

# Zoology

A major in Zoology is an appropriate beginning for those planning careers in teaching, research, or other employment in animal biology, environmental biology, fisheries biology, veterinary medicine, or wildlife biology. Students majoring in Zoology are required to develop an individualized curriculum in consultation with a faculty advisor within the program.

A student majoring in Zoology may work toward either a Bachelor of Arts (B.A.) or Bachelor of Science (B.S.) degree. The B.A. with a major in Zoology provides the opportunity for a broad, liberal arts education by allowing students to take 20-25 hours of courses in areas of interest outside the major. The B.A. is appropriate for students who desire a strong background in zoology, but have interests in biology-associated careers in business, law, journalism, zoo keeping, or other fields.

Students seeking a B.S. with a major in Zoology must choose one of five specializations: animal biology, environmental biology, fisheries biology, pre-veterinary science, or wildlife biology. The B.S. requires more courses in physical sciences and mathematics than does the B.A., and is appropriate for students planning careers as practicing zoologists in one of the emphasized fields, particularly those who wish to pursue graduate studies. Each B.S. student will complete an independent-study project under the supervision of their faculty mentor, submit a written summary of the project, and present their results as part of ZOOL 482 (Senior Seminar), to be taken during the final year of study.

To prepare for a major in Zoology at SIU Carbondale, students should have a solid high school background in biology, mathematics, and physical sciences, as well as practiced writing skills and a sustaining curiosity about animal life. Students transferring to SIU after two years at a community college should have completed introductory biology, introductory chemistry, and pre-calculus sequences.

Zoology majors must take ZOOL 215 (Sophomore Seminar) immediately after completing BIOL 211 and BIOL 213, or (for transfer students) during the first semester of enrollment at SIU. ZOOL 215 provides students with an orientation to the program and requirements of the major, and assigns them faculty advisors who will act as mentors until graduation.

B.A. and B.S. degrees require a minimum of 41 semester hours of biology or zoology courses. No more than 11 semester hours of biology or zoology courses that are used to satisfy degree requirements for another major may be used to meet the Zoology requirements.

SIU has an affiliate agreement with the University of Southern Mississippi's Gulf Coast Research Laboratory (GCRL). Qualified students can enroll in credit-bearing courses at GCRL with credits articulating as free electives in Zoology at SIU.

## Bachelor of Arts (B.A.) in Zoology

### B.A. Zoology Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements <sup>1</sup>	39
Requirements for Major in Zoology	60-62

BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, and BIOL 307; CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211 and CHEM 212; or GEOL 220 and GEOL 223; or GEOL 221 and GEOL 224; or PHYS 203A, PHYS 253A; ZOOL 215, ZOOL 220, ZOOL 482; 20 hours of 300-and 400-level Biology or Zoology courses. One of the following quantitative skills courses: QUAN 402 or MATH

Degree Requirements	Credit Hours
282 or ZOOLOGY 360; CS 201 or CS 202; MATH 141 or MATH 150 <sup>2</sup>	
Additional School of Biological Sciences Requirements	9-11
Mathematics: MATH 108 and MATH 109, or MATH 111 or MATH 141 or MATH 150 Supportive Skills: at least six credit hours chosen from QUAN 402 or MATH 282 or PLB 360 or ZOOLOGY 360; CS 105 or CS 200B, CS 201 or CS 202; ENGL 290 or ENGL 291; any two-semester sequence of a foreign language (Chinese, French, Latin, German, Greek, Japanese, Spanish) or American sign language. <sup>3</sup>	
Electives	8-12
Total	120

<sup>1</sup> A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

<sup>2</sup> A grade of C- or better in ZOOLOGY 220 is required for completion of the Zoology B.A. BIOL 304, BIOL 305, and BIOL 307 are required courses and may not be used as electives. A maximum of three credit hours of ZOOLOGY 491, ZOOLOGY 492, and ZOOLOGY 493 together may be used as Zoology electives. Courses used to satisfy College of Science requirements may not be used to satisfy the quantitative skills requirement of the major. Only one of MATH 282, QUAN 402, and ZOOLOGY 360 may be counted toward the supportive skills or major requirements.

<sup>3</sup> The foreign language requirement can also be met by one of the following: (a) earning eight hours of 100-level credit in one language by proficiency examination; (b) completing three years of one language in high school with no grade lower than C.

## Bachelor of Science (B.S.) in Zoology

### Animal Biology Specialization

The B.S. in Zoology with a specialization in Animal Biology is designed for students who wish to obtain a broad background in zoology, but especially those contemplating graduate studies of animal behavior, biodiversity, evolution, natural history, or systematics.

### B.S. Zoology - Animal Biology Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements <sup>1</sup>	39
School of Biological Sciences Requirements	7-9
Biological Sciences: completed with the Zoology major	

Degree Requirements	Credit Hours
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major.	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOO 360; ENGL 290 or ENGL 291 or JRNL 310	
Requirements for Major in Zoology	64-66
BIOL 211, BIOL 212, BIOL 213, BIOL 304 or BIOL 409; BIOL 305, BIOL 306, BIOL 307 <sup>2</sup>	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, and CHEM 212	
CHEM 340, CHEM 341, CHEM 350, and CHEM 351; or GEOL 220, GEOL 221, GEOL 223, and GEOL 224; or PHYS 203A, PHYS 203B, PHYS 253A, and PHYS 253B	
CS 200B or CS 201 or CS 202	
MATH 139 or MATH 141 or MATH 150	
ZOO 215, ZOO 220, and ZOO 482 <sup>3</sup>	
At least 15 hours from the following: GEOG 401, GEOG 404; ZOO 320, ZOO 385, ZOO 405, ZOO 407, ZOO 408, ZOO 410, ZOO 413, ZOO 414, ZOO 415, ZOO 433, ZOO 435, ZOO 438, ZOO 461, ZOO 465, ZOO 467, ZOO 471, ZOO 478, ZOO 490, ZOO 491, ZOO 492, ZOO 493. <sup>4</sup>	
Electives: ZOO 491, ZOO 492, ZOO 493, ZOO 496, ZOO 497	4-10
Total	120

<sup>1</sup> A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

<sup>2</sup> A minimum grade of C- is required in these courses for completion of the Animal Biology specialization.

<sup>3</sup> A minimum grade of C- is required in these courses for completion of the Animal Biology specialization.

<sup>4</sup> A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

## Environmental Biology Specialization

The B.S. in Zoology with a specialization in Environmental Biology is designed for students interested in biological approaches to the study of environmental quality. Students in this program should also consider the Environmental Studies minor.

## B.S. Zoology - Environmental Biology Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements <sup>1</sup>	39
School of Biological Sciences Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOO 360; ENGL 290 or ENGL 291 or JRNL 310	
Requirements for Major in Zoology	70-71
BIOL 211, BIOL 212, BIOL 213, BIOL 305, BIOL 307, BIOL 409 <sup>2</sup>	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341	
MATH 139 or MATH 141 or MATH 150	
ZOO 215, ZOO 220, ZOO 410, ZOO 411, ZOO 432, ZOO 433, and ZOO 482 <sup>3</sup>	
At least 12 hours from the following Zoology electives: BIOL 304; ZOO 415, ZOO 435, ZOO 438, ZOO 445, ZOO 490, ZOO 491, ZOO 492, ZOO 493 <sup>4</sup>	
At least 6 hours from the following environmental science electives: CHEM 350 and CHEM 351; CSEM 240; FOR 429; GEOG 310I, GEOG 320, GEOG 330, GEOG 401, GEOG 404, GEOG 422, GEOG 424, GEOG 434, GEOG 439; GEOL 220 and GEOL 223, GEOL 221 and GEOL 224, GEOL 222 and GEOL 223; MICR 301; PHSL 310; PLB 438, PLB 440, PLB 452	
Electives	1-4
Total	120

<sup>1</sup> A total of 12 hours of biological science, mathematics, and physical science coursework is accounted for in the University Core Curriculum

<sup>2</sup> A minimum grade of C- is required in BIOL 211, BIOL 212, BIOL 213, BIOL 305, and BIOL 307 for completion of the Environmental Biology specialization.

<sup>3</sup> A minimum grade of C- is required in ZOO 220 for completion of the Environmental Biology specialization.

<sup>4</sup> A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

## Fisheries Biology Specialization

The B.S. in Zoology with a specialization in Fisheries Biology is designed for students whose primary interest is in the ecology and management of fishes and aquatic ecosystems. This emphasis is appropriate for those with career goals involving fisheries management, aquaculture, aquatic ecosystem management, or graduate studies in applied fish biology.

### B.S. Zoology - Fisheries Biology Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements <sup>1</sup>	39
School of Biological Sciences Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOO 360; ENGL 290 or ENGL 291, or JRNL 310	
Requirements for Major in Zoology	68-70
BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, BIOL 307, and BIOL 409 <sup>2</sup>	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, and CHEM 212	
CHEM 340, CHEM 341, CHEM 350, and CHEM 351; or PHYS 203A, PHYS 203B, PHYS 253A, and PHYS 253B	
MATH 141 or MATH 150	
ZOO 215, ZOO 220, ZOO 415, ZOO 465, ZOO 466, ZOO 477, and ZOO 482 <sup>3</sup>	
At least 9 hours from the following: GOEG 401, GOEG 404; ZOO 320, ZOO 385, ZOO 410, ZOO 414, ZOO 433, ZOO 438, ZOO 490, ZOO 491, ZOO 492, ZOO 493 <sup>4</sup>	
Electives	2-6

Degree Requirements	Credit Hours
Total	120

<sup>1</sup> A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

<sup>2</sup> A minimum grade of C- is required in BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, and BIOL 307 for completion of the Fisheries Biology and Aquatic Conservation Specialization.

<sup>3</sup> A minimum grade of C- is required in ZOO 220 for completion of the Fisheries Biology and Aquatic Conservation Specialization. Transfer students should take required fisheries courses immediately and concurrently because they are taught only in the fall, and ZOO 465 and ZOO 466 are taught in alternate years.

<sup>4</sup> A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

### Pre-Veterinary Science Specialization

The Pre-Veterinary Science specialization is designed for Zoology majors planning to enter veterinary school. Students in this program must register with the College of Science Pre-Health Professions Advisement Office.

### B.S. Zoology - Pre-Veterinary Science Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements <sup>1</sup>	39
School of Biological Sciences Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major	
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOO 360; ENGL 290 or ENGL 291 or JRNL 310	
Requirements for Major in Zoology	65-67
BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, BIOL 306 and BIOL 409 <sup>2</sup>	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212, CHEM 340, CHEM 341, CHEM 350 and CHEM 351	
CS 200B or CS 201 or MATH 139 or MATH 141	

Degree Requirements	Credit Hours
PHYS 203A, PHYS 203B, PHYS 253A, and PHYS 253B	
ZOOL 215, ZOOL 220, and ZOOL 482 <sup>3</sup>	
At least nine hours of zoology electives from the following: ZOOL 320, ZOOL 407, ZOOL 413, ZOOL 432, ZOOL 433, ZOOL 438, ZOOL 461, ZOOL 467, ZOOL 471, ZOOL 478, ZOOL 491, ZOOL 492, ZOOL 493 <sup>4</sup>	
At least six hours of pre-vet electives from the following: ANS 337; BIOL 307; MICR 301, MICR 302, MICR 403, MICR 460; PHSL 310, PHSL 410A, PHSL 410B, PHSL 430	
Electives	5-9
Total	120

<sup>1</sup> A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

<sup>2</sup> A minimum grade of C- is required in BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305, and BIOL 306 for completion of the Pre-Veterinary Science specialization.

<sup>3</sup> A minimum grade of C- is required in ZOOL 220, for completion of the Pre-Veterinary Science specialization.

<sup>4</sup> A maximum of three credit hours of ZOOL 491, ZOOL 492, and ZOOL 493 together may be used as Zoology electives.

## Wildlife Biology Specialization

The B.S. in Zoology with a specialization in Wildlife Biology is designed for students whose primary interests are in wildlife ecology, management, and conservation. Course requirements in this track include those specified by The Wildlife Society's certification program.

## B.S. Zoology - Wildlife Biology Specialization Degree Requirements

Degree Requirements	Credit Hours
University Core Curriculum Requirements <sup>1</sup>	39
School of Biological Sciences Requirements	7-9
Biological Sciences: completed with the Zoology major	
Mathematics: MATH 108 and MATH 109, or MATH 111	
Physical Sciences: completed with the Zoology major	

Degree Requirements	Credit Hours
Supportive Skills: QUAN 402 or MATH 282 or PLB 360 or ZOOL 360; ENGL 290 or ENGL 291 or ENGL 391, or JRNL 310	
Requirements for Major in Zoology	70-74
BIOL 211, BIOL 212, BIOL 213; BIOL 304 or BIOL 409; BIOL 305, and BIOL 307 <sup>2</sup>	
CHEM 200, CHEM 201, CHEM 202, CHEM 210, CHEM 211, CHEM 212	
MATH 139 or MATH 141 or MATH 150	
CSEM 240; PHYS 203A and PHYS 253A	
ZOOL 215, ZOOL 220, ZOOL 410, ZOOL 468, and ZOOL 482 <sup>3</sup>	
Three hours of policy from the following: CMST 412; FOR 325; ZOOL 464	
Nine hours of wildlife biology and management from the following: ZOOL 408, ZOOL 461, ZOOL 462A and ZOOL 462B, ZOOL 467, ZOOL 469 <sup>4</sup>	
At least nine hours of electives from the following: FOR 201, FOR 451, GEOG 401, GEOG 404, MICRO 406, PLB 300, PLB 320, PLB 440, ZOOL 320, ZOOL 385, ZOOL 403, ZOOL 407, ZOOL 408, ZOOL 414, ZOOL 415, ZOOL 433, ZOOL 461, ZOOL 462A, ZOOL 462B, ZOOL 465, ZOOL 466, ZOOL 467, ZOOL 469, ZOOL 471, ZOOL 478, ZOOL 491, ZOOL 492, ZOOL 493. <sup>5</sup>	
At least three hours of plant systematics from the following: FOR 202, PLB 300, PLB 408, PLB 451 <sup>6</sup>	
Electives	0-4
Total	120

<sup>1</sup> A total of nine hours of biological science, mathematics, and physical science course work is accounted for in the University Core Curriculum.

<sup>2</sup> A minimum grade of C- is required in BIOL 211, BIOL 212, BIOL 213, BIOL 304, BIOL 305 and BIOL 307 for completion of the Wildlife Biology and Conservation specialization.

<sup>3</sup> A minimum grade of C- is required in ZOOL 220 for completion of the Wildlife Biology and Conservation specialization.

<sup>4</sup> No course duplications are allowed between elective categories. A maximum of three credit hours of ZOOL 491, ZOOL 492, and ZOOL 493 together may be used as Zoology electives.



<sup>5</sup> No course duplications are allowed between elective categories. A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

<sup>6</sup> No course duplications are allowed between elective categories. A maximum of three credit hours of ZOO 491, ZOO 492, and ZOO 493 together may be used as Zoology electives.

## **Zoology Minor**

A minor in Zoology consists of BIOL 211, BIOL 212, BIOL 213, ZOO 220, and 12 hours of ZOO courses suitable for majors. One course from BIOL 304, BIOL 305, BIOL 306, BIOL 307, and BIOL 409 may also be counted toward the 12-hour requirement, but no University Core Curriculum courses may be included.

## **Honors Program**

An honors program is available to those juniors and seniors in zoology who maintain a grade point average of 3.25 or better, overall and in the major. To enroll in ZOO 493, the student must complete a program form that requires the project title; a description of the proposed project; and the signatures of the student, the faculty advisor, and the school director. The student must complete six hours of ZOO 493 with a grade of B or better, file with the program a final report on the research, and present the results at a public seminar in order to graduate with honors in zoology. At the time of graduation, an indication of participation in the program is made on the diploma and transcript for students who complete the requirements. Concurrent participation in the University Honors Program is encouraged.

## **Technology Fee**

The College of Agricultural, Life, and Physical Sciences assesses undergraduate majors a technology fee of \$4.58 per credit hour up to 12 credit hours. The fee is charged Fall and Spring semester.

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