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 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.

**Required courses for the Biological Sciences major**

**Biological Science courses**
- BIOSC 0150 Foundations of Biology 1
- BIOSC 0050 Foundations of Biology Lab 1
- BIOSC 0160 Foundations of Biology 2
- BIOSC 0060 Foundations of Biology Lab 2
- BIOSC 0350 Genetics
- BIOSC 0370 Ecology or 1130 Evolution
- BIOSC 1000 Biochemistry*

*Note: Students may choose the alternate sequence BIOSC 1810 (Macromolecular Structure and Function) and 1820 (Metabolic Pathways) in lieu of BIOSC 1000. In this case, students take twelve (12) BIOSC elective credits rather than fifteen (15) as specified in elective 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 Science & Engineering 1, 2

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

**Elective courses**

Fifteen BIOSC credits, which must include at least two lab courses, or one lab course and one field course. BIOSC 1690, 1901, 1903, 1904 do not count toward these credits.

*Note: Any University Honors College (UHC) equivalents to required courses or elective courses are also acceptable.

**Course requirements**

**Higher Level course requirement**

Students who declared after September 14, 2009 MUST take one higher level BIOSC elective course as part of their 15 credits of BIOSC electives. A higher level course has at least one pre-requisite beyond BIOSC 0160. For example, BIOSC 1320 Population Biology requires BIOSC 0160 and BIOSC 0370 as pre-requisites. Contact a Biology Advisor for a list of higher level courses.

**Lab requirement:** Students must complete at least two BIOSC labs for the major and at least one of them must be taken at the Pittsburgh Campus. A Pymatuning (PLE) course can count as a lab.

**Writing (W) requirement:** Students must complete at least one W-course in the major.

**Grade requirements**

**BIOSC courses:** Each required BIOSC 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-Requirement courses:** Students must also earn a minimum GPA of 2.0 in the co-requisite Chemistry, Mathematics, and Physics courses. A passing grade of C- or lower in a co-requisite course can be accepted, except for CHEM 0110 and CHEM 0120, if balanced by a higher grade in another co-requisite course so that the co-requisite GPA is 2.0 or higher. Students must pass CHEM 0110 and CHEM 0120 with a grade of C (not C-) or better for the major.
Related area: Chemistry satisfies the related area requirement for the Biological Sciences major and the chemistry minor as long as half of the chemistry credits are from the University of Pittsburgh.

Satisfactory/Audit option: One BIOSC course may be taken on an S/NC basis.

Advising: The Biological Sciences Departmental Advisors are available to discuss the major and answer your questions. You are welcome and encouraged to stop by the Biological Sciences Advising Office, A258 Langley Hall, to peruse the handouts or meet with an advisor even before declaring a major. They love visitors! After declaring a major in Biological Sciences, students will officially be advised by the Biological Sciences Advising Office.

Advisors
Christine Berliner  Ellen Kelsey  Kevin Wu
LANGY A258  LANGY A258  LANGY A258
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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. 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 major options
Bioinformatics
Ecology and Evolution
Microbiology
Molecular Biology

Information about these majors is available in the Biological Sciences Advising Office.

Checklist for the Biological Sciences major

Biological Science courses
- BIOSC 0150 or 0715
- BIOSC 0050 or 0057
- BIOSC 0160 or 0716
- BIOSC 0060 or 0067
- BIOSC 0350 or 0355
- BIOSC 0370 or 1130
- BIOSC 1000 or 1810 and 1820

Chemistry courses
- CHEM 0110 or 0710
- CHEM 0120 or 0720
- CHEM 0310 or 0730
- CHEM 0320 or 0740
- 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

Elective courses (15 credits)
- BIOSC ______
- BIOSC ______
- BIOSC ______ (Higher Level)
- BIOSC ______ (Lab Course)
- BIOSC ______ (Lab or Field Course or BIOSC 1545)
- BIOSC ______ (Writing-intensive)

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

Anthropology
ANTH 1601 Structure and Function
ANTH 1602 Human Skeletal Analysis
ANTH 1603 Human Origins
ANTH 1605 Primate Anatomy
ANTH 1611 Evolutionary Theory

Neuroscience
NROSCI 1000 Introduction to Neuroscience
NROSCI 1012 Neurophysiology
NROSCI 1017 Synaptic Transmission

Note about Physiology: Students may take only one of the following courses towards any major in the Biological Sciences Dept.

BIOSC/NROSCI 1070 – UHC Human Physiology
BIOSC/NROSCI 1250 – Human Physiology
BIOSC 1080 – Human Anatomy and Physiology
BIOSC 1870 – Animal Physiology