

COURSE REQUIREMENTS FOR BACHELOR OF SCIENCE IN BIOLOGY

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	221	Introductory Microbiology	3
BIOS	223	Introductory Microbiology Lab	1
BIOS	317	Organic Evolution	3
BIOS	358	General Genetics	3
BIOS	491	Seminar	1
BIOS	492	Seminar	1

Biological Sciences Electives (upper division courses)

BIOS	XXX	Botany elective (upper division)	4
BIOS	XXX	Zoology elective (upper division)	4

(The combination of upper division botany and zoology must equal 8 credits with at least 3 credits of upper division botany and 3 credits of upper division zoology).

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	101	Essentials of Chemistry I	5
CHEM	102	Essentials of Chemistry II	5
		OR	
CHEM	111	General Chemistry I and	5
CHEM	112	General Chemistry II	4

IN ADDITION, THE GENERAL EDUCATION AND TOTAL UNIVERSITY CREDIT REQUIREMENTS MUST BE MET.

NOTE: 128 TOTAL MINIMUM CREDITS ARE REQUIRED FOR GRADUATION. 36 OF THESE MUST BE UPPER DIVISION CREDITS.

RECOMMENDED COURSE SELECTION - BIOLOGY MAJOR

Bachelor of Science

(It is the general policy of the Department of Biological Sciences that required courses not be waived and that course selection should follow the sequence listed for each major).

Fall Semester		Spring Semester	
Freshman Year			
² Biol 101 - Biology I	4 cr	² Biol 102 - Biology II	4 cr
³ Math 147 - Pre-Calculus or Math 143 <u>and</u> Math 144	5 cr	Math 160 - Brief Calculus	4 cr
Engl 101 - English Composition	3 cr	Speech Requirements or Elective	2 cr
Electives	<u>4 cr</u>	Electives	<u>6 cr</u>
	16 cr		16 cr
Sophomore Year			
Bios 209 - General Ecology	4 cr	⁴ Chem 102 - Essentials of Chem. II	5 cr
⁴ Chem 101 - Essential of Chem. I	5 cr	General Education Requirements	3 cr
General Education Requirements	3 cr	⁵ Biological Sciences Elective	4 cr
Electives	<u>4 cr</u>	Electives	<u>4 cr</u>
	16 cr		16 cr
Junior Year			
Bios 206 - Cell Biology	3 cr	Bios 221 - Intro to Microbiology	3 cr
Bios 207 - Cell Biology Lab	1 cr	Bios 223 - Intro to Micro Lab	1 cr
General Education Requirements	3 cr	General Education Requirements	3 cr
⁵ Biological Sciences Elective	4 cr	⁵ Biological Sciences Elective	4 cr
Electives	<u>5 cr</u>	Electives	<u>5 cr</u>
	16 cr		16 cr
Senior Year			
Bios 491 - Seminar	1 cr	Bios 492 - Seminar	1 cr
Bios 358 - Genetics	3 cr	Bios 317 - Evolution	3 cr
General Education Requirements	3 cr	Electives	<u>12 cr</u>
Electives	<u>9 cr</u>		16 cr
	16 cr		

¹Students pursuing a Bachelor of Science degree must satisfy goals 1, 2, 3, 4, and 5, and 2 of goals 6, 7, and 8, and 3 of goals 9, 10, 11, and 12.

²Or BIOL 202 (General Zoology), BIOL 202L (General Zoology Lab), BIOL 203 (General Botany) and BIOL 203L (General Botany Lab), 8 cr.

³Students with more than one year of high school algebra should take the mathematics placement exam and enroll in Math 160, if possible.

⁴Or Chem 111-112 (General Chemistry I & II), 9 cr.

⁵Biology electives must include upper division course work in both botany and zoology. Students should consult with their advisors and with the current departmental list of course rotations to determine which semesters and years biology electives will be offered. Students may select courses in the College of Education to meet the requirements for teacher certification while completing a degree in the College of Arts and Sciences. ¹Such Students must apply for admission to the Teacher Education Program. See the Teacher Education Program in the University Bulletin for requirements in the College of Education.

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