

Requirements for the B.S. Degree in *EARTH SYSTEMS*

The Earth Systems degree provides students with a holistic understanding of the Earth's geosphere, biosphere, hydrosphere, and cryosphere, as well as the impact of human activities on these systems. The degree is suitable for students interested in the interface of Earth Science and related fields, and in issues related to the long-term sustainability of the planet.

Requirements for the B.S. Degree

A. *Supporting Sciences* (8 courses listed here or their approved equivalents; 28-32 credits)

1. Two courses in Biology:
Select from: BIOLOGY 108, 110, 280, PLSOILIN 102, 106, 115, ENVIRSCI 101, GEO-SCI 107, 190BH
2. Two courses in Calculus: MATH 127-128 or 131-132 or 135-136
3. Two courses in Physics: PHYSICS 131-132 or 151-152
4. Two courses in General Chemistry: CHEM 111-112

B. *Earth Systems Core Courses* (8 courses listed here or their approved equivalents; 28-30 credits)

1. Choose one of the following four introductory Geoscience courses:
GEO-SCI 100* Global Environmental Change
GEO-SCI 101 The Earth (includes the lab component *Experiencing Geology*)
GEO-SCI 103* Introductory Oceanography
GEO-SCI 105* Dynamic Earth

*students not taking GEO-SCI 101 must also enroll in GEO-SCI 131 *Experiencing Geology* (1 credit)

2. GEO-SCI 102 The Human Landscape
3. GEO-SCI 231 Introduction to Field Methods -- (An alternative field-based course or field-based experiences may be accepted in lieu of GEO-SCI 231 in consultation with your major advisor.)
4. GEO-SCI 201 History of the Earth
5. GEO-SCI 354 Climatology

6. Choose one of the following:
 - GEO-SCI 420 Human Impact on the Natural Environment
 - GEO-SCI 458 Climatic Change

7. Choose one of the following courses in Geochemistry:
 - GEO-SCI 415 Introduction to Geochemistry
 - GEO-SCI 597 Isotope Geochemistry
 - GEO-SCI 517 Sedimentary Geochemistry
 - GEO-SCI 519 Aqueous and Environmental Geochemistry
 - GEO-SCI 615 Organic and Biogeochemistry

8. Choose one of the following courses in climatology, oceanography, hydrology, and spatial analysis:
 - GEO-SCI 587 Hydrogeology
 - GEO-SCI 591C Climate and Environmental Modeling
 - GEO-SCI 426 Remote Sensing and Image Analysis
 - GEO-SCI 468 Geographical Information Systems and Spatial Analysis
 - GEO-SCI 595D Physical Oceanography

C. *Earth Systems Electives (12 credits)*

Students should select at least 12 credits of additional upper-division (300 and higher) courses in Geosciences (possibly including additional courses from B-6, B-7, and B-8 above), Biology, Computer Science, Environmental Sciences, Forestry, Mathematics, Microbiology, Natural Resources Conservation, Physics, Plant Soil and Insect Sciences, Political Science, Resource Economics, Resource Planning, Statistics, and Wildlife and Fisheries Conservation. Elective courses should broaden knowledge in one of more areas of Earth Systems and must be selected in consultation with an advisor.

D. *University Requirements for Major (3 credits; 6 credits beginning 2012-2013)*

1. Junior Year Writing Requirement (3 credits):
 - NATSCI 397A CNS Junior Writing
2. Beginning 2012-2013: Integrative Experience (3 credits):
 - GEO-SCI 494LI Living on Earth

Inquiries about the *Earth Systems* program should be directed to:

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