

# Bachelor of Science: Biology (84A)

2017 -2018

68 hours

The Bachelor of Science major in Biology is especially appropriate for students planning graduate study. It is an extended major designed to prepare students for careers in areas which require a higher degree of concentration in subject matter and advanced-level courses. The combination of required and elective courses needs to equal a minimum of 68 credit hours.

## Introductory Track

- \_\_\_ BIOL 2051 General Biology: Organismal Diversity, 4 hrs
- \_\_\_ BIOL 2052 General Biology: Cell Structure and Function, 4 hrs
- \_\_\_ BIOL 3100 Evolution, Ecology & the Nature of Science, 3 hrs
- \_\_\_ BIOL 3140 Genetics, 4 hrs

## Required Chemistry\*

- \_\_\_ CHEM 1110 General Chemistry I, 4 hrs
- \_\_\_ CHEM 1120 General Chemistry II, 4 hrs

## Required Advanced Chemistry

- \_\_\_ CHEM 2210 Organic Chemistry I, 3 hrs
- \_\_\_ CHEM 2220 Organic Chemistry II, 3 hrs
- \_\_\_ CHEM 2230 Organic Chemistry Lab, 2 hrs

## Required Math

- \_\_\_ MATH 1420 Calculus I, 4 hrs

## Required Physics

- \_\_\_ PHYSICS 1511 General Physics I, 4 hrs
- \_\_\_ PHYSICS 1512 General Physics II, 4 hrs

## Required Biology

- \_\_\_ BIOL 4157 Biostatistics, 3 hrs
- \_\_\_ BIOL 3190 Undergraduate Research, 2 hrs

## Major Elective Credits

(19-20 hours to total 68)

- \_\_\_ List of biology electives attached.
- \_\_\_ CHEM 4510 Biochemistry I, 3 hrs
- \_\_\_ MATH 1421 Calculus II, 4 hrs
- \_\_\_ Science courses at **Iowa Lakeside Laboratory** satisfy elective requirements. Check with your advisor for information.

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## NOTES:

- Must have a UNI cumulative and a UNI major/Plan GPA of 2.50 or higher, with a grade of C- (1.67) or higher in all courses that are applied to the major.
- A minimum of 7 credits of 4000 biology electives required. BIOL4198 Independent Study and CHEM4510 Biochemistry do not count toward 4000 level biology elective requirement. At least 4 credits of 4000 level biology electives need to be taken at UNI.
- BIOL 3101 Anatomy & Physiology I counts as an university elective not as a biology major elective
- Cannot count more than a **combined 4 credits** to biology electives requirement.
  - BIOL 3185 Readings in Biology
  - BIOL 3190 Undergraduate Research
  - BIOL 4198 Independent Study
- If \*CHEM 1130 General Chemistry I-II, 5 hrs, is taken, then 3 additional biology electives are required to reach a 68 credit major.
- Students invited to do Honors Research will complete 4 credit hours of BIOL 3190 Undergraduate Research and 1 credit hour of BIOL 3191 Senior Thesis. Students must declare the HONORS EMPHASIS in order for it to reflect on the degree.

## 3000 & 4000 BIOLOGY COURSE OFFERINGS

**BIOL3100** Evolution, Ecology & Nature of Science  
(Fall/Spring) 3 hrs  
**BIOL 3102** Anatomy & Physiology II\* (Fall/Spring), 4 hrs  
**BIOL 3106** Vertebrate Anatomy (Fall/Spring), 4 hrs  
**BIOL 3107** Environmental Physiology (Fall), 3 hrs  
**BIOL 3108** Vertebrate Histology (Even Springs), 4 hrs  
**BIOL 3112** Invertebrate Zoology (Spring), 4 hrs  
**BIOL 3118** Marine Biology (Fall), 3 hrs  
**BIOL 3120** Plant Diversity and Evolution (Spring), 4 hrs  
**BIOL 3140** Genetics (Spring/Fall), 4 hrs  
**BIOL 3147** Cancer and Emerging Infectious Diseases  
(Spring), 3 hrs  
**BIOL 3151** General Microbiology (Fall/Spring), 4 hrs  
**BIOL 3160** Field Zoology of Vertebrates (Spring), 4 hrs  
**BIOL 3170** Entomology (Even Falls), 3 hrs

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**BIOL 4105** Wildlife Ecology & Mngmt (Odd Falls), 4 hrs  
**BIOL 4108** Biodiversity Conservation Policy & Regs  
(Even Falls), 3 hrs  
**BIOL 4114** Comparative Animal Physiology# (Even  
Falls) 4 hrs  
**BIOL 4116** Neurobiology (Spring), 3 hrs  
**BIOL 4121** Plant Biotechnology (Odd Falls), 4 hrs  
**BIOL 4122** Plant Physiology (Spring), 4 hrs  
**BIOL 4127** Bioinformatics Applications for Biology,  
(Even Springs), 3hrs  
**BIOL 4128** Cell Biology# (Spring), 4 hrs  
**BIOL 4129** Genomics & Proteomics (Even Falls), 3 hrs

**BIOL 4137** Vertebrate Physiology# (Odd Falls), 4 hrs  
**BIOL 4142** Evolutionary Biology (Spring), 3 hrs  
**BIOL 4144** Virology (Even Springs), 4 hrs  
**BIOL 4146** Developmental Biology of Animals  
(Fall/Spring), 4 hrs  
**BIOL 4150** Immunology (Fall/Spring), 4 hrs  
**BIOL 4152** Microbial Molecular Bio (Odd Springs), 4 hrs  
**BIOL 4153** Recombinant DNA Tech (Even Falls), 4 hrs  
**BIOL 4154** Aquatic Ecology (Fall), 3 hrs  
**BIOL 4157** Biostatistics (Fall), 3 hrs  
**BIOL 4164** Mammalogy (Fall), 4 hrs  
**BIOL 4166** Plant Systematics (Fall), 4 hrs  
**BIOL 4167** Conservation Biology (Spring), 3 hrs  
**BIOL 4168** Ecology (Fall), 4 hrs  
**BIOL 4172** Developmental Plant Anatomy (Fall), 4 hrs  
**BIOL 4176** Microscopy Methods in Biology, 3 hrs  
**BIOL 4180** Restoration Ecology (Spring), 4 hrs  
**BIOL 4198** Independent Study\*\*\*\*

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Research Associated Credits  
**BIOL 3185** Readings in Biology, 1-3 hrs  
**BIOL 3189** Seminar, 1 hr  
**BIOL 3190** Undergraduate Research Biology, 1-3 hrs\*\*\*

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Science courses at **Iowa Lakeside Laboratory**,  
lakesidelab.org, satisfy elective requirements. Check  
with your advisor for specific information.

Full course details at: [uni.edu/catalog](http://uni.edu/catalog)

### NOTES:

1. Prerequisite for 3000 level courses include completion of: BIOL 2052, BIOL 2051, CHEM 1110 and CHEM 1120. All with a with C- or higher
2. Prerequisite for 4000 level courses include junior standing and completion of
  - a. Two semester sequence of General Biology and General Chemistry (listed above)
  - b. BIOL3100 Evolution, Ecology and Nature of Science and BIOL3140 Genetics. All with a with C- or higher
  - c. Courses with # have additional prerequisites. Check course catalog for complete details.
3. \* BIOL 3101 A & P I counts as university elective credit. A student must take BIOL 3101 Anatomy and Physiology I OR BIOL 3106 Vertebrate Anatomy and BIOL 3102 Anatomy and Physiology II at UNI for BIOL 3102 to be counted as biology elective credit for the major or minor.
4. \*\*\*Undergraduate Research in Biology -- Students must contact faculty members to inquire about available research opportunities
5. The official degree requirements and policies and procedures can be found at: [www.uni.edu/catalog](http://www.uni.edu/catalog)
6. Students pursuing a biology major or minor must earn a C- or better in all coursework required for their major and must have a UNI Major/Plan GPA and UNI Cumulative GPA of 2.5 or better at the time of graduation

# Bachelor of Science: Biology

# Possible Plan of Study

Year 1-Freshman Year		Year 1-Freshman Year	
<b>BIOL2051 Gen Bio: Organismal Diversity</b>	<b>4</b>	<b>BIOL2052 Gen Bio: Cell Structure &amp; Function</b>	<b>4</b>
<b>CHEM1110 General Chemistry I*</b>	<b>4</b>	<b>CHEM1120 General Chemistry II</b>	<b>4</b>
MATH1140 Precalculus (university elective)*	4	<b>MATH1420 Calculus I (Major &amp; LAC Math)</b>	<b>4</b>
Liberal Arts Core	3	Liberal Arts Core	3
<b>*Based on ALEKS score</b>			
TOTAL HOURS = 15		TOTAL HOURS = 15	
Year 2-Sophomore Year		Year 2-Sophomore Year	
<b>BIOL3140 Genetics</b>	<b>4</b>	<b>BIOL3100 Evolution, Ecology &amp; Nature of Science</b>	<b>3</b>
<b>CHEM2210 Organic Chemistry I</b>	<b>3</b>	<b>CHEM2220 Organic Chemistry II</b>	<b>3</b>
Liberal Arts Core	3	<b>CHEM2230 Organic Chemistry Lab</b>	<b>2</b>
Liberal Arts Core	3	Liberal Arts Core	3
Liberal Arts Core	3	Liberal Arts Core	3
		University Electives	2
TOTAL HOURS = 16		TOTAL HOURS = 16	
Year 3-Junior Year		Year 3-Junior Year	
<b>BIOL4157 Biostatistics</b>	<b>3</b>	<b>Biology Major Elective 3000 or 4000 Level</b>	<b>4</b>
<b>PHYSICS 1511 General Physics I</b>	<b>4</b>	<b>PHYSICS 1512 General Physics II</b>	<b>4</b>
<b>BIOL3190 Undergraduate Research</b>	<b>1</b>	<b>BIOL3190 Undergraduate Research</b>	<b>2</b>
Liberal Arts Core	3	Liberal Arts Core	3
University Electives	4	Liberal Arts Core	3
TOTAL HOURS = 15		TOTAL HOURS = 16	
Year 4-Senior Year		Year 4-Senior Year	
<b>Biology Major Elective 4000 Level</b>	<b>4</b>	<b>Biology Major Elective 4000 Level</b>	<b>3</b>
<b>Biology Elective 3000 or 4000 Level</b>	<b>4</b>	<b>Biology Major Elective 3000 or 4000 level</b>	<b>4</b>
Liberal Arts Core	3	University Electives	9
Liberal Arts Core	3		
University Electives	3		
TOTAL HOURS = 17		TOTAL HOURS = 16	

1. This is a tentative long-term plan that is not meant to replace your official advisement report found on myUNiverse.
2. Biology majors must have UNI cumulative & UNI major/plan GPA of 2.5 or higher, with a grade of C- (1.67) or higher in major courses.
3. University Policies & Procedures can be found online: [www.uni.edu/catalog](http://www.uni.edu/catalog)
4. After earning 85+ credits meet with your Record Analyst, Diana Harwood, in 115 Gilchrist Hall to discuss graduation.