

## COURSE REQUIREMENTS FOR BACHELOR OF SCIENCE IN ZOOLOGY<sup>1</sup>

1. THE GENERAL EDUCATION AND TOTAL UNIVERSITY CREDIT REQUIREMENTS MUST BE MET (See Note 1 below). 128 total minimum credits are required for graduation. 36 of these must be upper division credits.

2. COURSES IN BIOLOGICAL SCIENCES: NUMBER OF CREDITS

BIOL 101	Biology I	4
BIOL 102	Biology II	4
BIOL 206	Cell Biology	4
BIOL 209	General Ecology	4
BIOL 303 <sup>2</sup>	Principles of Animal Physiology	4
BIOL 310	Invertebrate Zoology	4
BIOL 314	Comparative Vertebrate Anatomy	4
or		
BIOL 324	Developmental Biology	4
BIOL 315L	Introduction to Biometry Lab	1
BIOL 358	General Genetics	3
BIOL 417	Organic Evolution	3
BIOL 491,492	Seminar	2
Additional upper division coursework in Zoology <sup>3</sup> :		6
(BIOL 314, 324, 419, 420, 423, 426, 427, 428, 429, 431, 435, 438, 440, 441, 443, 449, 456, 459, 470, 486, or 495)		

3. COURSES IN MATHEMATICS

MATH 160	Brief Calculus <sup>4</sup>	4
MATH 350	Statistics <sup>5</sup>	3

4. COURSES IN CHEMISTRY

CHEM 111	General Chemistry I	5
CHEM 112	General Chemistry II	4
CHEM 301,303	Organic Chemistry I, Lab	4
CHEM 302,304	Organic Chemistry II, Lab	4

5. COURSES IN PHYSICS

PHYS 111,113	General Physics I, Lab	4
PHYS 112,114	General Physics II, Lab	4

**Notes:**

1. Students pursuing a Bachelor of Science degree must satisfy goals 1, 2, 3, 4, and 5, two of goals 6, 7, and 8, and three of goals 9, 10, 11, and 12. Goal 10 may be satisfied by either 10A or 10B.
2. The requirement for BIOL 303 may be satisfied by taking both BIOL 301 and 302 (Anatomy and Physiology).
3. BIOL 481 and BIOL 482 can be counted as upper division zoology credits only if approved by the department.
4. Students may take MATH 170 in place of MATH 160. MATH 160 has a prerequisite of MATH 143. MATH 170 has a prerequisite of MATH 147. Prerequisites for both classes may be satisfied by the Mathematics placement exam.
5. The requirement for Statistics may be satisfied by taking MATH 253 or MATH 350 for students enrolled prior to Fall 2007. Starting Fall 2007, students must take MATH 350 (listed as MATH 399 for Fall 2007 only).

## Upper Division Zoology Courses

BIOL 314	Comparative Vertebrate Anatomy
BIOL 324	Developmental Biology
BIOL 419	Mammalian Histology
BIOL 420	Musculo-Skeletal Anatomy
BIOL 423	General Parasitology (reflects proposed change in title)
BIOL 426	Herpetology
BIOL 427	Ichthyology
BIOL 428	Veterinary and Medical Entomology (reflects proposed change in title)
BIOL 429	Regional Anatomy and Histology
BIOL 431	General Entomology
BIOL 435	Vertebrate Paleontology
BIOL 438	Ornithology
BIOL 440	Human Gross Anatomy
BIOL 441	Mammalogy
BIOL 443	Endocrinology
BIOL 449	Human Physiology
BIOL 456	Human Physiology II
BIOL 459	Fish Ecology
BIOL 470	Cross-Sectional Anatomy
BIOL 486	Human Systemic Physiology
BIOL 495	Ethology

Note:

BIOL 481 and BIOL 482 can be counted as upper division zoology credits only if approved by the department.

## RECOMMENDED COURSE SELECTION - B.S. of ZOOLOGY

Fall Semester

Spring Semester

### For Students Who Qualify to take Math 143 During their First Semester

#### Freshman Year

BIOL 101/101L	Biology I	4 cr	BIOL 102/102L	Biology II	4 cr
MATH 143	College Algebra	3 cr	MATH 160	Brief Calculus	3 cr
ENGL 101	English Composition	3 cr	ENGL 102	English Composition	3 cr
Goal 6, 7, or 8		3 cr	COMM 101	Principles of Speech	3 cr
Electives <sup>1</sup>		<u>3 cr</u>	Goal 6, 7, or 8		<u>3 cr</u>
		16 cr			16 cr

#### Sophomore Year

BIOL 209	Ecology	4 cr	BIOL 206/207	Cell Biology	4 cr
CHEM 111	General Chemistry I	5 cr	CHEM 112	General Chemistry II	4 cr
Electives <sup>1</sup>		4 cr	Goal 9, 10, 11 or 12		3 cr
Goal 9, 10, 11 or 12		<u>3 cr</u>	Goal 9, 10, 11 or 12		3 cr
		16 cr			16 cr

#### Junior Year

CHEM 301/303	Organic Chemistry/Lab	4 cr	CHEM 302/304	Organic Chemistry/Lab	4 cr
PHYS 111/113	General Physics/Lab	4 cr	PHYS 112/114	General Physics/Lab	4 cr
BIOL 314 <sup>2</sup>	Comp Vert Anatomy	4 cr	BIOL 324 <sup>2</sup>	Developmental Biology	4 cr
MATH 350 <sup>3</sup>	Statistics	3 cr	BIOL 303 <sup>4</sup>	Principals of Animal Phys	<u>4 cr</u>
BIOL 315L <sup>3</sup>	Biometry Lab	<u>1 cr</u>			
		16 cr			16 cr

#### Senior Year

BIOL 358 <sup>2</sup>	Genetics	3 cr	BIOL 417	Evolution	3 cr
Upper Division Zoology Electives <sup>5</sup>		3 cr	BIOL 310	Invertebrate Zoology	4 cr
BIOL 491	Seminar	1 cr	BIOL 492	Seminar	1 cr
Electives <sup>1</sup>		<u>9 cr</u>	Upper Division Zoology Electives <sup>5</sup>		3 cr
		16 cr			16 cr

#### Graduation Requirements:

To graduate in 4 years (or 8 semesters) you need to average 16 credits/semester (128/8=16)

Total Credits: 128

- General Education requirements: Goals 1, 2, 3, 4, 5; 2 of 6, 7, & 8; and 3 of 9, 10, 11, and 12
- Upper division credits: 36 minimum
- Satisfy departmental requirements

- <sup>1</sup>. Electives include any biology or non-biology upper or lower division credits. Recommended electives are those that make students more competitive.
- <sup>2</sup>. Students must take either BIOL 314 (Comparative Vertebrate Anatomy) **or** BIOL 324 (Developmental Biology). BIOL 358 (Genetics) can be taken in the first semester of the junior year if students elect to take BIOL 324 or during the second semester of the junior year if students elect to take BIOL 314.
- <sup>3</sup>. The requirement for Statistics may be satisfied by taking MATH 253 or MATH 350 for students enrolled prior to Fall 2007. Starting Fall 2007, students must take MATH 350 (listed as MATH 399 for Fall 2007 only) with BIOL 315L.
- <sup>4</sup>. BIOL 301 and 302 (2 semesters of Anatomy and Physiology) can substitute for this course.
- <sup>5</sup>. The minimum of 6 credits of upper division zoology are required. BIOL 481 and BIOL 482 can be counted as upper division zoology credits only if approved by the department.

Students should consult with their advisors and with the current departmental list of course rotations to determine which semesters and years biological sciences electives will be taught.

## RECOMMENDED COURSE SELECTION - B.S. of ZOOLOGY

Fall Semester

Spring Semester

### For Students Who Qualify to take Math 160 During their First Semester

#### Freshman Year

BIOL 101/101L	Biology I	4 cr	BIOL 102/102L	Biology II	4 cr
CHEM 111	General Chemistry I	5 cr	CHEM 112	General Chemistry II	4 cr
MATH 160	Brief Calculus	3 cr	COMM 101	Principles of Speech	3 cr
ENGL 101	English Composition	3 cr	ENGL 102	English Composition	3 cr
Electives <sup>1</sup>		<u>1 cr</u>	Electives <sup>1</sup>		<u>2 cr</u>
		16 cr			16 cr

#### Sophomore Year

BIOL 206/207 <sup>2</sup>	Cell Biology	4 cr	BIOL 209 <sup>2</sup>	Ecology	4 cr
CHEM 301/303	Organic Chemistry/Lab	4 cr	CHEM 302/304	Organic Chemistry/Lab	4 cr
Goal 6, 7 or 8		3 cr	Goal 6, 7 or 8		3 cr
Goal 9, 10, 11 or 12		3 cr	Goal 9, 10, 11 or 12		3 cr
Electives <sup>1</sup>		<u>2 cr</u>	Goal 9, 10, 11 or 12		<u>3 cr</u>
		16 cr			17 cr

#### Junior Year

PHYS 111/303	General Physics/Lab	4 cr	PHYS 112/114	General Physics/Lab	4 cr
BIOL 314 <sup>3</sup>	Comp Vert Anatomy	4 cr	BIOL 324 <sup>3</sup>	Developmental Biology	4 cr
MATH 350 <sup>4</sup>	Statistics	3 cr	BIOL 303 <sup>5</sup>	Principals of Animal Phys	4 cr
BIOL 315L <sup>4</sup>	Biometry Lab	1 cr	BIOL 310	Invertebrate Zoology	<u>4 cr</u>
BIOL 358	General Genetics	<u>3 cr</u>			16 cr
		15 cr			

#### Senior Year

BIOL 491	Seminar	1 cr	BIOL 492	Seminar	1 cr
BIOL 417	Evolution	3 cr	Upper Division Zoology Electives <sup>6</sup>		3 cr
Upper Division Zoology Electives <sup>6</sup>		3 cr	Electives <sup>1</sup>		<u>12 cr</u>
Electives <sup>1</sup>		<u>9 cr</u>			16 cr
		16 cr			

#### Graduation Requirements:

To graduate in 4 years (or 8 semesters) you need to average 16 credits/semester (128/8=16)

Total Credits: 128

- General Education requirements: Goals 1, 2, 3, 4, 5; 2 of 6, 7, & 8; and 3 of 9, 10, 11, and 12
- Upper division credits: 36 minimum
- Satisfy departmental requirements

- <sup>1</sup>. Electives include any biology or non-biology upper or lower division credits. Recommended electives are those that make students more competitive.
- <sup>2</sup>. Cell biology and Ecology can be switched between fall and spring semesters.
- <sup>3</sup>. Students must take either BIOL 314 (Comparative Vertebrate Anatomy) **or** BIOL 324 (Developmental Biology)
- <sup>4</sup>. The requirement for Statistics may be satisfied by taking MATH 253 or MATH 350 for students enrolled prior to Fall 2007. Starting Fall 2007, students must take MATH 350 (listed as MATH 399 for Fall 2007 only) with BIOL 315L.
- <sup>5</sup>. BIOL 301 and 302 (2 semesters of Anatomy and Physiology) can substitute for this course.
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