

COURSE REQUIREMENTS FOR BACHELOR OF ARTS OR  
BACHELOR OF SCIENCE IN ZOOLOGY

- A. THE GENERAL EDUCATION AND TOTAL UNIVERSITY CREDIT REQUIREMENTS MUST BE MET. NOTE: See General Education Goals for B.S. or B.A. degree (ISU Catalog). 128 total minimum credits are required for graduation. 36 of these must be upper division credits.
- B. COURSES IN BIOLOGICAL SCIENCES: NUMBER OF CREDITS
- EITHER THESE TWO COURSES**
- |      |     |            |   |
|------|-----|------------|---|
| BIOL | 101 | Biology I  | 4 |
| BIOL | 102 | Biology II | 4 |
- OR THESE FOUR COURSES**
- |      |      |                     |   |
|------|------|---------------------|---|
| BIOL | 202  | General Zoology     | 3 |
| BIOL | 202L | General Zoology Lab | 1 |
| BIOL | 203  | General Botany      | 3 |
| BIOL | 203L | General Botany Lab  | 1 |
- AND THESE COURSES**
- |      |     |                                 |    |
|------|-----|---------------------------------|----|
| BIOS | 209 | General Ecology and Lab         | 4  |
| BIOS | 206 | Cell Biology                    | 3  |
| BIOS | 207 | Cell Biology Lab                | 1  |
| BIOS | 303 | Principles of Animal Physiology | 4* |
| BIOS | 310 | Invertebrate Zoology            | 4  |
| BIOS | 314 | Comparative Vertebrate Anatomy  |    |
- OR
- |      |     |                       |   |
|------|-----|-----------------------|---|
| BIOS | 324 | Developmental Biology | 4 |
| BIOS | 317 | Organic Evolution     | 3 |
| BIOS | 358 | General Genetics      | 3 |
| BIOS | 491 | Seminar               | 1 |
| BIOS | 492 | Seminar               | 1 |
- Biological Sciences Electives:**
- |      |     |                        |   |
|------|-----|------------------------|---|
| BIOS | XXX | Upper Division Zoology | 3 |
|------|-----|------------------------|---|
- Additional courses in Biological Sciences that are highly recommended, but not required:**
- |      |     |                          |   |
|------|-----|--------------------------|---|
| BIOS | 315 | Introduction to Biometry | 3 |
|------|-----|--------------------------|---|
- C. COURSES IN MATHEMATICS
- |                              |     |                |   |
|------------------------------|-----|----------------|---|
| MATH                         | 147 | Precalculus    | 5 |
| (OR MATH 143 <u>and</u> 144) |     |                |   |
| MATH                         | 160 | Brief Calculus | 4 |
- D. COURSES IN CHEMISTRY
- |      |     |                          |   |
|------|-----|--------------------------|---|
| CHEM | 111 | General Chemistry I      | 5 |
| CHEM | 112 | General Chemistry II     | 4 |
| CHEM | 301 | Organic Chemistry I      | 3 |
| CHEM | 303 | Organic Chemistry I Lab  | 1 |
| CHEM | 302 | Organic Chemistry II     | 3 |
| CHEM | 304 | Organic Chemistry II Lab | 1 |
- E. COURSES IN PHYSICS
- |      |     |                        |   |
|------|-----|------------------------|---|
| PHYS | 111 | General Physics I      | 3 |
| PHYS | 113 | General Physics I Lab  | 1 |
| PHYS | 112 | General Physics II     | 3 |
| PHYS | 114 | General Physics II Lab | 1 |
- F. COURSE IN FOREIGN LANGUAGE
- |      |     |                  |   |
|------|-----|------------------|---|
| LANG | XXX | Foreign Language | 8 |
|------|-----|------------------|---|
- (Any of the foreign languages offered at ISU will satisfy this requirement. This requirement is waived for those who have taken 2 or more years of high school foreign language with a grade of "C" or above. A high school transcript must be delivered to the Department of Biological Sciences).

\*Two semesters of BIOS 301 and 302 (Anatomy and Physiology) will substitute for this requirement. However, if BIOS 301 and 302 are used for this purpose they cannot count as upper division Zoology.



## Fall Semester

## Spring Semester

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

## Freshman Year

*Biol	101	-	Biology I	4	cr	*Biol	102	-	Biology II	4	cr
Chem	111	-	General Chemistry I	5	cr	Chem	112	-	General Chemistry II	4	cr
<sup>2</sup> Math	160	-	Brief Calculus	5	cr	Comm	101	-	Principles of Speech	2	cr
Engl	101	-	English Composition	<u>3</u>	cr			General Education Requirements		<u>6</u>	cr
				17	cr					16	cr

## Sophomore Year

Bios	209	-	General Ecology	4	cr	Bios	206	-	Cell Biology	3	cr
Phys	111	-	General Physics I	3	cr	Bios	207	-	Cell Biology Lab	1	cr
Phys	113	-	General Physics I Lab	1	cr	Phys	112	-	General Physics II	3	cr
<sup>3</sup> Foreign Language or Elective				3-4	cr	Phys	114	-	General Physics II Lab	1	cr
General Education Requirements				<u>6</u>	cr	<sup>3</sup> Foreign Language or Elective				3-4	cr
				16-17	cr	General Education Requirements				<u>3</u>	cr
										14-15	cr

## Junior Year

<sup>4</sup> Bios	314	-	Comp Vertebrate Anat			<sup>4</sup> Bios	324	-	Developmental Biology		
or	Biological Sciences Elective		3-4	cr	or	Biological Sciences Elective		3-4	cr		
<sup>5</sup> Chem	301	-	Organic Chem I	3	cr	Bios	310	-	Invertebrate Zoo	4	cr
Chem	303	-	Organic Chem I Lab	1	cr	<sup>5</sup> Chem	302	-	Organic Chem II	3	cr
General Education Requirements or						Chem	304	-	Organic Chem II Lab	1	cr
<sup>6</sup> Elective				<u>9</u>	cr	General Education Requirements or					
				16-17	cr	<sup>6</sup> Elective				3	cr
						Elective (Upper Division Zoology)				<u>3</u>	cr
										17-18	cr

## Senior Year

Bios	358	-	Genetics	3	cr	<sup>7</sup> Bios	303	-	Prin of Animal Phys	4	cr
Bios	491	-	Seminar	1	cr	Bios	317	-	Evolution	3	cr
<sup>6</sup> Electives				<u>12</u>	cr	Bios	492	-	Seminar	1	cr
				16	cr	<sup>6</sup> Electives				<u>8</u>	cr
										16	cr

<sup>1</sup>Students pursuing a Bachelor of Arts degree must take 6 credits of General Education Requirements in addition to those identified above. See Goals 6, 7, 8, 9, 10A and 10B, 11 and 12.

<sup>2</sup>Students who qualify, according to their ACT, SAT or math proficiency exam scores, should enroll in Math 160.

<sup>3</sup>This departmental requirement for the Zoology major will be waived by the Department of Biological Sciences if the student has 2 or more years of high school foreign language with a grade of "C" or above. The student, however, must still satisfy the General Education Requirements of Goal 10A and 10B for a Bachelor of Arts degree and 3 of goals 9, 10, 11 and 12 for a Bachelor of Science degree.

<sup>4</sup>Students must take either Bios 314 (Comparative Vertebrate Anatomy) or Bios 324 (Developmental Biology).

<sup>5</sup>Recommended to be taken during Sophomore year for preprofessional majors.

<sup>6</sup>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 given.

<sup>7</sup>Recommended to be taken during Junior year for preprofessional majors. Equivalent courses such as Bios 449 can substitute or 2 semesters of Anatomy and Physiology (Bios 301 & 302).

\*Or BIOL 202 (General Zoology), BIOL 202L (General Zoology Lab), BIOL 203 (General Botany) and BIOL 203L (General Botany Lab), 8 cr.

The courses listed below count as upper division botany & zoology courses required for the biology major. **Note:** Biology majors are required to take at least three credits in Botany or Zoology and eight credits combined. You cannot use a required course as an upper division elective as well.

Course No.	Upper Div	Course Name	Credits
304	Botany	Elements of Plant Physiology	4
309	Botany	Range Agrostology	2
311	Botany	Dendrology	3
312	Botany	Systematic Botany	4
405	Botany	Plant Anatomy	3
406	Botany	Plant Morphology	4
408	Botany	Plant Ecology	3
301	Zoology	Anatomy and Physiology	4
302	Zoology	Anatomy and Physiology	4
303	Zoology	Principles of Animal Physiology	4
310	Zoology	Invertebrate Zoology	4
314	Zoology	Comparative Vertebrate Anatomy	4
324	Zoology	Developmental Biology	4
420	Zoology	Musculo-Skeletal Anatomy 2	
423	Zoology	Parasitology	3
425	Zoology	Human Anatomy	4
426	Zoology	Herpetology	3
427	Zoology	Ichthyology	3
428	Zoology	Veterinary and Medical Entomology	3
429	Zoology	Regional Anatomy and Histology	4
430	Zoology	Human Performance Physiology	4
431	Zoology	General Entomology	3
435	Zoology	Vertebrate Paleontology	4
438	Zoology	Ornithology	3
440	Zoology	Human Gross Anatomy	4
441	Zoology	Mammalogy	3
443	Zoology	Endocrinology	3
449	Zoology	Human Physiology	4
470	Zoology	Cross-Sectional Anatomy	2
486	Zoology	Human Systemic Physiology	5