

# Courses that Satisfy the Computer Science Natural Science Elective Requirement

**Important Note: This information on this page is UNOFFICIAL.** If any information on this page contradicts anything in the official University catalog, the catalog information takes precedence. Always check with your advisor before making any final course decisions. Department, College, and University policies change over time, and your advisor should be able to give you the latest information or tell you who to ask about policy issues.

Students must pass at least 12 credits of approved natural science courses (see below for lists of approved courses). Two 3-credit natural science courses must be taken with their companion 1-credit labs. The remaining 4 credits can be satisfied **either**

- by taking a third 3-credit natural science course with its companion 1-credit lab, or
- by taking two 3-credit natural science courses without their companion labs.

However, the Computer Science faculty recommends that students always take the companion lab for any natural science course when a lab is available.

**Special Note posted September 8, 2015:** As of this date, the above information conflicts slightly with what is posted on the corresponding University Catalog page. We are working to get the Catalog page corrected, but please note that this is a unique situation in which **the information above takes precedence over that on the University website.**

Natural science electives must come from one of the four natural science departments in the College of Sciences. These are:

- Biological Sciences
- Chemistry
- Environmental, Earth, and Atmospheric Sciences
- Physics and Applied Physics

The courses in these departments that fulfill the CS natural science elective requirement are those that are classified as either **required or elective courses for the majors in the respective departments**. In general, **courses that satisfy GenEd technical elective requirements for non-science majors do *not* satisfy the CS natural science elective requirement.** Such unallowed courses are ones whose University catalog descriptions contain the statement: "This course satisfies the GenEd science requirement, but not specific science requirements for majors in the Division of Science." However, there are some exceptions. See the specific course recommendations below.

In **Biological Sciences**, the following courses are recommended for satisfying this requirement.

- BIOL.1110 Principles of Biology I (lecture) and BIOL.1170L Experimental Biology I (lab) - Fall offering
- BIOL.1102 Principles of Biology II (lecture) and BIOL.1180L Experimental Biology II (lab) - Spring offering
- LIFE.1010 and LIFE.1030L Life Sciences I (lecture & lab)
- LIFE.1020 and LIFE.1040L Life Sciences II (lecture & lab)

most higher level courses numbered BIOL.xxxx also satisfy this requirement

- see the [Undergraduate Coordinator](#) before taking a course to confirm that it will count as a natural science elective

**Note:** BIOL.1110 and BIOL.1120 Principles of Biology I and II are required for Biology majors and should be taken by students with a serious interest in Biology. Otherwise, students should take Life Sciences I and II. *No students should take both the Principles of Biology and Life Sciences courses.*

In **Chemistry**, the following courses are recommended for satisfying this requirement.

- CHEM.1210 and CHEM.1230 Chemistry I (lecture & lab) - Fall offering
- CHEM.1220 and CHEM.1240 Chemistry II (lecture & lab) - Spring offering

most higher level courses numbered CHEM.xxxx also satisfy this requirement

- see the [Undergraduate Coordinator](#) before taking a course to confirm that it will count as a natural science elective

**Note:** The following Chemistry courses **do NOT** satisfy the natural science requirement.

- CHEM.1010 Applied Chemistry for Non-Scientists (GenEd)
- CHEM.1020 Forensic Science for the Non-Scientist (GenEd)

In **Environmental, Earth, and Atmospheric Sciences**, the following courses are recommended for satisfying this requirement.

- ENVI.2010 Earth Systems: Geosphere + ENVI.2030L Earth Systems: Geosphere Laboratory
- ENVI.2020 Earth Systems: Atmosphere and Oceans + ENVI.2040L Earth Systems: Atmosphere and Oceans Laboratory
- GEOL.2150 Forensic Geology (listed as a GenEd, but **does** satisfy the natural science requirement)
- GEOL.3140 Hydrogeology - Spring offering
- GEOL.3150 Environmental Geochemistry (4 credits) - Fall offering
- ENVI.2020 Earth Systems: Atmosphere and Oceans, or ATMO.1410 Weather & Climate + ATMO.1430L Weather & Climate Lab (but not both, as they are Anti-reqs)

**Note:** The following Environmental, Earth, and Atmospheric Sciences courses **do NOT** satisfy the natural science requirement.

- **ATMO.1200 The Nature of Science (GenEd)**
- **ENVI.1040 and ENVI.1050 Conservation & Environmental Concerns (lecture & lab, GenEd)**
- **ENVI.1150 and ENVI.1170 Astronomy (lecture & lab, GenEd)**
- **GEOL.1010 and GEOL.1030 General Geology (lecture & lab, GenEd)**

In **Physics**, the following courses are recommended for satisfying this requirement.

- PHYS.1410 and PHYS.1410L Physics I (lecture & lab)
- PHYS.1440 and PHYS.1440L Physics II (lecture & lab)
- PHYS.1210 and 96.1210L Exploring the Universe (lecture & lab)

most higher level courses numbered PHYS.xxxx and PHYS.xxxxL also satisfy this requirement

- see the [Undergraduate Coordinator](#) before taking a course to confirm that it will count as a natural science elective

**Note:** The following Physics courses **do NOT** satisfy the natural Science requirement.

- **PHYS.1010 and 96.1010L Introductory Physics I (lecture & lab, GenEd)**
- **PHYS.1030 and 96.1030L General Physics I (lecture & lab)**
- **PHYS.1040 and 96.1040L General Physics II (lecture & lab, GenEd)**

For the latest course information, please visit the [UMass Lowell on-line Academic Catalog](#).