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
--- | ---
7 core courses (5.02 units): BIOL_SCI 201-0 | Molecular Biology
BIOL_SCI 202-0 | Cell Biology
BIOL_SCI 203-0 | Genetics and Evolution
BIOL_SCI 232-0 | Molecular and Cellular Processes Laboratory
BIOL_SCI 233-0 | Genetics and Molecular Processes Laboratory
BIOL_SCI 234-0 | Investigative Laboratory
BIOL_SCI 301-0 | Principles of Biochemistry

1 300-level BIOL SCI Electives

1 3 courses from one of the concentration areas:

- Molecular Genetics and Genomics (p. 1)
- Cell and Developmental Biology (p. 1)
- Human Health and Disease (p. 1)
- Ecology, Evolution, and Conservation Biology (p. 2)
- Biochemistry and Biophysics (p. 2)
- Computational and Systems Biology (p. 2)

1 Molecular Neurobiology (p. 2)
1 Interdisciplinary Biology (p. 2)

Related Courses

CHEM 110-0 | Quantitative Problem Solving in Chemistry
& CHEM 131-0 | and General Chemistry 1
& CHEM 132-0 | and General Chemistry 2
or CHEM 151-0 | Accelerated General Chemistry 1
& CHEM 152-0 | and Accelerated General Chemistry 2
or CHEM 171-0 | Advanced General Inorganic Chemistry
& CHEM 172-0 | and Advanced General Physical Chemistry
CHEM 210-1 | Organic Chemistry
& CHEM 210-2 | and Organic Chemistry
or CHEM 212-1 | Organic Chemistry
& CHEM 212-2 | 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 or BIOL_SCI 337-0 recommended

PHYSICS 130-1 | College Physics
& PHYSICS 130-2 | and College Physics
or PHYSICS 135-1 | General Physics
& PHYSICS 135-2 | and General Physics
or PHYSICS 140-1 | Fundamentals of Physics
& PHYSICS 140-2 | and Fundamentals of Physics

1 BIOL_SCI 398-0 Tutorial in Biology and BIOL_SCI 399-0 Independent Research do not count as 300-level BIOL SCI Electives. Students doing the Computational and Systems Biology concentration and take a 1.0 unit course to satisfy the coding requirement may use this in place of one of the required 300-level electives.

2 This concentration also has a programming competency requirement.

3 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.

Concentration Courses

Molecular Genetics and Genomics

Course | Title
--- | ---
Any three of the following courses:
BIOL_SCI 332-0 | Conservation Genetics
BIOL_SCI 341-0 | Population Genetics
BIOL_SCI 353-0 | Molecular Biology Laboratory
BIOL_SCI 354-0 | Quantitative Analysis of Biology
BIOL_SCI 359-0 | Quantitative Experimentation in Biology
BIOL_SCI 378-0 | Functional Genomics
BIOL_SCI 390-0 | Advanced Molecular Biology
BIOL_SCI 391-0 | Development and Evolution of Body Plans
BIOL_SCI 392-0 | Developmental Genetics Laboratory
BIOL_SCI 393-0 | Human Genomics
BIOL_SCI 395-0 | Molecular Genetics
BIOL_SCI 396-0 | Evolution and Diversity: Mushroom Genetics and Genomics

Cell and Developmental Biology

Course | Title
--- | ---
Any three of the following courses:
BIOL_SCI 315-0 | Advanced Cell Biology
BIOL_SCI 327-0 | Biology of Aging
BIOL_SCI 353-0 | Molecular Biology Laboratory
BIOL_SCI 355-0 | Immunobiology
BIOL_SCI 360-0 | Principles of Cell Signaling
BIOL_SCI 380-0 | Biology of Cancer
BIOL_SCI 381-0 | Stem Cells and Regeneration
BIOL_SCI 390-0 | Advanced Molecular Biology
BIOL_SCI 391-0 | Development and Evolution of Body Plans
BIOL_SCI 392-0 | Developmental Genetics Laboratory

Human Health and Disease

Course | Title
--- | ---
Any three of the following courses:
BIOL_SCI 302-0 | Fundamentals of Neurobiology
BIOL_SCI 319-0 | Biology of Animal Viruses
BIOL_SCI 325-0 | Animal Physiology
BIOL_SCI 327-0 | Biology of Aging
BIOL_SCI 328-0 | Microbiology
BIOL_SCI 344-0 | Anatomy of Vertebrates
BIOL_SCI 353-0 | Molecular Biology Laboratory
BIOL_SCI 355-0 | Immunobiology
BIOL_SCI 356-0 | Endocrinology
BIOL_SCI 358-0 | Advanced Physiology Laboratory
BIOL_SCI 360-0 | Principles of Cell Signaling
BIOL_SCI 380-0 | Biology of Cancer
### Ecology, Evolution, and Conservation Biology

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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BIOL_SCI 332-0</td>
<td>Conservation Genetics</td>
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<tr>
<td>BIOL_SCI 333-0</td>
<td>Plant-Animal Interactions</td>
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<tr>
<td>BIOL_SCI 334-0</td>
<td>Soils and the Environment: The Earth’s Critical Zone</td>
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<td>BIOL_SCI 336-0</td>
<td>Spring Flora</td>
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<td>BIOL_SCI 337-0</td>
<td>Biostatistics</td>
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<tr>
<td>BIOL_SCI 339-0</td>
<td>Critical Topics in Ecology and Conservation</td>
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<tr>
<td>BIOL_SCI 341-0</td>
<td>Population Genetics</td>
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<td>BIOL_SCI 342-0</td>
<td>Evolutionary Processes</td>
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<td>BIOL_SCI 344-0</td>
<td>Anatomy of Vertebrates</td>
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<td>BIOL_SCI 346-0</td>
<td>Field Ecology</td>
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<td>BIOL_SCI 347-0</td>
<td>Conservation Biology</td>
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<td>BIOL_SCI 349-0</td>
<td>Community Ecology</td>
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<tr>
<td>BIOL_SCI 350-0</td>
<td>Plant Evolution and Diversity Lab</td>
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### Biochemistry and Biophysics

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<tr>
<td>BIOL_SCI 323-0</td>
<td>Bioinformatics: Sequence and Structure Analysis</td>
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<tr>
<td>BIOL_SCI 353-0</td>
<td>Molecular Biology Laboratory</td>
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<tr>
<td>BIOL_SCI 360-0</td>
<td>Principles of Cell Signaling</td>
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<td>BIOL_SCI 361-0</td>
<td>Protein Structure and Function</td>
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<td>BIOL_SCI 363-0</td>
<td>Biophysics</td>
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### Computational and Systems Biology

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<td>BIOL_SCI 337-0</td>
<td>Biostatistics</td>
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<tr>
<td>BIOL_SCI 345-0</td>
<td>Topics in Biology</td>
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<tr>
<td>BIOL_SCI 354-0</td>
<td>Quantitative Analysis of Biology</td>
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<tr>
<td>BIOL_SCI 359-0</td>
<td>Quantitative Experimentation in Biology</td>
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<td>BIOL_SCI 378-0</td>
<td>Functional Genomics</td>
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<tr>
<td>CHEM_ENG 379-0</td>
<td>Computational Biology: Principles &amp; Applications</td>
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### Molecular Neurobiology

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<td>BIOL_SCI 303-0</td>
<td>Molecular Neurobiology</td>
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<tr>
<td>BIOL_SCI 305-0</td>
<td>Neurobiology Laboratory</td>
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<tr>
<td>BIOL_SCI 307-0</td>
<td>Brain Structure, Function, and Evolution</td>
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<tr>
<td>BIOL_SCI 325-0</td>
<td>Animal Physiology</td>
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<td>BIOL_SCI 356-0</td>
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<td>Principles of Cell Signaling</td>
</tr>
<tr>
<td>BIOL_SCI 392-0</td>
<td>Developmental Genetics Laboratory</td>
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### Interdisciplinary Biology

Customized concentration consisting of a set of three, 300-level Biol Sci courses approved by the biology program.

### 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](https://catalogs.northwestern.edu/undergraduate/arts-sciences/#academicoptionstext)).