

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.

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

Weathering, Erosion, and Deposition; Glaciers and Deserts

- Weathering
- Erosion
- Deposition
- Glaciers
- Deserts

Earth Science (continued)

COURSE OUTLINE (continued):

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