

# ZOOLOGY - BS

The Zoology degree program is designed to expose students to all aspects of the study of animals. Following foundation courses on the principles of vertebrate and invertebrate zoology, students may select from a broad range of classes in animal biology, ranging from cellular and developmental biology, physiology, and anatomy to ecology and evolution. Graduates enter into advanced studies in zoology, specialized zoological fields in agriculture and renewable resources, or such professional fields as medicine, veterinary medicine, dentistry and other health-related areas.

## Program Requirements

### First Year

Fall		Semester Credit Hours
BIOL 111	Introductory Biology I <sup>1,2</sup>	4
CHEM 119	Fundamentals of Chemistry I <sup>2</sup>	4
Select one of the following: <sup>2,3</sup>		4
MATH 147	Calculus I for Biological Sciences	
MATH 151	Engineering Mathematics I	
MATH 171	Calculus I	
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> )		3

**Semester Credit Hours** 15

### Spring

BIOL 112	Introductory Biology II <sup>1,2</sup>	4
CHEM 120	Fundamentals of Chemistry II <sup>2</sup>	4
Select one of the following: <sup>2</sup>		3-4
MATH 148	Calculus II for Biological Sciences	
MATH 152	Engineering Mathematics II	
MATH 172	Calculus II	
STAT 201	Elementary Statistical Inference	
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> )		3

**Semester Credit Hours** 14

### Second Year

Fall		Semester Credit Hours
BIOL 213	Molecular Cell Biology <sup>2</sup>	3
CHEM 227 & CHEM 237	Organic Chemistry I and Organic Chemistry Laboratory <sup>2</sup>	4
PHYS 201	College Physics	4
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>4,5</sup>		3

**Semester Credit Hours** 14

### Spring

BIOL 214	Genes, Ecology and Evolution <sup>2</sup>	3
CHEM 228 & CHEM 238	Organic Chemistry II and Organic Chemistry Laboratory <sup>2</sup>	4
PHYS 202	College Physics	4

American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>4,5</sup>	3
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**Semester Credit Hours** 14

**Total Semester Credit Hours** 57

- <sup>1</sup> Grade of C or better required.
- <sup>2</sup> Must be completed by start of 5th full semester.
- <sup>3</sup> Students may not use MATH 142 to satisfy this requirement.
- <sup>4</sup> Students seeking teacher certification must take HIST 105 and HIST 106. Other students may choose HIST 105 and HIST 106 or any 6 hours of American history courses (3 hours may be in Texas history).
- <sup>5</sup> Students successfully completing the required four semesters of upper-level ROTC courses may substitute these courses for 3 hours of American history and 3 hours of government/political science.

The following are CBK courses and must be completed prior to the start of 5th full semester: BIOL 111, BIOL 112, BIOL 213, BIOL 214, CHEM 119, CHEM 120, CHEM 227 & CHEM 237, CHEM 228 & CHEM 238, MATH 147, MATH 148 or STAT 201.

### Third Year

Fall		Semester Credit Hours
BICH 410 or BICH 440	Comprehensive Biochemistry I or Biochemistry I	3
BIOL 318	Chordate Anatomy	4
STAT 312	Statistics for Biology	3
Select one of the following:		1
BICH 412	Biochemistry Laboratory I	
BICH 414	Biochemical Techniques I	
BICH 432/ GENE 432	Laboratory in Molecular Genetics	
General elective <sup>6</sup>		6

**Semester Credit Hours** 17

### Spring

BICH 411 or BICH 441	Comprehensive Biochemistry II or Biochemistry II	3
BIOL 388	Principles of Animal Physiology	4
GENE 302 & GENE 314	Principles of Genetics and Principles of Genetics Laboratory	4
Social and behavioral science ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences</a> )		3

**Semester Credit Hours** 14

### Fourth Year

Fall		Semester Credit Hours
BIOL 466	Principles of Evolution	3
POLS 206	American National Government <sup>5</sup>	3
Creative arts ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a> )		3
Language, philosophy and culture ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture</a> )		3

Directed elective <sup>7,8</sup>	4
<b>Semester Credit Hours</b>	<b>16</b>
<b>Spring</b>	
BIOL 335 Invertebrate Zoology	4
POLS 207 State and Local Government <sup>5</sup>	3
Directed elective <sup>7,8</sup>	4
General elective <sup>6</sup>	5
<b>Semester Credit Hours</b>	<b>16</b>
<b>Total Semester Credit Hours</b>	<b>63</b>

BIOL 434/ NRSC 434	Regulatory and Behavioral Neuroscience	3
BIOL 435	Laboratory for Regulatory and Behavioral Neuroscience	1
BIOL 454	Immunology	3
ECCB 422	Behavioral Ecology	3
GENE 431/ BICH 431	Molecular Genetics	3
<b>Preveterinary Medicine</b>		
ANSC 303	Principles of Animal Nutrition	3
ANSC 320	Animal Nutrition and Feeding	3
BIOL 351	Fundamentals of Microbiology	4

<sup>6</sup> Select from any 100-499 course not used elsewhere. (Except AGLS 101; ASCC 101, ASCC 102, ASCC 289; BIMS 101; BIOL 101, BIOL 107, BIOL 113, BIOL 206; CHEM 106, CHEM 116; MATH 102, MATH 142.) Only one KINE 199 may be used as a general elective.

<sup>7</sup> Select from directed elective list below.

<sup>8</sup> Two courses in the major must be designated as writing intensive.

## Total Program Hours 120

### Directed Electives

Code	Title	Semester Credit Hours
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One course may be chosen from the following:

BIOL 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/biol/>)

OCNG 320	Biological Oceanography	3
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Select remaining courses from the following:

#### Developmental Biology

BIOL 413	Cell Biology	3
BIOL 414	Developmental Biology	3
BIOL 423	Cell Biology Laboratory	2
BIOL 430	Biological Imaging	4
BIOL 434/ NRSC 434	Regulatory and Behavioral Neuroscience	3
BIOL 435	Laboratory for Regulatory and Behavioral Neuroscience	1
GENE 431/ BICH 431	Molecular Genetics	3

#### Ecology/Evolution

BIOL 357	Ecology	3
BIOL 440	Marine Biology	4
BIOL 467	Integrative Animal Behavior	3
ECCB 311	Ichthyology	3
ECCB 315	Herpetology	3
ECCB 401	General Mammalogy	3
ECCB 402	General Ornithology	3
ECCB 422	Behavioral Ecology	3
GENE 412	Population, Quantitative and Ecological Genetics	3

#### Physiology/Neuroscience

BIOL 405	Comparative Endocrinology	3
BIOL 413	Cell Biology	3
BIOL 423	Cell Biology Laboratory	2