

# Geological Sciences - B.S.

College of  
Arts and Sciences

The earth and environmental sciences encompass a wide variety of studies of our planet and nearby parts of the solar system, including considerations of our planet's origin, as well as its composition, structure, prehistoric life, internal and surficial processes, and history. These studies have important implications for understanding how our planet functions and have numerous applications in the discovery and use of mineral, energy, and water resources; in the protection and restoration of the environment; and in planning for the impacts of natural hazards (earthquakes, landslides, etc.) and climate change on global societal development. Students undertake the study of earth and environmental sciences in the classroom, laboratory, and field.

Students in earth and environmental sciences earn the Bachelor of Science or Bachelor of Arts degree with a major in Geological Sciences. The B.S. program is designed for students who plan a career as a professional geologist or who plan to attend graduate school. The B.A. program is designed for students planning a career in public policy relating to earth science and environmental issues, earth-science education, business (environmental consulting), environmental law, or environmental medicine.

## 120 hours (minimum)

Any student earning a Bachelor of Science (BS) degree must complete a minimum of 60 hours in natural, physical, mathematical, and computer science. A complete description of College requirements for a Bachelor of Science degree, including a specific listing of courses applicable to the 60-hour requirement, see the *Arts and Sciences* section of the 2013-2014 *UK Bulletin*.

### UK Core Requirements

See the *UK Core* section of the 2013-2014 *Undergraduate Bulletin* for the complete UK Core requirements. The courses listed below are (a) recommended by the college, or (b) required courses that also fulfill UK Core areas. Students should work closely with their advisor to complete the UK Core requirements.

#### I. Intellectual Inquiry in Arts and Creativity

Choose one course from approved list ..... 3

#### II. Intellectual Inquiry in the Humanities

Choose one course from approved list ..... 3

#### III. Intellectual Inquiry in the Social Sciences

Choose one course from approved list ..... 3

#### IV. Intellectual Inquiry in the Natural, Physical, and Mathematical Sciences

Fulfilled by Premajor Requirement – CHE 105/CHE 111

#### V. Composition and Communication I

CIS/WRD 110 Composition and Communication I ..... 3

#### VI. Composition and Communication II

CIS/WRD 111 Composition and Communication II ..... 3

#### VII. Quantitative Foundations

Fulfilled by Premajor Requirement – MA 113

#### IX. Community, Culture and Citizenship in the USA

Choose one course from approved list ..... 3

#### X. Global Dynamics

Choose one course from approved list ..... 3

**UK Core hours** ..... **24**

#### Graduation Writing Requirement

EES 490 Earth Dynamics ..... 3

**Graduation Requirement hours:** ..... **3**

#### College Requirements

I. Foreign Language (*placement exam recommended*) ..... 0-14

II. Disciplinary Requirements

a. Natural Science (*completed by Major Requirements*)

b. Social Science ..... 3

c. Humanities ..... 3

III. Laboratory or Field Work (*completed by Premajor Requirement*)

IV. Electives ..... 6

**College Requirement hours:** ..... **12-26**

#### Premajor Requirements

\*MA 113 Calculus I ..... 4

MA 114 Calculus II ..... 4

\*CHE 105 General College Chemistry I ..... 4

\*CHE 111 Laboratory to Accompany General Chemistry I ..... 1

CHE 107 General College Chemistry II ..... 3

CHE 113 Laboratory to Accompany General Chemistry II ..... 2

EES 220 Principles of Physical Geology ..... 4

EES 230 Fundamentals of Geology I ..... 3

EES 235 Fundamentals of Geology II ..... 3

EES 295 Geoscience Orientation ..... 1

**Premajor hours:** ..... **29**

#### Major Requirements

##### Major Core Requirements

EES 323 Field Work in Regional Geology ..... 6

EES 360 Mineralogy ..... 4

EES 420G Structural Geology ..... 4

EES 450G Sedimentary Geology ..... 4

EES 461 Igneous and Metamorphic Petrology ..... 4

EES 490 Earth Dynamics ..... 3

**Major Core hours:** ..... **25**

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## Other Course Work Required for the Major

### From the Major Department:

**Elective I** ..... 6  
Choose six hours of EES courses at the 400+ level, not to include EES 495 or 496

**Elective II** ..... 6  
Choose six additional hours of 300+ EES or related courses

### From the Physics Department

\*PHY 211/213 General Physics **or**

\*PHY 231/232/241/242 General University Physics ..... 10

**NOTE:** Fourteen hours at the 200 level or higher must be completed outside Geological Sciences. Partial fulfillment of this requirement can be completed by the PHY Sequence and EES Elective II Requirements ..... 0-4

**Other Major hours:** ..... **0-18**

**Total Minimum hours  
Required for Degree** ..... **120**

*\*Course used towards completion of a UK Core Requirement or Graduation Writing Requirement.*