

# Biology (BA)

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## Degree Requirements for the Emphasis in Bioinformatics

- MATH 2200 is the required statistics course for this emphasis, in place of STAT 3100 or PSYC 2750

*For students completing a dual degree in mathematics, or a minor in mathematics that requires MATH 2200 Statistics, that will satisfy the statistics requirement for the BA in biology with an emphasis in bioinformatics. If the student drops the mathematics major or minor, the courses will be required and counted toward the BA in biology.*

In addition to the 54 credit hours of core coursework in biology, the following courses are required for the emphasis in bioinformatics:

- BIOL 2000 Bioinformatics (3 hours)
- COSC 1800 Python Programming (3 hours)
- CSIS 2500 Introduction to Data Science (3 hours)
- CSIS 3300 R Programming - Data Analytics (3 hours)

\*Students planning to enter a graduate program in bioinformatics or a related field involving data analysis after graduation are encouraged to choose from the following courses to fulfill some of their free elective choices:

- 1500+ level COSC courses
- 2000+ level CSIS courses
- 1440+ level MATH electives

## Emphasis in Education (72 hours)

The emphasis in education is designed for students interested in science education. Those students pursuing a biology/education dual major can take advantage of this emphasis to help satisfy some of the requirements for their certification in secondary education. Interested students should contact the Office of Teacher Certification for applications and copies of current admission requirements.

### Emphasis-Specific Learning Outcomes

In addition to the general learning outcomes, students who complete the emphasis in education will be able to:

- Plan a path toward teaching certification in unified science when double-majoring in education.

### Required Courses for the Emphasis in Education

In addition to the 54 credit hours of core coursework in biology, the following courses are required for the emphasis in education:

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- BIOL 1560 Essentials of Biology II (4 hours)  
and BIOL 1561 Essentials of Biology II: Lab (1 hour)
- BIOL 2010 Evolution (3 hours)
- BIOL 3010 Human Anatomy & Physiology I (3 hours)  
and BIOL 3011 Human Anatomy & Physiology I: Lab (1 hour)
- BIOL 3020 Human Anatomy & Physiology II (3 hours)  
and BIOL 3021 Human Anatomy & Physiology II: Lab (1 hour)
- BIOL 3050 Genetics (3 hours)  
and BIOL 3051 Genetics: Lab (1 hour)
- BIOL 3200 Ecology (3 hours)  
and BIOL 3201 Ecology: Lab (1 hour)
- BIOL 4400 Research Methods (3 hours)
- BIOL 4420 BA Senior Thesis (4 hours)
- CHEM 1100 General Chemistry I (3 hours)  
and CHEM 1101 General Chemistry I: Lab (1 hour)
- CHEM 1110 General Chemistry II (3 hours)  
and CHEM 1111 General Chemistry II: Lab (1 hour)
- CHEM 2100 Organic Chemistry I (3 hours)  
and CHEM 2101 Organic Chemistry I: Lab (1 hour)
- PHYS 1710 College Physics I (3 hours)  
and PHYS 1711 College Physics I: Lab (1 hour)
- PHYS 1720 College Physics II (3 hours)  
and PHYS 1721 College Physics II: Lab (1 hour)
- BIOL, CHEM or PHYS electives (*2000-level or above*) (3 hours)