113 Introductory Chemistry or CHEM 133 General Chemistry I (ENVF)	(3) ¹
BIOL 113/115 General Biology II Lecture/Lab	4
Social Sciences/Humanities	
POLS 225 National Government	(3) ¹
TOTAL	8
¹ Hours (in parentheses) may also fulfill university requirements and are not included in total major hours	
WILDLIFE AND NATURAL RESOURCE MANAGEMENT TRACK (ENW)	
ANSC 336 Animal Nutrition	3
BIOL 221/223 Animal Biology or BIOL 222/224 Plant Biology	4
CHEM 111 Intro to Chemistry Lab	1
CHEM 112/114 Intro to Organic and Biological Chemistry	4
ENVR 455 Wildlife Ecology	4
ENVR 458 Wildlife Management Techniques	3
Choose 2 courses: BIOL 305, 311, 315, 322, 362, 370, 380, 403, 425, 471, or 477	6
TRACK TOTAL	25
OUTDOOR STUDIES TRACK (ENVO)	
AENV 384 Internship in Agricultural and Environmental Sciences	3
CHEM 111 Introduction to Chemistry Lab	1
CHEM 112/114 Intro to Organic and Biological Chemistry	4
ENVR 455 Wildlife Ecology	4
ENVR 458 Wildlife Management Techniques	3
KINE 241 First Aid/CPR	1
KINE 360 Leadership and Management for Health Promotion (writing-intensive course)	3
KINE 460 Program Planning for Health Promotion	3
Choose 3 courses (in addition to university requirements): PEAC 206, 210, 211, 229, 239, 341, 350, 351, or 352	3
TRACK TOTAL	25
FIELD TECHNOLOGY TRACK (ENVF)	
CHEM 131 General Chemistry Lab	1
CHEM 132/134 General Chemistry II Lecture/Lab	4
CHEM 221/223 Organic Chemistry I Lecture/Lab	4
CHEM 322/324 Organic Chemistry II Lecture/Lab	4
CHEM 341 Environmental Chemistry	3
ENVR 455 Wildlife Ecology	4
Advanced selections from AENV or ENVR	6
TRACK TOTAL	26
POLITICS AND PUBLIC POLICY TRACK (ENVP)	
Advanced selections from AENV or ENVR	3
CHEM 111 Introduction to Chemistry Lab	1
CHEM 112/114 Intro to Organic and Biological Chemistry	4
POLS 341 American Public Policy	3
Choose 4 courses: POLS 345, 360, 381, 383, 385, 395, 488, 492, or 494	12
TRACK TOTAL	23
ELECTIVES	

Minimum (ENVO, ENVW).....	6
Minimum (ENVF)	5
Minimum (ENVP)	8
TOTAL MAJOR HOURS	72
OTHER GRADUATION REQUIREMENTS	
Minimum GPA for graduation.....	2.00
Minimum advanced hours	33
Minimum total hours	128
<i>Courses numbered 0** do not count in minimum hours required for degree.</i>	

COOPERATIVE BACHELOR OF SCIENCE DEGREE (BS)

Admission Requirements

Before being admitted to a program, a student must satisfy the

requirements listed in the *ACT/SAT Placement Information* section of this catalog (page 19).

ANIMAL HEALTH PROFESSIONS COOPERATIVE (BS)

The Department of Agricultural and Environmental Sciences offers the BS degree in cooperation with some schools of veterinary medicine. In this program a bachelor's degree (BS in Animal Science) is awarded to certain qualified students who have satisfactorily completed three years of prescribed work at ACU (a minimum of 104 hours) plus one year at a recognized school of veterinary medicine.

BS: ANIMAL HEALTH PROFESSIONS COOPERATIVE DEGREE PLAN (AHPC)

UNIVERSITY REQUIREMENTS

Please see the University Requirements section of this catalog (page 37).

MAJOR REQUIREMENTS

Agribusiness

AGRB 261 Principles of Agricultural and Applied Economics .. (3)¹

Animal Science

AENV 110 Introduction to Agricultural and Environmental

Systems and Technology 3

ANSC 111 General Animal Science 3

ANSC 336 Animal Nutrition 3

ANSC 497 Special Problems in Animal Science
(capstone and writing-intensive course) 3

Biology

BIOL 112 General Biology I (3)¹

BIOL 114 General Biology I Lab 1

BIOL 113/115 General Biology II Lecture/Lab 4

BIOL 351 Genetics 3

BIOL 355/357 Microbiology Lecture/Lab 4

Chemistry

CHEM 133 General Chemistry I (3)¹

CHEM 131 General Chemistry I Lab 1

CHEM 132/134 General Chemistry II Lecture/Lab 4

CHEM 221/223 Organic Chemistry I Lecture/Lab 4

CHEM 322/324 Organic Chemistry II Lecture/Lab 4

CHEM 453 Biochemistry I 3

CHEM 454 Biochemistry II 3

English

ENGL 326 Business and Professional Writing 3

Mathematics

MATH 377 Statistical Methods I (3)¹

Physics

PHYS 110/111 General Physics I Lecture/Lab 4

PHYS 112/113 General Physics II Lecture/Lab 4

Social Science/Hine Arts/Humanities

PSYC 120 Introduction to Psychology (3)¹

TOTAL **54**

¹Hours (in parentheses) may also fulfill university requirements and are not included in total major hours

Professional School Requirement

ACU awards the bachelor's degree to certain qualified students who have satisfactorily completed three years of prescribed work at ACU (a minimum of 104 hours) plus one year at a recognized professional school. Students in the cooperative degree program are advised by an advisor in the Department of Agriculture and Environmental Studies.

TOTAL MAJOR HOURS **54**

OTHER GRADUATION REQUIREMENTS

Minimum GPA in major..... 2.00

Minimum GPA for graduation..... 2.00

Minimum advanced hours from ACU 23

Minimum total hours from ACU 107

Minimum total hours 128

*Courses numbered 0** do not count in minimum hours required for degree.*

Minor in Agricultural Sciences

MINOR: AGRICULTURAL SCIENCES (AGRS)

AGRB 261 Principles of Agricultural and Applied Economics3

ANSC 111 General Animal Science3

CHEM 111/113 Introduction to Chemistry Lecture/Lab4

ENVR 112 Plant Science3

ENVR 233 Soil Science3

Choose 2 advanced courses from: AENV, AGRB,
ANSC, ENVR6

TOTAL **22**

Minor in Environmental Science

MINOR: ENVIRONMENTAL SCIENCE (ENVR)

AENV 130 Environmental and Technological Science3

CHEM 111/113 Introduction to Chemistry Lecture/Lab4

ENVR 112 Plant Science3

ENVR 233 Soil Science3

Choose 3 from: ENVR 300-4999

TOTAL **22**

Course Descriptions

Please see the *Course Descriptions* section of this catalog (page 165).

Courses offered by the Department of Agricultural and Environmental Sciences include those with the following designations: AENV, AGRB, ANSC and ENVR.

Biology

UNIVERSITY REQUIREMENTS

Please see the University Requirements section of this catalog (page 37).

MAJOR REQUIREMENTS

Biology

BIOL 112 General Biology I	(3) ¹
BIOL 114 General Biology I Lab	1
BIOL 113/115 General Biology II Lecture/Lab	4
BIOL 362 Ecology	3
BIOL 497 Seminar in Biology (capstone and writing-intensive course)	3
TOTAL	11

¹Hours (in parentheses) may also fulfill university requirements and are not included in total major hours

CONCENTRATIONS (choose one)

CELLULAR/MOLECULAR BIOLOGY Track (BICM)

BIOL 221/223 Animal Biology Lecture/Lab or	
BIOL 222/224 Plant Biology Lecture/Lab	4
BIOL 312 Cell Biology	3
BIOL 472 Biochemistry I	3
BIOL 475 Molecular Genetics	3
BIOL 476 Biotechnology Laboratory	2
BIOA or BIOL Selections: 13 hours of which 9 are 300-499	13
TOTAL	28

GENERAL BIOLOGY Track (BIOG)

BIOL 221/223 Animal Biology Lecture/Lab or	
BIOL 222/224 Plant Biology Lecture/Lab	4
BIOL 312 Cell Biology or BIOL 351 Genetics	3
21 hours BIOA or BIOL of which 17 hours are 300-499	21
TOTAL	28

HEALTH PROFESSIONS Track (BIOH)

BIOL 221/223 Animal Biology Lecture/Lab or	
BIOL 222/224 Plant Biology Lecture/Lab	4
BIOL 312 Cell Biology	3
BIOL 355/357 Microbiology	4
BIOL 491/493 Human Anatomy	4
BIOL 492/495 Physiology	4
BIOL Selections: 9 hours of which 5 hours are 300-499	9
TOTAL	28

ORGANISMAL BIOLOGY Track (BIOO)

BIOL 221/223 Animal Biology Lecture/Lab	4
BIOL 222/224 Plant Biology Lecture/Lab	4
BIOL 312 Cell Biology	3
BIOL 351 Genetics	3
BIOL 364 Ecology Laboratory	1
Choose 2 courses from:	7
BIOL 355/357 Microbiology or BIOL 370 Field Biology, or BIOL	
380 General Mammalogy, or BIOL 403 Marine Biology or BIOL	
425 Behavioral Biology: Theory & Methods or BIOL 481 Plant	
Systematics or BIOL 483 Biostatistics or BIOL 492/495 Physiology	
BIOA or BIOL Selections: 300-499	6
TOTAL	28

PRE-VETERINARY MEDICINE Track (BIOV)

BIOL 221/223 Animal Biology Lecture/Lab	4
BIOL 312 Cell Biology	3
BIOL 351 Genetics	3
BIOL 355/357 Microbiology Lecture/Lab	4
BIOL 472 Biochemistry I	3
BIOL 492/495 Physiology Lecture/Lab	4
TOTAL	21

WILDLIFE BIOLOGY Track (BIOW)

BIOL 221/223 Animal Biology Lecture/Lab	4
BIOL 222/224 Plant Biology Lecture/Lab	4
BIOA 345 Wildlife Ecology	4 ²
BIOL 345 Range and Wildland Plants	3
BIOL 351 Genetics	3
BIOA 362 Environmental Applications for GIS	4 ²

BIOL 370 Field Biology	4
BIOL 380 General Mammalogy	4
BIOL 481 Plant Systematics	4
BIOL 483 Biostatistics	3
TOTAL	3538

BIOLOGY/BUSINESS Track (BIOB)

BIOL 221/223 Animal Biology Lecture/Lab or	
BIOL 222/224 Plant Biology Lecture/Lab	4
BIOL 312 Cell Biology	3
BIOA or BIOL Selections: 21 hours of which 17 are 300-499	21
TOTAL	28

² Course offered at Au Sable Institute. Travel to site required.**SUPPLEMENT FOR MAJOR (BICM, BIOG, BIOH, BIOO)****Chemistry**

CHEM 133 General Chemistry I	(3) ¹
CHEM 131 General Chemistry I Lab	1
CHEM 132/134 General Chemistry II Lecture/Lab	4
CHEM 221/223 Organic Chemistry I Lecture/Lab	4
CHEM 322/324 Organic Chemistry II Lecture/Lab	4

Physics

PHYS 110/111 General Physics I Lecture/Lab	4
PHYS 112/113 General Physics II Lecture/Lab	4

Mathematics

MATH 124 Precalculus II or MATH 131 Calculus for	
Application or MATH 185 Calculus I	(3) ¹

Literature (not including ENGL 351)

TOTAL¹Hours (in parentheses) may also fulfill university requirements and are not included in total major hours**SUPPLEMENT FOR MAJOR (BIOB)****Chemistry**

CHEM 133 General Chemistry I	(3) ¹
CHEM 131 General Chemistry I Lab	1
CHEM 132/134 General Chemistry II Lecture/Lab	4

College of Business Administration

ACCT 210 Financial Accounting	3
FIN 310 Financial Management	3
MGMT 330 Management and Organizational Behavior	3
MKTG 320 Principles of Marketing or	
MKTG 343 Personal Selling	3

Mathematics

MATH 124 Precalculus II or MATH 131 Calculus for	
Application	(3) ¹

Literature (Not including ENGL 351)

TOTAL**SUPPLEMENT FOR MAJOR (BIOV)****Animal Science**

ANSC 336 Animal Nutrition	3
---------------------------------	---

Chemistry

CHEM 133 General Chemistry I	(3) ¹
CHEM 131 General Chemistry I Lab	1
CHEM 132/134 General Chemistry II Lecture/Lab	4
CHEM 221/223 Organic Chemistry I Lecture/Lab	4
CHEM 322/324 Organic Chemistry II Lecture/Lab	4

Physics

PHYS 110/111 General Physics I Lecture/Lab	4
PHYS 112/113 General Physics II Lecture/Lab	4

Mathematics

MATH 131 Calculus for Application or MATH 185 Calculus I. (3) ¹	
MATH 377 Statistical Methods I	3

Psychology

PSYC 120 Introduction to Psychology	(3) ¹
---	------------------

Writing

ENGL 326 Business and Professional Writing	3
--	---

TOTAL¹Hours (in parentheses) may also fulfill university requirements and are not included in total major hours**SUPPLEMENT FOR MAJOR (BIOW)****Environmental Science**

ENVR 345 Rangeland Plants	3
ENVR 410 Environmental Law	3
ENVR 420 Environmental Thought	3
ENVR 458 Wildlife Management Techniques	3

Chemistry

CHEM 133 General Chemistry I	(3) ¹
CHEM 131 General Chemistry I Lab	1
CHEM 114 Introductory Organic and Biological Chemistry	3

Physics

PHYS 110/111 General Physics I Lecture/Lab	4
--	---

Mathematics

MATH 124 Precalculus II or MATH 131 Calculus for Applications	
or MATH 185 Calculus I	(3) ¹

Social Sciences

Choose 2 (different disciplines) from

ECON 260 Principles of Macroeconomics or ECON 261 Principles	
of Microeconomics or GLST 120 Introduction to Global Issues or	
HIST 117 Civilization I or HIST 118 Civilization II or HIST 131	
World History or HIST 221 American History I or HIST 222	
American History II or HIST 250 Introduction to American Ethnic	
and Women's Studies or POLS 221 Government and Business or	
POLS 226 States and Federal System or POLS 227 Introduction to	
International Relations or PYSC 120 Introduction to Psychology	
or SOCI 111 Introduction to Sociology	

Writing

ENGL 327 Scientific and Technical Writing	3
---	---

TOTAL¹Hours (in parentheses) may also fulfill university requirements and are not included in total major hours**ELECTIVES**

Minimum (BICM, BIOG, BIOH, BIOO)	9
Minimum (BIOB)	13
Minimum (BIOV)	10
Minimum (BIOW)	3

TOTAL MAJOR HOURS**OTHER GRADUATION REQUIREMENTS**

Minimum GPA in major	2.00
Minimum GPA for graduation	2.00
Minimum advanced hours	33
Minimum total hours	128

Courses numbered 0** do not count in minimum hours required for degree.

HIGH SCHOOL TEACHER CERTIFICATION - LIFE SCIENCE (BS)**BS: HIGH SCHOOL TEACHER CERTIFICATION - LIFE SCIENCE DEGREE PLAN (BIOL)****UNIVERSITY REQUIREMENTS**

Please see the University Requirements section of this catalog (page 37).

MAJOR REQUIREMENTS**Biology**

BIOL 112 General Biology I	(3) ¹
BIOL 114 General Biology I Lab	1
BIOL 113/115 General Biology II Lecture/Lab	4
BIOL 221/223 Animal Biology Lecture/Lab or	
BIOL 222/224 Plant Biology Lecture/Lab	4
BIOL 312 Cell Biology Lecture	3
BIOL 353/354 General Microbiology Lecture/Lab	4
BIOL 362/364 Ecology Lecture/Lab	4
BIOL 401 Secondary Science Teaching Methods	3
BIOL 492/495 Physiology Lecture/Lab	4

BIOL 497 Seminar in Biology (capstone and writing-intensive course)	3
Additional Advanced Selection from BIOA or BIOL.....	3
TOTAL	33
¹ Hours (in parentheses) may also fulfill university requirements and are not included in total major hours	

SUPPLEMENT FOR MAJOR

BIOLOGY TEACHING LIFE SCIENCES – GRADES 8-12 (BIOT)

CHEM 133 General Chemistry I	(3) ¹
CHEM 131 General Chemistry I Lab.....	1
CHEM 134/132 General Chemistry II Lecture/Lab	4
MATH 124 Precalculus II or 185 Calculus I	(3) ¹
TOTAL	5

BIOLOGY TEACHING COMPOSITE SCIENCES – GRADES 8-12 (BTCS)

CHEM 133 General Chemistry I	(3) ¹
CHEM 131 General Chemistry I Lab.....	1
CHEM 134/132 General Chemistry II Lecture/Lab	4
CHEM 223/221 Organic Chemistry I Lecture/Lab	4
PHYS 110/111 General Physics I Lecture/Lab or PHYS 120/121 Engineering Physics I Lecture/Lab	4
PHYS 112/113 General Physics II Lecture/Lab or PHYS 122/123 Engineering Physics II Lecture/Lab	4
MATH 124 or MATH 185.....	(3) ¹
TOTAL	17

PROFESSIONAL EDUCATION REQUIREMENTS

EDUC 211 Educational Foundations and Multi-cultural Perspective	(3) ¹
EDUC 221 Educational Psychology	(3) ¹
EDUC 412 Secondary Curriculum and Media (capstone course)...	3
EDUC 432 Secondary Management and Methods (capstone course).....	3
EDUC 476 Effective Strategies for English Language Learners....	3
EDUC 490 Student Teaching (capstone course)	6
READ 322 Reading in Secondary Content Areas	3
SPED 371 Teaching Students with Special Needs (writing-intensive course).....	3
TOTAL	26

¹Hours (in parentheses) may also fulfill university requirements and are not included in total major hours

ELECTIVES

Minimum (BIOT).....	13
Minimum (BTCS).....	1

TOTAL MAJOR HOURS **72**

CRITERIA FOR ADMISSION TO TEACHER EDUCATION

In accordance with Texas state law, students must meet the admission criteria described on page 115.

OTHER GRADUATION REQUIREMENTS

Minimum grade for majors courses	C
Minimum GPA for graduation.....	2.75
Minimum advanced hours	33
Minimum total hours	128

Courses numbered 0** do not count in minimum hours required for degree.