Students in Geology-Biology apply principles from geology, biology, chemistry, and physics to understand how major components of the Earth, such as its atmosphere and oceans, interact with and sustain life in the past, present, and into the future. Many courses emphasize climate change, environmental pollution, and biogeochemistry; so this concentration is a good one for students interested in studying the environment. Other areas emphasize Earth history, including climate change, extinction events, and using the Earth's sedimentary record to investigate environmental change.

Both AB and ScB degrees are offered; the ScB requires more (19) courses, including a research course. DEEPS provides a highly collaborative learning environment that emphasizes process-oriented, hands-on approaches in the classroom, in labs and on field trips. There are many opportunities for students to do research working with faculty, graduate students, and researchers. The degree builds students' skills in critical thinking, written and oral communication, data analysis and modeling, and applying systems approaches to problem solving, which prepare students for a wide variety of careers.

**Standard program for the A.B. degree**

This program provides a broad introduction to the geologic and biologic processes that shape the Earth and our environment. It is recommended for students seeking a liberal education and a general understanding of Earth processes, including the evolution of climate and the environment, global environmental change and Earth history. The program prepares students for careers in environmental science, geology, ecology, oceanography, and global change.

**Basic supporting science courses**

- **BIOL 0200** The Foundation of Living Systems (or equivalent) 1
- **CHEM 0330** Equilibrium, Rate, and Structure (or equivalent) 1

Two courses to build quantitative skills:

- **APMA 0330** Methods of Applied Mathematics I (or higher) 2
- **BIOL 0495** Statistical Analysis of Biological Data
- **CSCI 0170** Computer Science: An Integrated Introduction (or higher)
- **ENGN 0404** Dynamics and Vibrations (or higher)
- **MATH 0090** Introductory Calculus, Part I (or higher)
- **PHYS 0050** Foundations of Mechanics (or higher)

**Ten Concentration courses**

- **EEPS 0220** Earth Processes 1
- **EEPS 0240** Earth: Evolution of a Habitable Planet 1
- **EEPS 1240** Stratigraphy and Sedimentation 1
- **EEPS 0230** Geochemistry: Earth and Planetary Materials and Processes 1
  or **EEPS 0250** Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction 1

Select three upper level Biology courses such as:

- **BIOL 0410** Invertebrate Zoology 3
- **BIOL 0420** Principles of Ecology
- **BIOL 0430** The Evolution of Plant Diversity
- **BIOL 0480** Evolutionary Biology
- **BIOL 1470** Conservation Biology
- **BIOL 1480** Terrestrial Biogeochemistry and the Functioning of Ecosystems

Three upper level EEPS courses such as:

- **EEPS 0850** Weather and Climate
- **EEPS 1120** Paleoceanography

**Standard program for the Sc.B. degree**

This program is recommended for students interested in graduate study and careers in the Earth, Environmental, or Biological Sciences. It is relevant for students interested in environmental science, paleoclimate, Earth systems science, biogeochemistry, oceanography, or paleobiology.

**Five basic supporting science courses**

- **BIOL 0200** The Foundation of Living Systems (or equivalent) 1
- **CHEM 0330** Equilibrium, Rate, and Structure (or equivalent) 1

Three courses to build quantitative skills:

- **APMA 0330** Methods of Applied Mathematics I (or higher) 3
- **BIOL 0495** Statistical Analysis of Biological Data
- **CSCI 0170** Computer Science: An Integrated Introduction (or higher)
- **ENGN 0404** Dynamics and Vibrations (or higher)
- **MATH 0090** Introductory Calculus, Part I (or higher)
- **PHYS 0050** Foundations of Mechanics (or higher)

**Fourteen (14) concentration courses**

- **EEPS 0220** Earth Processes 1
- **EEPS 0240** Earth: Evolution of a Habitable Planet 1
- **EEPS 1240** Stratigraphy and Sedimentation 1
  or **EEPS 0250** Computational Approaches to Modelling and Quantitative Analysis in Natural Sciences: An Introduction 1

Three upper level BIOL courses such as:

- **BIOL 0410** Invertebrate Zoology 3
- **BIOL 0420** Principles of Ecology
- **BIOL 0430** The Evolution of Plant Diversity
- **BIOL 0480** Evolutionary Biology
- **BIOL 1470** Conservation Biology
- **BIOL 1480** Terrestrial Biogeochemistry and the Functioning of Ecosystems

Three upper level EEPS courses such as:

- **EEPS 0850** Weather and Climate
- **EEPS 1120** Paleoceanography
- **EEPS 1130** Ocean Biogeochemical Cycles
- **EEPS 1150** Limnology: The Study of Lakes
- **EEPS 1310** Global Water Cycle
- **EEPS 1320** Introduction to Geographic Information Systems for Environmental Applications
- **EEPS 1330** Global Environmental Remote Sensing
- **EEPS 1370** Environmental Geochemistry
- **EEPS 1430** Principles of Planetary Climate
- **EEPS 1470** Conservation Biology
- **EEPS 1480** Terrestrial Biogeochemistry and the Functioning of Ecosystems
- **EEPS 1970** Individual Study of Geologic Problems

**Total Credits** 14
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