

Biology BS

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About

Biology is a broad-based program designed for students interested in life sciences. The program fulfills entry requirements for medical and other allied health programs as well as for graduate work in many areas of biology and related fields. The program also provides excellent preparation for careers in health sciences, research, and/or education.

Program: [Biology](#)
Type: Bachelor of Science

PRIMARY MAJOR (122 credits)

Required Major Courses (70 credits)

The biology major requires a minimum of 70 credits in biology and cognate courses with at least five biology laboratory courses at the 3000-level and higher.

Program Notes:

- Combined BS/MS in Biology: Five-year double degree program. See departmental website for details regarding admission, requirements, the program of study, etc.
- Research opportunities: Undergraduate majors may opt to work with faculty to complete undergraduate research either informally or more formally in a senior or honors thesis project. A completed senior thesis satisfies the requirement for a capstone and an upper-level BIO lab elective.

| Course | Title | Credits |
|---------------|--|----------------|
| BIO 2105 | General Biology I | 4 |
| BIO 2106 | General Biology II | 4 |
| BIO 3351 | Genetics | 4 |
| BIO 5300 | Biology Capstone | 3 |
| | Organismal Biology Elective | 4 |
| | Ecology/Evolutionary/Population Biology Elective | 4 |
| | Cellular/Molecular Biology Elective | 4 |
| | Upper-Level BIO Lab Elective | 8 |
| | Additional BIO Elective | 2 |

Required Cognate Courses:

| Course | Title | Credits |
|---------------|--------------------------|----------------|
| CHM 1151 | General Chemistry I | 4 |
| CHM 1103 | General Chemistry Lab I | 1 |
| CHM 1152 | General Chemistry II | 4 |
| CHM 1104 | General Chemistry Lab II | 1 |
| CHM 2211 | Organic Chemistry I | 3 |
| CHM 2201 | Organic Chemistry Lab I | 1 |
| CHM 2212 | Organic Chemistry II | 3 |
| CHM 2202 | Organic Chemistry Lab II | 1 |
| MAT 1312 | Biocalculus | 4 |
| | Biology Math Elective | 3 |
| PHY 1100 | General Physics I | 3 |
| PHY 1101 | General Physics I Lab | 1 |
| PHY 1102 | General Physics II | 3 |
| PHY 1103 | General Physics II Lab | 1 |

Core Curriculum Requirements (33 credits)

Biology Majors meet the following core requirements in the major and therefore are omitted from the summary below:

- Core Math (3 cr)
- Natural Science (8 cr)

| Course | Title | Credits |
|---------------|---|----------------|
| ACS 1000 | Ancients | 3 |
| ACS 1001 | Moderns | 3 |
| THL 1000 | Faith, Reason, and Culture | 3 |
| PHI 1000 | Knowledge, Reality, Self | 3 |
| ETH 2050 | The Good Life:Eth & Cont Prob | 3 |
| | Literature and Writing Seminar (1 course) | 3 |
| | History (1 course) | 3 |
| | Social Sciences (2 courses) | 6 |
| | Fine Arts (1 course) | 3 |
| | Upper-Level Theology (1 course) | 3 |
| | Language Requirement | |
| | Diversity Requirement (2 courses) | |

Free Elective Requirement (19 credits)

Students with a Biology primary major have nineteen (19) required free elective credits.

Degree Credit Summary

- **Major Credits:** 70 credits
- **Core Credits:** 33 credits
- **Free Electives Credits:** 19 credits
- **Total Required Credits:** 122 Credits

Note: The above credit totals are based on the minimum number of required credits in each degree area. The minimum number of required credits in each area listed above must be met. Credits taken beyond the required minimum for one area may not be applied to another area.

SECONDARY MAJOR

Students who declare Biology as a **secondary major** must complete the Required Major Courses to achieve this major. Students are able to count any eligible course taken in their primary major, the core curriculum, minors, concentrations, or free electives toward these requirements.

Category Descriptions

Organismal Biology Elective

Credits: 4

Choose 1 BIO laboratory course above the 3000 level in Organismal Biology from the list below.

7205, 7905; BIO 4251 + 4252, BIO 8251 + 8252; Or any course with the Bio Organismal [BIOO] attribute of 4 or more credits may also count toward fulfillment of this requirement.

| Course | Title | Credits |
|---------------|---------------------|----------------|
| BIO 3055 | Human Physiology | 4 |
| BIO 3155 | Comparative Anatomy | 4 |
| BIO 3405 | Higher Vertebrates | 4 |
| BIO 3455 | Histology | 4 |
| BIO 3525 | Entomology | 4 |
| BIO 3905 | Vascular Plants | 4 |

Ecology/Evolutionary/Population Biology Elective

Credits: 4

Choose 1 BIO laboratory course above the 3000-level in Ecology/Evolutionary/Population Biology from those listed below.

BIO 7555, 8455, BIO 4451 + 4452, BIO 7151 + 7152, or any course with the EcoEvoPop [BIOP] attribute of four or more credits may also count toward fulfillment of this requirement.

| Course | Title | Credits |
|---------------|-----------------------|----------------|
| BIO 3015 | Animal Behavior | 4 |
| BIO 3255 | Evolutionary Ecology | 4 |
| BIO 3385 | Global Change Ecology | 4 |
| BIO 3485 | Marine Biology | 4 |
| BIO 4305 | Evolution | 4 |

Cellular/Molecular Biology Elective

Credits: 4

Choose 1 BIO laboratory course above the 3000 level in Cellular/Molecular Biology from the list below.

BIO 7905; BIO 7321 + 7322; BIO 7960 + 7962; BIO 8051 + 8052; BIO 8171 + 8172; BIO 8295, 8555, 8705; or any course with the CellMolecular [BIOC] attribute may also count toward fulfillment of this requirement.

| Course | Title | Credits |
|---------------|-----------------------|----------------|
| BIO 3595 | General Microbiology | 4 |
| BIO 4105 | Medical Microbiology | 4 |
| BIO 4205 | Cell Biology | 4 |
| BIO 4285 | Developmental Biology | 4 |
| BIO 4355 | Experimental Genetics | 4 |
| BIO 4505 | Molecular Biology | 4 |
| BIO 4605 | Neurobiology | 4 |

Upper-Level BIO Lab Elective

Credits: 8

Choose 2 additional BIO laboratory courses.

Select from: BIO 3000:9999 (with the exception of BIO 6509-6511), CHM 4603 + 4621, HON 5000, 6000.

Additional BIO Elective

Credits: 2

Two additional credits fulfilled either through a research experience or another approved course. Select from BIO 2000:9999, CHM 4611; 4622, 4621

Biology Math Elective

Credits: 3

Choose one additional MAT course from the following:

| Course | Title | Credits |
|---------------|--------------------------------|----------------|
| MAT 1314 | Modeling for the Life Sciences | 3 |
| MAT 1505 | Calculus II | 4 |
| STAT 1313 | Statistics for Life Sciences | 3 |
| STAT 4310 | Stat Methods | 3 |