



Biological Sciences Major

www.biology.pitt.edu

Revised: 12/2023

The biological sciences major is intended for the biology student who wishes to develop an individualized combination of courses at the advanced level. The student is free to plan a curriculum of great breadth or to choose an area of specialization not offered as a major by the department. Most of the undergraduates in our department choose the biological sciences major. This major is suitable for those planning a career in which general familiarity with biological topics is desirable, such as jobs in scientific journalism, biological and pharmaceutical supply industries, biological or medical research, scientific libraries, and museums, or in any industry where the products or byproducts have a potential biological impact. Completing the biological sciences major fulfills the basic science requirements for admission to medical, dental, and other health professional schools, and to graduate programs in biology.

Requirements for the Biological Sciences major

Biological Science courses

BIO SC 0150 Foundations of Biology 1
BIO SC 005X Foundations of Biology Lab 1
BIO SC 0160 Foundations of Biology 2
BIO SC 006X Foundations of Biology Lab 2
BIO SC 0350 Genetics
BIO SC 0370 Ecology **or** 1130 Evolution
BIO SC 1000 Biochemistry*

*Note: Students may alternately choose BIO SC 1810 (Macromolecular Structure and Function) **and** 1820 (Metabolic Pathways) in lieu of BIO SC 1000. In this case, students take twelve (12) BIO SC elective credits rather than fifteen (15) as specified in *elective courses*.

Elective courses; 15 credits

Students must complete at least fifteen BIO SC credits, which must include at least two lab courses (**or** one lab course and one field course%), **and** BIO SC 1010.

Course requirements

Higher Level course requirement: Students **MUST** take one higher level BIO SC elective course as part of their 15 credits of BIO SC electives. A higher-level course has at least one pre-requisite beyond BIO SC 0160. For example, BIO SC 1320 Population Biology requires BIO SC 0160 and BIO SC 0370 as pre-requisites. Here is a current list of higher-level courses: www.biology.pitt.edu/undergraduate/courses/biosc-courses

Lab requirement: Students must complete at least two BIO SC labs for the major and at least one of them must be taken at the Pittsburgh Campus. A Pymatuning Lab of Ecology% course can be used to satisfy one lab requirement.

% For a list of approved field courses, please contact the Biology Advising Office and check the Pymatuning Laboratory of Ecology website (www.ple.pitt.edu).

Writing (W) requirement: Students must complete at least one W-course in the major. BIO SC 1010 meets this requirement.

Co-requisite courses

Chemistry courses

CHEM 0110 General Chemistry 1
CHEM 0120 General Chemistry 2
CHEM 0310 Organic Chemistry 1
CHEM 0320 Organic Chemistry 2
CHEM 0345 Organic Chemistry Lab

Mathematics courses

MATH 0220 Analytic Geometry and Calculus 1
MATH 0230 Analytic Geometry and Calculus 2 **OR**
STAT 1000 Applied Statistical Methods

Physics courses

Choose one of the following pairs

PHYS 0110, PHYS 0111 Introduction to Physics 1, 2 **OR**
PHYS 0174, PHYS 0175 Basic Physics for Sci. & Engineering 1, 2

Frederick Honors College equivalent courses may be substituted for required or elective courses.

Grade requirements

BIO SC courses: Each required BIO SC course for the major must be completed with a grade of C or better. The elective courses for the major must also be completed with a grade of C or better. A minimum GPA of 2.0 in all departmental courses taken is required for graduation. If a C- or lower is earned in an elective course for the major but is not repeated, the course will be used to calculate the departmental GPA but will not be counted toward the 32 credits required for the major.

Co-Requisite courses: Students must earn a minimum GPA of 2.0 in their co-requisite courses. A passing grade of C- or lower in a co-requisite course can be accepted if balanced by a higher grade in another co-requisite course so that the co-requisite GPA is 2.0 or higher.

Exceptions: CHEM 0110 and CHEM 0120 have to be C or better to declare the major; PHYS 0110/0174 has to be C or better to enroll in PHYS 0111/0175; MATH 0220 has to be C or better to enroll in MATH 0230.

Satisfactory/No Credit option

One BIOSC course may be taken on an S/NC basis.

Restrictions

All BIOSC courses at the 0800-level are designed for non-majors. These courses do not count toward the major. Undergraduate teaching assistant (BIOSC 1690), independent study (BIOSC 1901), and undergraduate research credits (e.g., BIOSC 1903) do not count toward the major, though the department encourages students to pursue these opportunities. Human anatomy for the health professions (BIOSC 0041 and 0042) do not count toward the major.

Note about biochemistry options: BIOSC 1000 and 1810 are considered course repeats, and you cannot take both for credit.

Note about physiology: Students may take only one physiology course and count it toward the major: Human Physiology (BIOSC 1250/NROSCI 1250) or Animal Physiology.

Note about animal behavior: Animal Behavior (BIOSC 1440) and Behavioral Ecology (BIOSC 1140) are considered course repeats, and you cannot take both for credit.

Honors

A Dietrich School student may achieve honors in the Department of Biological Sciences by meeting academic and research requirements specified here:

www.biology.pitt.edu/undergraduate/advising-and-support/honors

Advising

The Biological Sciences Departmental Advisors are happy to meet with undeclared students, please make an appointment using Navigate Student. Students will officially be advised by the Bio Advising Team after declaring a major offered in the department. After declaring you will receive a welcome email with instructions by either late September or late January (depending on declaration date). Advising e-mail:

BioAdv@Pitt.edu

The Bio Advising Team supports and enriches the academic experience of students by helping with curricular decisions, as well as providing information and guidance on extracurricular options, career paths, and post-graduate plans. Information about our advising team can be found:

<https://www.biology.pitt.edu/undergraduate/advising-and-support/advisors>

Declaring the major: Before students officially declare the Biological Sciences major, they must have completed BIOSC 0150, 0160 and CHEM 0110, 0120 with a grade of C (not C-) or better and cannot be in violation of [DSAS repeat rules](#). Transfer students who have finished these requirements prior to admission to the University of Pittsburgh are asked to complete one term of course work, including at least one BIOSC course that counts toward the major, before declaring.

Other Biological Sciences Department major options

Biochemistry Computational Biology
Ecology and Evolution Microbiology
Molecular Biology

Checklist for the Biological Sciences major

Biological Science courses

_____ BIOSC 0150 or 0155 (UHC)
_____ BIOSC 005X
_____ BIOSC 0160 or 0165 (UHC)
_____ BIOSC 006X
_____ BIOSC 0350
_____ BIOSC 0370 or 1130
_____ BIOSC 1000 or (1810 and 1820)

Elective courses (15 credits)

_____ BIOSC _____
_____ BIOSC _____
_____ BIOSC _____
_____ BIOSC _____ (Higher Level)
_____ BIOSC _____ (Lab Course)
_____ BIOSC _____ (Lab or Field Course)
_____ BIOSC 1010 (Writing-intensive)

Up to six credits of the following approved ANTH, NROSCI, and CHEM courses can be used to satisfy BIOSC elective requirements.

ANTH 1601 Structure and Function
ANTH 1603 Human Origins
ANTH 1605 Primate Anatomy
NROSCI 1000 Introduction to Neuroscience
NROSCI 1012 Neurophysiology
NROSCI 1017 Synaptic Transmission
CHEM 1830 Synthetic Biology

Co-Requisite courses

Chemistry courses

_____ CHEM 0110 or 0710 (UHC)
_____ CHEM 0120 or 0720 (UHC)
_____ CHEM 0310 or 0730 (UHC)
_____ CHEM 0320 or 0740 (UHC)
_____ CHEM 0345

Mathematics courses

_____ MATH 0220
_____ MATH 0230 or MATH 0235 or STAT 1000

Physics courses

_____ PHYS 0110 or 0174 or 0475
_____ PHYS 0111 or 0175 or 0476

Note: While not required for the major, PHYS 0212 Introduction to Laboratory Physics or PHYS 0219 Basic Laboratory Physics for Science & Engineering are useful for graduate study in certain sciences and is required for admission to many medical and dental schools.