

## Foundations Earth Science

### **COURSE DESCRIPTION:**

This introductory Earth Science course incorporates the body of knowledge and facts accumulated from people's observations of the Earth around them and the skies above them. This observed information of the earth has evolved over centuries into the branch of science known as earth science. Earth science has several different branches of study: the solid earth (geology), the earth's waters (hydrology and oceanography), the earth's atmosphere (meteorology), and the universe beyond earth (astronomy). Using careful observation and experimentation, students will learn to effectively analyze and evaluate the earth's natural phenomena and their causes, as well as, its relationship in the universe by focusing on the four major areas of study.

The course content has been appropriately chunked into smaller topics to increase retention and expand opportunities for assessment. With each topic, quizzes are presented to the student. Audio readings are included with every portion of content, allowing auditory learners the opportunity to engage with the course. Test pools and randomized test questions are utilized in quizzes as well as unit exams, ensuring that students taking the course will not be presented with the same exams. Additionally, the course includes additional practice activities (such as cloze activities), as well as pre-topic vocabulary lists, that introduce key vocabulary in English and in Spanish.

**PREREQUISITES:** None

**COURSE LENGTH:** Two semesters

**REQUIRED TEXT:** None

### **COURSE OUTLINE:**

#### **Semester 1**

##### **GEOLOGY**

Overview of Planet Earth in Terms of Earth Science

- What is earth science?
- Explore the branches of earth science
- Understand the importance of earth science
- Earth as a series of interrelated systems
- Think like an earth scientist (scientific method)

Minerals, Rocks, and the Rock Cycle

- Minerals and Basic Atomic Structure
- Rock-Forming Minerals
- Igneous, Sedimentary, and Metamorphic Rocks
- Rock Cycle and Earth's Systems

Plate Tectonics, Deformation of Earth's Crust, Earthquakes, and Volcanoes

- Plate Tectonics
- Folds, Faults, and Rock Deformation
- Earthquakes
- Volcanoes

## **Foundations Earth Science (continued)**

### **COURSE OUTLINE (continued):**

Weathering, Erosion, and Deposition; Glaciers and Deserts

- Weathering
- Erosion
- Deposition
- Glaciers
- Deserts

Geologic Time, Relative Age Dating, and Isotopic Dating

- Geologic Time
- Relative Age Dating
- Isotopic Dating

### **Semester 2**

#### **HYDROLOGY & OCEANOGRAPHY**

Hydrology

- Rivers, Streams, and Floods
- Groundwater

Oceanography

- Ocean Basins
- Waves, Currents, and Tides
- Coastal Processes

#### **METEOROLOGY**

The Atmosphere, Weather, and Climate

- The Atmosphere
- Weather Factors and Patterns
- Climate Factors and Zones
- Climate Change

#### **ASTRONOMY**

The Earth, Moon, Sun, Solar System, Stars, Galaxies, and the Universe

- The Earth, Moon, and Sun
- The Solar System
- Stars, Galaxies, and the Universe