BIOLOGICAL SCIENCES MAJOR

Students must also complete the Undergraduate Registration Requirement (https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement) and the degree requirements of their home school.

### Course Title
**Program Courses (10 units):**
- 8 core courses (6.02 units):
  - BIOL_SCI 215-0 Genetics and Molecular Biology
  - BIOL_SCI 217-0 Physiology
  - BIOL_SCI 219-0 Cell Biology
  - BIOL_SCI 220-0 Genetics and Molecular Processes Laboratory (0.34 units)
  - BIOL_SCI 221-0 Cellular Processes Laboratory (0.34 units)
  - BIOL_SCI 222-0 Investigative Laboratory (0.34 units)
  - BIOL_SCI 301-0 Principles of Biochemistry
  - BIOL_SCI 341-0 Population Genetics or BIOL_SCI 342-0 Evolutionary Processes
- 1 300-level BIOL SCI elective

**3 courses from one of the concentration areas:**
- Biochemistry and Biophysics (p. 1)
- Cell Biology and Physiology (p. 1)
- Molecular Genetics and Genomics (p. 1)
- Molecular Neurobiology (p. 1)
- Ecology, Evolution, and Conservation Biology (p. 1)
- Interdisciplinary Biology (p. 2)

**Related Courses**

- CHEM 132-0 General Chemistry 2
- CHEM 152-0 Accelerated General Chemistry 2
- CHEM 172-0 Advanced General Physical Chemistry
- CHEM 210-1 Organic Chemistry
- & CHEM 210-2 and Organic Chemistry
- & CHEM 212-1 and Organic Chemistry
- MATH 218-3 Single-Variable Calculus with Precalculus
- or MATH 220-2 Single-Variable Integral Calculus
- 1 statistics course - STAT 202-0 recommended

**Concentration Courses**

**Biochemistry and Biophysics**

- BIOL_SCI 323-0 Bioinformatics: Sequence and Structure Analysis
- BIOL_SCI 361-0 Protein Structure and Function
- BIOL_SCI 363-0 Biophysics

**Cell Biology and Physiology**

- BIOL_SCI 315-0 Advanced Cell Biology
- BIOL_SCI 325-0 Animal Physiology
- 1 course chosen from:
  - BIOL_SCI 319-0 Biology of Animal Viruses
  - BIOL_SCI 328-0 Microbiology
  - BIOL_SCI 344-0 Anatomy of Vertebrates
  - BIOL_SCI 355-0 Immunobiology
  - BIOL_SCI 360-0 Principles of Cell Signaling

**Molecular Genetics and Genomics**

- BIOL_SCI 390-0 Advanced Molecular Biology
- 2 courses chosen from:
  - BIOL_SCI 378-0 Functional Genomics
  - BIOL_SCI 381-0 Stem Cells and Regeneration
  - BIOL_SCI 391-0 Development and Evolution of Body Plans
  - BIOL_SCI 393-0 Biomedical Genetics
  - BIOL_SCI 395-0 Molecular Genetics
  - BIOL_SCI 396-0 Evolution and Diversity: Mushroom Genetics and Genomics

**Molecular Neurobiology**

- BIOL_SCI 302-0 Fundamentals of Neurobiology
- BIOL_SCI 303-0 Molecular Neurobiology
- 1 course chosen from:
  - BIOL_SCI 305-0 Neurobiology Laboratory
  - BIOL_SCI 307-0 Brain Structure, Function, and Evolution

**Ecology, Evolution, and Conservation Biology**

- BIOL_SCI 339-0 Critical Topics in Ecology and Conservation
- 2 courses chosen from:
  - BIOL_SCI 332-0 Conservation Genetics
  - BIOL_SCI 333-0 Plant-Animal Interactions
  - BIOL_SCI 336-0 Spring Flora
  - BIOL_SCI 337-0 Quantitative Methods for Ecology and Conservation
  - BIOL_SCI 344-0 Anatomy of Vertebrates
  - BIOL_SCI 346-0 Field Ecology

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1. The following do not count as a 300-level BIOL SCI Elective: BIOL_SCI 398-0 Tutorial in Biology; BIOL_SCI 399-0 Independent Research.

2. Number of related course units depend on chemistry and mathematics sequences taken. Laboratory components of general and organic chemistry courses and physics courses require separate registration and bear separate credit. See chemistry (https://catalogs.northwestern.edu/undergraduate/arts-sciences/chemistry) and physics (https://catalogs.northwestern.edu/undergraduate/arts-sciences/physics-astronomy) pages of this Catalog for more information.


<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tbody>
<tr>
<td>BIOL_SCI 347-0</td>
<td>Conservation Biology</td>
</tr>
<tr>
<td>BIOL_SCI 349-0</td>
<td>Plant Community Ecology</td>
</tr>
<tr>
<td>BIOL_SCI 350-0</td>
<td>Plant Evolution and Diversity Lab</td>
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**Interdisciplinary Biology**

Four 300-level BIOL SCI courses in a pre-approved topical area. (One of these courses replaces the 300 level Elective associated with any of the other Concentrations.)

**Honors in Biological Sciences**

Majors with strong academic records and an interest in pursuing honors must register for BIOL_SCI 397-0 Senior Thesis Colloquium in Winter Quarter of Senior Year.

Seniors may be recommended to the college for graduation with honors if they have completed at least 2 quarters of BIOL_SCI 397-0 Senior Thesis Colloquium, BIOL_SCI 398-0 Tutorial in Biology or BIOL_SCI 399-0 Independent Research, have written an approved honors thesis based on their independent study, and have sufficiently high grades.

For more information consult the biological sciences website and see the Honors in the Major (https://catalogs.northwestern.edu/undergraduate/arts-sciences/#academicoptionstext).