Twin Cities Campus

Biology Minor

College of Biological Sciences - Adm

College of Biological Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2022
- Required credits in this minor: 20 to 22

Biology is the scientific exploration of the diverse world of living organisms. Today, biological research spans an almost infinite spectrum of studies from molecules to ecosystems. The field of biology has expanded enormously within the past four decades.

Within a flexible curriculum, the biology minor provides an opportunity for non-CBS students to gain a broad understanding of the fundamental nature and characteristics of living things, or explore specific areas of the field in greater depth. The minor offers great freedom for students to select coursework that is most relevant to their interests and academic goals.

The biology minor is available to non-CBS students only. Due to significant course overlap, the following majors are not eligible to complete the biology minor:
Animal Science (Science/Pre-Vet sub-plan only)
Plant Science
Biology, Society, and the Environment
Environmental Sciences, Policy, and Management (sub-plans in Environmental Science, Environmental Education and Communication)
Fisheries and Wildlife (all sub-plans)
Food Science
Medical Laboratory Sciences
Physiology
Nutrition (Nutritional Sciences sub-plan only)
Scientific and Technical Communication (sub-plan in Biological and Health Sciences)
Individually designed programs with a life sciences emphasis.
Students pursuing an individualized degree program (IDP) may be ineligible to pursue the biology minor if IDP and biology minor coursework overlap more than 3 credits. These requests will be reviewed on an individual basis.

Students are not allowed to pursue both a biology minor and a minor in another CBS discipline, with the exception of pharmacology.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Minor Requirements

To count for the biology minor, all courses must be taken A-F and receive a grade of C- or higher (or an S in Directed Research or Directed Studies). Courses that are cross-listed with CBS designators may be allowed for use in the minor.

At least 9 of the biology electives must have a CBS designator (BIOL, BIOC, COP, GCD, EEB, MICB, NSCI, PMB). Students may petition for up to 3 credits of biology-related credits from non-CBS designators (including study-abroad credits) to count toward the upper-division electives. These courses will be evaluated by the DUGS for instructional level and biological relevance.

Minor Courses

Chemistry

CHEM 1081 - Chemistry for the Life Sciences I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1061 - Chemical Principles I [PHYS] (3.0 cr)
CHEM 1065 - Chemical Principles I Laboratory [PHYS] (1.0 cr)
or CHEM 1071H - Honors Chemistry I [PHYS] (3.0 cr)
CHEM 1075H - Honors Chemistry I Laboratory [PHYS] (1.0 cr)

Introductory Biology

Students should take one Introductory Biology course or complete the Foundations of Biology lecture and lab.
Take 1 or more course(s) from the following:
•BIOL 1001 - Introductory Biology: Evolutionary and Ecological Perspectives [BIOL] (4.0 cr)
•BIOL 1003 - Evolution and Biology of Sex [BIOL] (4.0 cr)

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Information current as of March 28, 2024

- BIOL 1009 - General Biology [BIOL] (4.0 cr)
- BIOL 1012 - Human Biology: Concepts and Current Ethical Issues [BIOL, CIV] (4.0 cr)
- **Foundations of Biology**

BIOL 1951 - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
or BIOL 1951H - Foundations of Biology Lecture I for Biological Sciences Majors [BIOL] (4.0 cr)
BIOL 1961 - Foundations of Biology Lab I for Biological Sciences Majors [BIOL] (2.0 cr)

Electives

All courses for the minor must have a CBS designator (BIOL, BIOC, COP, GCD, EEB, MICB, NSCI, PMB) or be cross-listed with CBS designators.

Take 12 or more credit(s) from the following:

Take 0 - 9 credit(s) from the following:

- BIOL 2005 - Animal Diversity Laboratory (2.0 cr)
- BIOL 2007 - Marine Animal Diversity Laboratory (1.0 cr)
- BIOL 2012 *{Inactive}*(4.0 cr)
- PMB 2022 - General Botany (3.0 cr)
- VBS 2032 - General Microbiology With Laboratory (5.0 cr)
- BIOL 2003 - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)

or BIOL 2003H - Foundations of Biology for Biological Sciences Majors, Part II (3.0 cr)

- Take 3 or more credit(s) from the following:
- BIOC 3021 - Biochemistry (3.0 cr)
- BIOC 4025W - Laboratory in Biochemistry [WI] (2.0 cr)
- BIOC 4125 - Laboratory in Molecular Biology and Biotechnology (3.0 cr)
- BIOC 4325 - Laboratory in Mass Spectrometry (1.0 cr)
- BIOC 4331 - Biochemistry I: Structure, Catalysis, and Metabolism in Biological Systems (4.0 cr)
- BIOC 4332 - Biochemistry II: Molecular Mechanisms of Signal Transduction and Gene Expression (4.0 cr)
- BIOC 4521 - Introduction to Physical Biochemistry (3.0 cr)
- BIOC 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOC 4794W - Directed Research: Writing Intensive [WI] (3.0 - 5.0 cr)
- BIOC 4960 - Special Topics in Biochemistry (3.0 cr)
- BIOC 4993 - Directed Studies (1.0 - 7.0 cr)
- BIOC 4994 - Directed Research (1.0 - 7.0 cr)
- BIOL 3004 - Foundations of Biology for Biological Sciences Majors, Part II Laboratory (3.0 cr)
- BIOL 3209 - Understanding the Evolution-Creationism Controversy [CIV] (3.0 cr)
- BIOL 3211 - Physiology of Humans and Other Animals (3.0 cr)
- BIOL 3503 - Biology of Aging (2.0 cr)
- BIOL 3600 - Directed Instruction (1.0 - 2.0 cr)
- BIOL 3696 - Internship: Professional Experience in Biological Sciences (1.0 - 3.0 cr)
- BIOL 3700 - Special Topics in Biology (1.0 - 3.0 cr)
- BIOL 3961H - Communicating in the Biological Sciences (1.0 cr)
- BIOL 4201 - Teaching in the Biology Laboratory (1.0 cr)
- BIOL 4590 - Coral Reef Ecology (2.0 cr)
- BIOL 4596 *{Inactive}*(2.0 cr)
- BIOL 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- BIOL 4794W - Directed Research: Writing Intensive [WI] (3.0 - 5.0 cr)
- BIOL 4850 *{Inactive}*(1.0 - 5.0 cr)
- BIOL 4993 - Directed Studies (1.0 - 7.0 cr)
- BIOL 4994 - Directed Research (1.0 - 7.0 cr)
- BIOL 5309 - Molecular Ecology And Ecological Genomics (3.0 cr)
- BIOL 5950 - Special Topics (1.0 - 4.0 cr)
- EEB 3001 - Ecology and Society [ENV] (3.0 cr)
- EEB 3407 - Ecology (3.0 cr)
- EEB 3408W - Ecology [WI] (4.0 cr)
- EEB 3409 - Evolution (3.0 cr)
- EEB 3411 - Introduction to Animal Behavior (3.0 cr)
- EEB 3412W - Introduction to Animal Behavior, Writing Intensive [WI] (4.0 cr)
- EEB 3603 - Science, Protection, and Management of Aquatic Environments (3.0 cr)
- EEB 3807 - Ecology (4.0 cr)
- EEB 3811W - Animal Behavior in the Field [WI] (4.0 cr)
- EEB 4068 - Plant Physiological Ecology (3.0 cr)
- EEB 4129 - Mammalogy (4.0 cr)
- EEB 4134 - Introduction to Ornithology (4.0 cr)
- EEB 4329 - Primate Ecology and Social Behavior (3.0 cr)
- EEB 4330W - Animal Communication [WI] (3.0 cr)
- EEB 4609W - Ecosystem Ecology [ENV, WI] (3.0 cr)
- EEB 4611 - Biogeochemical Processes (3.0 cr)

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- EEB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- EEB 4794W - Directed Research: Writing Intensive [WI] (3.0 - 5.0 cr)
- EEB 4839 - Field Studies in Mammalogy (4.0 cr)
- EEB 4844 - Field Ornithology (3.0 cr)
- EEB 4993 - Directed Studies (1.0 - 7.0 cr)
- EEB 4994 - Directed Research (1.0 - 6.0 cr)
- EEB 5042 - Quantitative Genetics (3.0 cr)
- EEB 5053 - Ecology: Theory and Concepts (4.0 cr)
- EEB 5068 - Plant Physiological Ecology (3.0 cr)
- EEB 5221 *{Inactive}*(3.0 cr)
- EEB 5371 - Principles of Systematics (3.0 cr)
- EEB 5601 - Limnology (3.0 cr)
- EEB 5605 *{Inactive}*(2.0 cr)
- EEB 5609 - Ecosystem Ecology (3.0 cr)
- ESCI 4103W - Fossil Record of Mammals [WI] (3.0 cr)
- GCD 3033 - Principles of Cell Biology (3.0 cr)
- GCD 3485 - Bioinformatic Analysis: Introduction to the Computational Characterization of Genes and Proteins (4.0 cr)
- GCD 4025 - Cell Biology, Development & Regeneration Laboratory (3.0 cr)
- GCD 4034 - Molecular Genetics and Genomics (3.0 cr)
- GCD 4111 - Histology: Cell and Tissue Organization (4.0 cr)
- GCD 4134 *{Inactive}*(3.0 cr)
- GCD 4143 - Human Genetics and Genomics (3.0 cr)
- GCD 4151 - Molecular Biology of Cancer (3.0 cr)
- GCD 4161 - Developmental Biology (3.0 cr)
- GCD 4171 - Stem Cells in Biology and Medicine (3.0 cr)
- GCD 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- GCD 4794W - Directed Research: Writing Intensive [WI] (3.0 - 5.0 cr)
- GCD 4993 - Directed Studies (1.0 - 7.0 cr)
- GCD 4994 - Directed Research (1.0 - 7.0 cr)
- GCD 5036 - Molecular Cell Biology (3.0 cr)
- MICB 3301 - Biology of Microorganisms (5.0 cr)
- MICB 3303 - Biology of Microorganisms (without laboratory) (3.0 cr)
- MICB 4131 - Immunology (3.0 cr)
- MICB 4151 - Molecular and Genetic Bases for Microbial Diseases (3.0 cr)
- MICB 4161W - Eukaryotic Microbiology [WI] (3.0 cr)
- MICB 4171 - Biology, Genetics, and Pathogenesis of Viruses (3.0 cr)
- MICB 4215 - Advanced Laboratory: Microbial Physiology and Diversity (3.0 cr)
- MICB 4225W - Advanced Laboratory: Microbial Genetics [WI] (3.0 cr)
- MICB 4235 - Advanced Laboratory: Virology, Immunology, and Microbial Genetics (3.0 cr)
- MICB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- MICB 4794W - Directed Research: Writing Intensive [WI] (3.0 - 5.0 cr)
- MICB 4993 - Directed Studies (1.0 - 7.0 cr)
- MICB 4994 - Directed Research (1.0 - 7.0 cr)
- MICE 5035 - Personal Microbiome Analysis (3.0 cr)
- NSCI 3001W - Neuroscience and Society [CIV, WI] (4.0 cr)
- NSCI 3101 - Neurobiology I: Molecules, Cells, and Systems (3.0 cr)
- NSCI 3102W - Neurobiology II: Perception and Behavior [WI] (3.0 cr)
- NSCI 4101 - Development of the Nervous System: Cellular and Molecular Mechanisms (3.0 cr)
- NSCI 4105 - Neurobiology Laboratory I (3.0 cr)
- NSCI 4150 - Advanced Topics in Neuroscience (3.0 cr)
- NSCI 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 6.0 cr)
- NSCI 4794W - Directed Research: Writing Intensive [WI] (3.0 - 5.0 cr)
- NSCI 4993 - Directed Studies (1.0 - 7.0 cr)
- NSCI 4994 - Directed Research (1.0 - 6.0 cr)
- PMB 3002 - Plant Biology: Function (2.0 cr)
- PMB 3005W - Plant Function Laboratory [WI] (2.0 cr)
- PMB 3007W - Plant, Algal, and Fungal Diversity and Adaptation [WI] (4.0 cr)
- PMB 4111 - Microbial Physiology and Diversity (3.0 cr)
- PMB 4121 - Microbial Ecology and Applied Microbiology (3.0 cr)
- PMB 4321 - Minnesota Flora (3.0 cr)
- PMB 4511 - Flowering Plant Diversity (3.0 cr)
- PMB 4516W - Plant Cell Biology: Writing Intensive [WI] (3.0 cr)
- PMB 4601 - Topics in Plant Biochemistry (3.0 cr)
- PMB 4793W - Directed Studies: Writing Intensive [WI] (1.0 - 7.0 cr)
- PMB 4794W - Directed Research: Writing Intensive [WI] (3.0 - 5.0 cr)
- PMB 4993 - Directed Studies (1.0 - 7.0 cr)

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•PMB 4994 - Directed Research (1.0 - 7.0 cr)
•PMB 5516 *{Inactive}*(3.0 cr)
•PMB 5601 - Topics in Plant Biochemistry (3.0 cr)
•PMB 5960 *{Inactive}*(1.0 - 3.0 cr)
•ANTH 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
or EEB 3002 - Sex, Evolution, and Behavior: Examining Human Evolutionary Biology (4.0 cr)
•BIOL 4003 - Genetics (3.0 cr)
or GCD 3022 - Genetics (3.0 cr)
•BIOL 4004 - Cell Biology (3.0 cr)
or GCD 4005W - Cell Biology-Writing Intensive [WI] (4.0 cr)
•PMB 4412 - Plant Physiology and Development (3.0 cr)
or PMB 5412 - Plant Physiology and Development (3.0 cr)

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