

## Bachelor of Science: Biology (84A)

2023-2024

63-67 hrs.

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 63-67 credit hours.

### Introductory Track

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

### Required Biology

- ☐ BIOL 3190 – Undergraduate Research, 2 hrs.
- ☐ BIOL 4157 – Biostatistics, 3 hrs.

### Required Chemistry

- ☐ CHEM 1110 – General Chemistry I, 4 hrs.
- ☐ CHEM 1120 – General Chemistry II, 4 hrs.
- OR**
- ☐ CHEM 1130 – General Chemistry I-II, 5 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.
- OR**
- ☐ STAT 1772 – Intro to Statistical Methods, 3 hrs.

### Required Physics

- ☐ PHYSICS 1511 – General Physics I, 4 hrs.
- ☐ PHYSICS 1512 – General Physics II, 4 hrs.

### Major Elective Credit Courses

(Choose \*19 hrs. of elective credits)

- ☐ Biology electives are listed on reverse side
- ☐ Science courses at Iowa Lakeside Laboratory satisfy elective requirements. Check with your advisor for more information.

### Additional courses that satisfy elective requirement:

- ☐ \*CHEM 4510 – Biochemistry I, 3 hrs.
- ☐ \*MATH 1421, Calculus II, 4 hrs.

### Notes:

- Must have a UNI cumulative and UNI major/plan GPA of 2.0, or higher, with a grade of C- (1.67), or better, in all courses that are applied to the major.
- \*A minimum of 7 credits of BIOL 4000 electives are required (BIOL 4198 – Independent Study, CHEM 4510 – Biochemistry I, or MATH 1421 – Calculus II cannot be counted toward this 7 credits). At least 4 credits of BIOL 4000 electives need to be taken at UNI.
- Cannot count more than a combined **4 credits** of the following courses toward the biology major elective requirements.
  - BIOL 3185 – Readings in Biology
  - BIOL 3190 – Undergraduate Research
  - BIOL 4198 – Independent Study

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 Research Emphasis (84H) in order for it to reflect on the degree.

### Choose 19 hrs. of Elective Credits

<b>BIOL 3102</b>	Anatomy & Physiology II	Fall & Spring	4 hrs. *
<b>BIOL 3106</b>	Vertebrate Anatomy	Fall	4 hrs.
<b>BIOL 3107</b>	Environmental Physiology	Variable	3 hrs.
<b>BIOL 3108</b>	Vertebrate Histology	Variable	4 hrs.
<b>BIOL 3112</b>	Invertebrate Zoology	Variable	4 hrs.
<b>BIOL 3118</b>	Marine Biology	Variable	3 hrs.
<b>BIOL 3120</b>	Plant Diversity & Evolution	Spring	4 hrs.
<b>BIOL 3147</b>	Cancer & Emerging Infectious Diseases	Spring	3 hrs.
<b>BIOL 3151</b>	General Microbiology	Fall & Spring	4 hrs.
<b>BIOL 3160</b>	Field Zoology of Vertebrates	Spring	4 hrs.
<b>BIOL 3170</b>	Entomology	Even Falls	3 hrs.
<b>BIOL 4105</b>	Wildlife Ecology & Management	Odd Falls	4 hrs.
<b>BIOL 4108</b>	Biodiversity Conservation Policy	Even Springs	3 hrs.
<b>BIOL 4114</b>	Comparative Animal Physiology	Even Falls	4 hrs. #
<b>BIOL 4116</b>	Neurobiology	Spring	3 hrs.
<b>BIOL 4121</b>	Plant Biotechnology	Odd falls	4 hrs.
<b>BIOL 4122</b>	Plant Physiology	Variable	4 hrs. #
<b>BIOL 4127</b>	Bioinformatics Applications for Biology	Variable	3 hrs.
<b>BIOL 4128</b>	Cell Biology	Spring	4 hrs. #
<b>BIOL 4129</b>	Genomics	Even Falls	3 hrs.
<b>BIOL 4130</b>	Genetic Technologies in Medicine	Odd Springs	3 hrs.
<b>BIOL 4137</b>	Vertebrate Physiology	Odd Falls	4 hrs. #
<b>BIOL 4142</b>	Evolutionary Biology	Spring	3 hrs.
<b>BIOL 4144</b>	Virology	Even Springs	4 hrs.
<b>BIOL 4146</b>	Developmental Biology of Animals	Spring	4 hrs.
<b>BIOL 4150</b>	Immunology	Fall	4 hrs.
<b>BIOL 4157</b>	Biostatistics	Fall	3 hrs.
<b>BIOL 4164</b>	Mammalogy	Fall	4 hrs.
<b>BIOL 4166</b>	Plant Systematics	Odd Falls	4 hrs.
<b>BIOL 4167</b>	Conservation Biology	Spring	3 hrs.
<b>BIOL 4168</b>	Ecology	Fall	4 hrs.
<b>BIOL 4172</b>	Developmental Plant Anatomy	Even Falls	4 hrs.
<b>BIOL 4180</b>	Restoration Ecology	Odd Springs	4 hrs.
<b>BIOL 4198</b>	Independent Study	Fall, Spring, Summer	1 – 6 hrs. ***

7 credits BIOL 4000 biology electives are required (BIOL 4198, CHEM 4510, or MATH 1421 cannot be counted toward this 7 credits). At least 4 credits of BIOL 4000 electives need to be taken at UNI.

#### Research Associated Credits:

<b>BIOL 3185</b>	Readings in Biology	Fall, Spring, Summer	1 – 3 hrs.
<b>BIOL 3189</b>	Seminar	Variable	1 – 2 hrs.
<b>BIOL 3190</b>	Undergraduate Research in Biology	Fall, Spring, Summer	1 – 3 hrs. ***
<b>BIOL 3191</b>	Senior Thesis	Fall, Spring, Summer	1 hr.

Cannot count more than a combined 4 credits of BIOL 3185, 3190, 4198 toward the biology major electives requirements

Science courses at Iowa Lakeside Laboratory, [lakesidelab.org](http://lakesidelab.org), satisfy elective requirements. Check with your advisor for more information.

#### Notes:

1. Prerequisite for 3000 level courses include completion of BIOL 2051, BIOL 2052, CHEM 1110 and CHEM 1120. All with a 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), BIOL 3100 – Evolution, Ecology & the Nature of Science, and BIOL 3140 – Genetics. All with a C- or higher.
  - c. Courses with # have additional prerequisites. Check courses catalog for complete details.
3. \* BIOL 3101 – Anatomy and Physiology I counts as university elective credit, not biology 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 count as biology elective credit for a major or minor.
4. \*\*\* BIOL 3190 - Undergraduate Research in Biology and BIOL 4198 – Independent Study require students to contact faculty members to inquire about available opportunities.
5. The official degree requirements as well as 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 or minor. Additionally, students must have a UNI Major/Plan GPA and UNI Cumulative GPA of 2.0 or better at the time of graduation