

## COURSE REQUIREMENTS FOR BACHELOR OF ARTS IN BIOLOGY

1. ALL OF THE GENERAL EDUCATION AND TOTAL UNIVERSITY CREDIT REQUIREMENTS MUST BE MET.<sup>1,2,3,4</sup>  
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 1101	Biology I	4
BIOL 1102	Biology II	4
BIOS 2206	Cell Biology	4
BIOS 2209	General Ecology	4
BIOS 3358	General Genetics	3
BIOS 4417	Organic Evolution	3
BIOS 4491,4492	Seminar	2
Additional upper division course work in Biological Sciences <sup>4,5,6</sup> which must include at least 6 credits in: Botany (BIOS 4404, 4405, 4406, 4408, 4412, 4442, or 4489) and at least 6 credits in: Zoology (BIOS 3303, 3310, 3314, 3324, 4419, 4420, 4423, 4426, 4427, 4428, 4429, 4431, 4435, 4438, 4440, 4441, 4443, 4449, 4456, 4459, 4470, 4486, or 4495)		28
3. COURSES IN MATHEMATICS
 

MATH 1160 <sup>7</sup>	Brief Calculus	4
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4. COURSES IN CHEMISTRY<sup>2,5</sup>

CHEM 1111	General Chemistry I	5
CHEM 1112	General Chemistry II	<u>4</u>
		65

### Notes:

1. Students pursuing a Bachelor of Arts degree must satisfy **all** of the General Education goals.
2. Students who plan to apply to graduate or professional programs in the biological or medical sciences are strongly advised to take CHEM 1111/1112, a full year of Organic Chemistry (CHEM 3301, 3303, 3302, 3304), and a full year of Physics (PHYS 1111, 1113, 1112, 1114). These classes are required by many graduate and professional programs.
3. 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.
4. 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. Such 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.
5. Up to 8 credits of Organic Chemistry may be counted towards the required upper division credits in Biological Sciences.
6. A maximum of 8 credits of BIOS 4481 and BIOL 4482 may be applied to this degree program. BIOL 4481 and BIOL 4482 can be counted as upper division botany or zoology credits only if approved by the department.
7. Students may take MATH 1170 in place of MATH 1160. MATH 1160 has a prerequisite of MATH 1143. MATH 1170 has a prerequisite of MATH 1147. Prerequisites for both classes may be satisfied by the Mathematics placement exam

## Upper Division Botany Courses

BIOL 4404	Plant Physiology
BIOL 4405	Plant Form and Function
BIOL 4406	Plant Diversity and Evolution
BIOL 4408	Plant Ecology
BIOL 4412	Systematic Botany
BIOL 4442	Plant and Animal Interactions
BIOL 4489	Field Ecology

## Upper Division Zoology Courses

BIOL 3303	Principles of Animal Physiology
BIOL 3310	Invertebrate Zoology
BIOL 3314	Comparative Vertebrate Anatomy
BIOL 3324	Developmental Biology
BIOL 4419	Mammalian Histology
BIOL 4420	Musculo-Skeletal Anatomy
BIOL 4423	General Parasitology (reflects proposed change in title)
BIOL 4426	Herpetology
BIOL 4427	Ichthyology
BIOL 4428	Veterinary and Medical Entomology (reflects proposed change in title)
BIOL 4429	Regional Anatomy and Histology
BIOL 4431	General Entomology
BIOL 4435	Vertebrate Paleontology
BIOL 4438	Ornithology
BIOL 4440	Human Gross Anatomy
BIOL 4441	Mammalogy
BIOL 4443	Endocrinology
BIOL 4449	Human Physiology
BIOL 4456	Human Physiology II
BIOL 4459	Fish Ecology
BIOL 4470	Cross-Sectional Anatomy
BIOL 4486	Human Systemic Physiology
BIOL 4495	Ethology

### Note:

BIOL 4481 and BIOL 4482 can be counted as upper division botany or zoology credits only if approved by the department.

## RECOMMEND COURSE SELECTION - B.A. of BIOLOGY

Fall Semester		Spring Semester			
<b>For Students Who Qualify to take MATH 1143 During their First Semester</b>					
Freshman Year					
BIOL 1101/1101L	Biology I	4 cr	BIOL 1102/1102L	Biology II	4 cr
MATH 1143	College Algebra	3 cr	MATH 1160	Brief Calculus	3 cr
ENGL 1101	English Composition	3 cr	ENGL 1102	English Composition	3 cr
Goal 6, 7, or 8		3 cr	COMM 1101	Principles of Speech	3 cr
Goal 9, 10, 11, or 12		<u>3 cr</u>	Goal 6, 7, or 8		<u>3 cr</u>
		16 cr			16 cr
Sophomore Year					
BIOL 2209	Ecology	4 cr	BIOL 2206/2207	Cell Biology	4 cr
CHEM 1111 <sup>1</sup>	General Chemistry I	5 cr	CHEM 1112 <sup>1</sup>	General Chemistry II	4 cr
Goal 6, 7, or 8		3 cr	Goal 9, 10, 11, or 12		3 cr
Goal 10b		<u>4 cr</u>	Goal 10b		4 cr
		16 cr	Elective <sup>2</sup>		<u>1 cr</u>
					16 cr
Junior Year					
BIOL 3358	Genetics	3 cr	BIOL 4417	Evolution	3 cr
Goal 9, 10, 11, or 12		3 cr	Goal 9, 10, 11, or 12		3 cr
Upper Division Botany Electives <sup>3</sup>		3 cr	Upper Division Botany Electives <sup>3</sup>		3 cr
Upper Division Zoology Electives <sup>3</sup>		3 cr	Upper Division Zoology Electives <sup>3</sup>		3 cr
Upper Division Biology Electives <sup>4</sup>		<u>4 cr</u>	Upper Division Biology Electives <sup>4</sup>		<u>4 cr</u>
		16 cr			16 cr
Senior Year					
BIOL 4491	Senior Seminar	1 cr	BIOL 4492	Senior Seminar	1 cr
Upper Division Biology Electives <sup>4</sup>		4 cr	Upper Division Biology Electives <sup>4</sup>		4 cr
Electives <sup>2</sup>		<u>11 cr</u>	Electives <sup>2</sup>		<u>11 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
- A statistics course is recommended for all students. Recommended statistics are MATH 3350 (listed as MATH 399 for Fall 2007 only) with BIOL 3315L

- <sup>1</sup> Students applying to professional schools or graduate schools may need to add a second semester of organic chemistry and physics, depending on application requirements.
- <sup>2</sup> Electives include any biology or non-biology upper or lower division credits. Recommended electives are those that make the student more competitive.
- <sup>3</sup> A minimum of 6 credits of upper division botany and 6 credits of upper division zoology are required. BIOL 4481 and BIOL 4482 can be counted as upper division botany or zoology credits only if approved by the department.
- <sup>4</sup> In addition to the 12 credits of upper division botany and zoology, 16 credits of upper division biology are required. Upper division biology includes any upper division course with a BIOL prefix including additional botany or zoology courses. Students who take CHEM 3302/3304 can count the 4 credits as upper division biology credit.

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.A. of BIOLOGY

Fall Semester

Spring Semester

<b>For Students Who Qualify to take MATH 1160 During their First Semester</b>					
<b>Freshman Year</b>					
BIOL 1101/1101L	Biology I	4 cr	BIOL 1102/1102L	Biology II	4 cr
CHEM 1111 <sup>1</sup>	General Chemistry I	5 cr	CHEM 1112 <sup>1</sup>	General Chemistry II	4 cr
MATH 1160	Brief Calculus	3 cr	ENGL 1102	English Composition	3 cr
ENGL 1101	English Composition	3 cr	COMM 1101	Principles of Speech	3 cr
Elective <sup>2</sup>		<u>1 cr</u>	Electives <sup>2</sup>		<u>2 cr</u>
		16 cr			16 cr
<b>Sophomore Year</b>					
BIOL 2209 <sup>3</sup>	General Ecology	4 cr	BIOL 2206/2207 <sup>3</sup>	Cell Biology	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
Goal 10b		3 cr	Goal 10b		4 cr
Elective <sup>2</sup>		<u>3 cr</u>	Electives <sup>2</sup>		<u>2 cr</u>
		16 cr			16 cr
<b>Junior Year</b>					
BIOL 3358	Genetics	3 cr	BIOL 4417	Evolution	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	Upper Division Botany Electives <sup>4</sup>		3 cr
Upper Division Botany Electives <sup>4</sup>		3 cr	Upper Division Zoology Electives <sup>4</sup>		3 cr
Upper Division Zoology Electives <sup>4</sup>		3 cr	Upper Division Biology Electives <sup>5</sup>		<u>4 cr</u>
Elective <sup>2</sup>		<u>1 cr</u>			
		16 cr			16 cr
<b>Senior Year</b>					
BIOL 4491	Senior Seminar	1 cr	BIOL 4492	Senior Seminar	1 cr
Upper Division Biology Electives <sup>5</sup>		4 cr	Upper Division Biology Electives <sup>5</sup>		8 cr
Electives		<u>11 cr</u>	Electives		<u>7 cr</u>
		16 cr			16 cr

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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
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- <sup>1</sup> Students applying to professional schools or graduate schools may need to add a second semester of organic chemistry and physics, depending on application requirements.
- <sup>2</sup> Electives include any biology or non-biology upper or lower division credits. Recommended electives are those that make the student more competitive.
- <sup>3</sup> BIOL 2206/2207 (Cell Biology) and BIOL 2209 (Ecology) can be switched between fall and spring semesters.
- <sup>4</sup> A minimum of 6 credits of upper division botany and 6 credits of upper division zoology are required. BIOL 4481 and BIOL 4482 can be counted as upper division botany or zoology credits only if approved by the department.
- <sup>5</sup> In addition to the 12 credits of upper division botany and zoology, 16 credits of upper division biology are required. Upper division biology includes any upper division course with a BIOL prefix including additional botany or zoology courses. Students who take CHEM 3302/3304 can count the 4 credits as upper division biology credit.

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.