

## Department of Natural Sciences

### Faculty

- Andy Laughlin, Ph.D., Chair
- Iona Baldrige, Ed.D.
- Rod Blackwood, Ph.D.
- Bart Durham, Ph.D.
- Caren Fullerton, Ph.D.
- Donna Harman, M.Ed.
- Kirt Martin, Ph.D.
- Lucy Porter, M.S.

### Degrees

To earn a degree, students must complete the curriculum and meet other requirements for a degree listed in the academic policy section of this catalog.

- [Bachelor of Science in Animal Science](#)
- [Bachelor of Science in Animal Science with a Pre-Veterinary Emphasis](#)
- [Bachelor of Science in Natural Resources Ecology and Conservation](#)
- [Bachelor of Arts in Biology](#)
- [Bachelor of Science in Biology](#)

### Programs

- [Pre-Health Professions](#)
- [Pre-Dental](#)
- [Pre-Medical](#)

### Introduction

The Department of Natural Sciences includes biological, ecological, and agricultural sciences. The scientific study of the diversity of organisms, including microbes, plants, animals, and humans and the interrelationships among these provide abundant opportunities for scientific careers in research, human health, animal health and production, environmental health and management, and science education. The department bases its approach to the study of science on the biblical view that God is the creator and sustainer of the universe. Students taking courses in the department are introduced to major concepts of biology, ecology, and agriculture such that they can discover and interpret the characteristics of nature as part of the creation of God. Students learn that science is not merely a collection of facts to be memorized, but a process by which to understand the world. Students are equipped to be successful with the skills of careful observation, critical thinking, careful investigation, and effective communication. Major emphases include:

### Animal Science and Pre-Veterinary Medicine

The pre-veterinary science degree equips students for a career in veterinary medicine with specialized training in animal physiology and reproduction, as well as research procedures and techniques.

### Health Professions

The department offers information-intensive, research-supplemented, and service-oriented programs to prepare students for medicine, dentistry, pharmacy, physician assistant, veterinary medicine, and the allied health sciences such as physical therapy, occupational therapy, optometry, and chiropractic science. Students majoring in pre-medicine and pre-dentistry will seek the Bachelor of Science in Biology, while students majoring in pre-pharmacy, pre-PA, or any of the allied health sciences will pursue the Bachelor of Arts in Biology.

### Natural Resource Ecology and Conservation

The degree in Natural Resources Ecology and Conservation provides students with a broad background in natural resources management and conservation with specific emphasis in ecology, wildlife and fisheries management, conservation biology, and environmental science. Students completing this program will be prepared for graduate education or for employment with governmental and private agencies that are directly involved in managing our natural resources. Examples of employment

include Texas Parks and Wildlife Department, U.S. Fish and Wildlife Service, and private environmental consulting.

## Science Education

Science content courses are taken by students preparing to teach biological sciences at the primary and secondary levels. Students seeking a degree in science education through the school of education must complete a designated block of science courses and demonstrate competency in science pedagogy.

## Undergraduate Research

Field research projects and research in the biotechnology and microbiology labs prepare graduates of the department to enter graduate research programs. Research projects within the department and the biochemistry research lab provide opportunities for student involvement in research and to gain experience in multiple laboratory techniques and procedures.

## Bachelor of Science in Animal Science

### A. University Core (46 hours)

- BIB1310 Introduction to the Old Testament
- BIB1320 Introduction to the New Testament
- BIB3305 Christian Heritage
- BIB3310 Christian Life
- COM2340 Communication for the Professional
- ENG1301 Composition Studies
- ENG1302 Composition and Literature
- 3 hours from
  - PSY1300 General Psychology
  - SOC1300 General Sociology
- 3 hours from HIS
- 3 hours from ECO, FIN, GOV, or HIS
- ESS1200 Personal Fitness and Wellness
- UNI1170 University Seminar
- MAT1311 College Algebra
- BIO1405 Majors Biology I
- 6 hours from AFA, Arts History, ENG, GOV, HIS, PHI, REL, FOL, or BIL
- UNI2000 University Skills

### B. Major (37 hours)

- ANS1303 Principles of Animal Science
- ANS3403 Advanced Feeds and Nutrition
- ANS3314 Physiology of Farm Animals
- ANS3323 Physiology of Reproduction
- ANS4313 Concepts in Animal Health and Disease
- BIO1406 Majors Biology II
- BIO4318 Biometrics
- NRC2301 Natural Resources and Agriculture
- NRC3323 General Ecology
- NRC4200 Senior Seminar
- NRC4314 Conservation Biology
- 3 hours from
  - AEC3315 Agricultural Policy
  - NRC3322 Natural Resources Policy, Regulation, and Compliance

### C. Supporting Courses (37 hours)

- CHE1307 General Chemistry I
- CHE1107 General Chemistry I Lab
- BIO3300 Genetics
- BIO3305 Advanced Zoology

- NRC1300 Introduction to Wildlife Management
- 3 hours from MAT
- 3 hours from
  - AEC3304 Farm and Ranch Management
  - AEC3312 Natural Resources Economics
- 18 hours from
  - AGR1304 Principles of Soil Science
  - ANS4330 Animal Science Practicum
  - ANS4352 Special Topics in Animal Science
  - ANS4399 Research and Writings
  - BIO3303 Cell and Molecular Biology
  - BIO3304 Advanced Botany
  - BIO3310 Microbiology
  - BIO3111 Microbiology Lab
  - BIO3320 Analytical Biology
  - BIO3325 Entomology
  - BIO4112 Animal Physiology Lab
  - BIO4303 Evolution
  - CHE2402 Integrated Organic and Biochemistry
  - ENG3308 Technical Writing
  - IST3323 Geographic Information Systems
  - NRC2300 Environmental Systems
  - NRC3325 Aquatic Ecology and Conservation
  - NRC3333 Geographic Information Systems

D. Electives (6 hours)

E. Total (126 hours)

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## Bachelor of Science in Animal Science with Pre-Veterinary Emphasis

A. University Core (47 hours)

- BIB1310 Introduction to the Old Testament
- BIB1320 Introduction to the New Testament
- BIB3305 Christian Heritage
- BIB3310 Christian Life
- COM2340 Communication for the Professional
- ENG1301 Composition Studies
- ENG1302 Composition and Literature
- 3 hours from
  - PSY1300 General Psychology
  - SOC1300 General Sociology
- 3 hours from HIS
- 3 hours from ECO, FIN, GOV, or HIS
- ESS1200 Personal Fitness and Wellness
- UNI1170 University Seminar
- MAT1402 Calculus
- BIO1405 Majors Biology I
- ENG3308 Technical Writing
- 3 hours from AFA, Arts History, ENG, GOV, HIS, PHI, REL, FOL, or BIL
- UNI2000 University Skills

B. Major (38 hours)

- ANS1303 Principles of Animal Science
- ANS3314 Physiology of Farm Animals

- ANS3323 Physiology of Reproduction
- ANS3403 Advanced Feeds and Nutrition
- ANS4352 Special Topics
- BIO3310 Microbiology
- BIO3111 Microbiology Lab
- BIO3300 Genetics
- BIO3303 Cell and Molecular Biology
- BIO3305 Advanced Zoology
- BIO3320 Analytical Biotechnology
- BIO3406 Vertebrate Anatomy
- NRC4200 Senior Seminar

C. Supporting Courses (33 hours)

- CHE1307 General Chemistry I
- CHE1107 General Chemistry I Lab
- CHE1308 General Chemistry II
- CHE1108 General Chemistry II Lab
- CHE3301 Organic Chemistry I
- CHE3101 Organic Chemistry I Lab
- CHE3302 Organic Chemistry II
- CHE3102 Organic Chemistry II Lab
- CHE4311 Biochemistry I
- CHE4312 Biochemistry II
- MAT3303 Probability and Statistics
- PHY1303 Physics I
- PHY1103 Physics I Lab
- PHY1304 Physics II
- PHY1104 Physics II Lab

D. Electives (8 hours)

E. Total (126 hours)

Print This Degree

## **Bachelor of Science in Natural Resources Ecology and Conservation**

A. University Core (46 hours)

- BIB1310 Introduction to the Old Testament
- BIB1320 Introduction to the New Testament
- BIB3305 Christian Heritage
- BIB3310 Christian Life
- COM2340 Communication for the Professional
- ENG1301 Composition Studies
- ENG1302 Composition and Literature
- 3 hours from
  - PSY1300 General Psychology
  - SOC1300 General Sociology
- 3 hours from HIS
- 3 hours from ECO, FIN, GOV, or HIS
- ESS1200 Personal Fitness and Wellness
- UNI1170 University Seminar
- MAT1311 College Algebra
- BIO1405 Majors Biology I
- 6 hours from AFA, Arts History, ENG, GOV, HIS, PHI, REL, FOL, or BIL
- UNI2000 University Skills

B. Major (37 hours)

- AGR1304 Principles of Soil Science
- BIO1406 Majors Biology II
- BIO3304 Advanced Botany
- BIO4318 Biometrics
- NRC1300 Introduction to Wildlife Management
- NRC2300 Environmental Systems
- NRC3322 Natural Resources Policy, Regulation, and Compliance
- NRC3323 General Ecology
- NRC3325 Aquatic Ecology and Conservation
- NRC4200 Senior Seminar
- NRC4314 Conservation Biology
- NRC4405 Wildlife and Fisheries Science

B. Supporting Courses (37 hours)

- AEC3312 Natural Resources Economics
- BIO3300 Genetics
- BIO3305 Advanced Zoology
- CHE1307 General Chemistry I
- CHE1107 General Chemistry I Lab
- NRC3333 Geographic Information Systems or IST 3323 Geographic Information Systems
- 3 hours from MAT
- 12 hours from ANS, BIO, CHE, CRJ, ENG, or NRC
- 6 upper level hours from ANS, BIO, CHE, CRJ, ENG, or NRC

D. Electives (6 hours)

E. Total (126 hours)

Print This Degree

## Bachelor of Arts in Biology

A. University Core (45 hours)

- BIB1310 Introduction to the Old Testament
- BIB1320 Introduction to the New Testament
- BIB3305 Christian Heritage
- BIB3310 Christian Life
- COM2340 Communication for the Professional
- ENG1301 Composition Studies
- ENG1302 Composition and Literature
- PSY1300 General Psychology
- HIS2301 History of the United States I
- HIS2302 History of the United States II
- 3 hours from ECO, FIN, GOV, or HIS
- ESS1200 Personal Fitness and Wellness
- UNI1170 University Seminar
- MAT1311 College Algebra
- CHE1307 General Chemistry I
- 3 hours from SOC or PSY
- UNI2000 University Skills

B. Major (32 hours)

- BIO 1405 Majors Biology I
- BIO 1406 Majors Biology II
- BIO 2401 Human Anatomy and Physiology I
- BIO 2402 Human Anatomy and Physiology II
- BIO 4102 Biological Literature and Seminar

- 15 hours upper level BIO

## C. Supporting Courses (46 hours)

- 3 hours from MAT
- CHE 1107 General Chemistry I Lab
- CHE 1308 General Chemistry II
- CHE 1108 General Chemistry II Lab
- 12 hours from CHE or PHY (4 upper level)
- 9 hours upper level from PSY, SOC, or ECO
- GOV 2301 National Government
- GOV 2302 Texas State and Local Government
- 8 hours from FOL
- 3 hours upper level ENG

## D. Electives (3 hours)

## E. Total (126 hours)

Print This Degree

**Bachelor of Science in Biology**

## A. University Core (45 hours)

- BIB1310 Introduction to the Old Testament
- BIB1320 Introduction to the New Testament
- BIB3305 Christian Heritage
- BIB3310 Christian Life
- COM2340 Communication for the Professional
- ENG1301 Composition Studies
- ENG1302 Composition and Literature
- 3 hours from
  - PSY1300 General Psychology
  - SOC1300 General Sociology
- 3 hours from HIS
- 3 hours from ECO, FIN, GOV, or HIS
- ESS1200 Personal Fitness and Wellness
- UNI1170 University Seminar
- MAT1311 College Algebra
- CHE1307 General Chemistry I
- 6 hours from AFA, Arts History, ENG, GOV, HIS, PHI, REL, FOL, or BIB
- UNI2000 University Skills

## B. Major (36 hours)

- BIO1405 Majors Biology I
- BIO1406 Majors Biology II
- BIO3300 Genetics
- BIO3303 Cell and Molecular Biology
- BIO3304 Advanced Botany
- BIO3305 Advanced Zoology
- BIO4102 Biological Literature and Seminar
- NRC3323 General Ecology
- 12 hours upper level BIO

## C. Supporting Courses (39 hours)

- CHE1107 General Chemistry I Lab
- CHE1308 General Chemistry II

- CHE1108 General Chemistry II Lab
- CHE3301 Organic Chemistry I
- CHE3101 Organic Chemistry I Lab
- CHE3302 Organic Chemistry II
- CHE3102 Organic Chemistry II Lab
- CHE4311 Biochemistry I
- CHE4312 Biochemistry II
- PHY1303 General Physics
- PHY1103 General Physics I Lab
- PHY1304 General Physics II
- PHY1104 General Physics II Lab
- FOL1401 Beginning Spanish I
- FOL1402 Beginning Spanish I
- 3 hours from
  - MAT1402 Calculus
  - MAT3303 Probability and Statistics

D. Electives (6 hours)

E. Total (126 hours)

Print This Degree

### Pre-Dental

Enroll in Bachelor of Science in Biology curriculum.

### Pre-Health Professions

Enroll in Bachelor of Arts in Biology curriculum.

### Pre-Medical

Enroll in Bachelor of Science in Biology or Bachelor of Science in Biochemistry curriculum.

### Minor in Agriculture Business

(18 hours)

- AEC3312 Natural Resources Economics
- 3 hours from
  - ECO2301 Macroeconomics
  - ECO2302 Microeconomics
- 6 hours from
  - AGR1304 Principles of Soil Science
  - ANS1303 Principles of Animal Science
  - NRC1300 Introduction to Wildlife Management
- 6 hours from
  - AEC3315 Agricultural Policy
  - AEC3304 Farm and Ranch Management
  - AEC4314 Agricultural Finance and Credit
  - FIN4311 International Trade and Finance

Print This Minor

### Minor in Biology

(19-20 hours)

- BIO 1405 Majors Biology I

- BIO 1406 Majors Biology II
- 4 upper level courses from BIO or NRC

Print This Minor