

Earth Science - Enhanced

SCI0900

Course Description

God designed the Earth with unique properties and characteristics. He created a delicate balance amongst the systems of the Earth, the solar system, and the universe. Emphasis will be placed on understanding the Earth's systems, their interrelationships with each other, and man's effect on the Earth. Students will be given the opportunity to explore rocks and minerals, geology, Earth's interior, Earth's geologic history, plate tectonics, volcanoes, earthquakes, weather, storms, climate, oceans, the solar system, and stars and galaxies. The students will be given the challenge to explore the rationale behind secular, old earth, and young earth science in order to be more effective at presenting the Gospel scientifically. The course is a rigorous, multimedia and laboratory-based science course that will require supplies for the hands-on labs.

Rationale

Earth Science allows the students an opportunity to explore the Earth and its systems. Knowledge of the way the Earth changes over time gives students the understanding of the delicate balance on the Earth and the need to preserve it. It allows them the opportunity to explore their surroundings and view their world through different eyes. The study of the Earth will allow students a deeper understanding of the Earth's place in the solar system and the galaxy to prepare for a greater tomorrow. Earth Science also opens the students up to new technologies that are being utilized every day in this study of our planet.

Prerequisite

None

Biblical Integration Outcomes

- A. The student will investigate a biblical perspective on geological history and the origin of the Earth and universe.
- B. The student will investigate geological evidences which confirm the reality of biblical history related to the Flood of Noah in scripture.

Measurable Learning Outcomes

- A. The student will plan and conduct investigations which include measurement, technology, charts, cartography, variables, and applications to Earth Science.

- B. The student will demonstrate an understanding of the nature of science and scientific reasoning, logic, and inference.
- C. The student will investigate and understand the characteristics of Earth and the solar system.
- D. The student will investigate and understand how to identify major rock-forming and ore minerals based on physical and chemical properties.
- E. The student will investigate and understand the rock cycle as it relates to the origin and transformation of rock types and how to identify common rock types based on mineral composition and textures.
- F. The student will investigate and understand the differences between renewable and nonrenewable resources.
- G. The student will investigate and understand geologic processes including plate tectonics.
- H. The student will investigate and understand how freshwater resources are influenced by geologic processes and the activities of humans.
- I. The student will investigate and understand that many aspects of the geologic history can be inferred by studying rocks and fossils.
- J. The student will investigate and understand that oceans are complex, interactive physical, chemical, and biological systems and are subject to long- and short-term variations.
- K. The student will investigate and understand that energy transfer between the sun and Earth and its atmosphere drives weather and climate on Earth.

Enhanced Courses

LUOA Enhanced Courses provide additional student support through increased interaction and communication with the course instructor. Interaction takes place through:

- Weekly live teaching sessions
- Q&A conference with teacher before each test
- Discussion boards

Participation Grade

Students are given a participation grade based on attendance during the teacher live sessions and participation in discussion boards. For full year courses, there are 20 teacher live sessions and four discussion boards. Semester courses have 10 live sessions and two discussion boards. Participation grades are given at the end of each semester and count as a Tier 3 assignment.

Semester Grade Participation:

Grade	Participation
A	Attended 8–10 teacher live sessions, participated in two discussion boards
B	Attended 6–7 teacher live sessions, participated in two discussion boards
C	Attended 5 teacher live sessions, participated in two discussion boards
D	Attended 3–4 teacher live sessions, participated in one discussion board
F	Attended 0–3 live teacher sessions, participated in zero discussion boards

Late Policy

In order to take full advantage of our Enhanced courses, it is important that students stay on track with their scheduled assignments so that they benefit from the discussions with their teacher and classmates. Meeting deadlines is a skill that will aid students in their high school classes and beyond. Enhanced courses offer LUOA students help in developing this skill by requiring assignments to be turned in by the due date in order to receive full-credit. For each day the assignment is not submitted, 5 percent will be deducted from the assignment grade with a maximum deduction of 20 percent.

** Exceptions to this late policy may be considered in cases of illness, travel, or unforeseen events. Students will need to contact their teacher to seek approval for any exception.*

Semester and Final Exams Proctored

The proctoring of the semester and/or final exam by a parent/guardian or other adult is required for Enhanced Courses. A form is provided in the course that the proctor will sign and complete. The student will then upload the form into an assignment before being able to begin the exam.

Course Materials

See LUOA's [Systems Requirements](#) for computer specifications necessary to operate LUOA curriculum. Also view [Digital Literacy Requirements](#) for LUOA's expectation of users' digital literacy.

This course contains additional physical materials. See the materials page toward the end of this syllabus for a listing of course materials.

- Note: Embedded YouTube videos may be utilized to supplement LUOA curriculum. YouTube videos are the property of the respective content creator, licensed to YouTube for distribution and user access. As a non-profit educational institution, LUOA is able to use YouTube video content under the YouTube Terms of Service. For additional information on copyright, please contact the [Jerry Falwell Library](#).

Course Grading Policies

The student's grades will be determined according to the following grading scale and assignment weights. The final letter grade for the course is determined by a 10-point scale. Assignments are weighted according to a tier system, which can be referenced on the Grades

Page in Canvas. Each tier is weighted according to the table below. Items that do not affect the student's grade are found in Tier 0.

Grading Scale		Assignment Weights	
A	90-100%	Tier 0	0%
B	80-89%	Tier 1	25%
C	70-79%	Tier 2	35%
D	60-69%	Tier 3	40%
F	0-59%		

In order for students to receive credit for a course, the following conditions have to be met:

1. All semester exams and module tests have to be completed,
2. All Tier 3 projects or papers have to be completed, and
3. Fewer than 10 zeros exist in the gradebook for blank submissions in a full credit course and 5 zeros for blank submissions in a semester course.

Course Policies

Students are accountable for *all* information in the Student Handbook. Below are a few policies that have been highlighted from the Student Handbook.

Types of Assessments

To simplify and clearly identify which policies apply to which assessment, each assessment has been categorized into one of four categories: Lesson, Assignment, Quiz, or Test. Each applicable item on the course Modules page has been designated with an identifier chosen from among these categories. Thus, a Quiz on the American Revolution may be designated by the title, "1.2.W Quiz: The American Revolution." These identifiers were placed on the Modules page to help students understand which Honor Code and Resubmission policies apply to that assessment (see the Honor Code and Resubmission policies on the pages that follow for further details).

- **Lesson:** *Any item on the Modules page designated as a "Lesson"*
These include instructional content and sometimes an assessment of that content. Typically, a Lesson will be the day-to-day work that a student completes.
- **Assignment:** *Any item on the Modules page designated as an "Assignment"*
Typical examples of Assignments include, but are not limited to, papers, book reports, projects, labs, and speeches. Assignments are usually something that the student should do his or her best work on the first time.
- **Quiz:** *Any item on the Modules page designated as a "Quiz"*
This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Quizzes cover a smaller amount of material than Tests.

- **Test:** *Any item on the Modules page designated as a “Test”*
This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Tests cover a larger amount of material than Quizzes.

Resubmission Policy

Students are expected to submit their best work on the first submission for every Lesson, Assignment, Quiz, and Test. However, resubmissions may be permitted in the following circumstances:

- **Lesson:** Students are automatically permitted two attempts on a Lesson. Students may freely resubmit for their first two attempts without the need for teacher approval.
- **Assignment:** Students should do their best work the first time on all Assignments. However, any resubmissions must be completed before the student moves more than one module ahead of that Assignment. For example, a student may resubmit an Assignment from Module 3 while in Module 4, but not an Assignment from Modules 1 or 2. High School students may not resubmit an Assignment without expressed written permission from the teacher in a comment.
- **Quiz:** Students may NOT resubmit for an increased grade.
- **Test:** Students may NOT resubmit for an increased grade.

If a student feels that he or she deserves a resubmission on a Lesson, Assignment, Quiz, or Test due to a technical issue such as a computer malfunction, the student should message his or her teacher to make the request, and that request will need to be approved by a Department Chair.

Consequences for Violations to the Honor Code

Every time a student violates the Honor Code, the teacher will submit an Honor Code Incident Report. The Student Support Coordinator will review the incident and allocate the appropriate consequences. Consequences, which are determined by the number of student offenses, are outlined below:

- **Warning:** This ONLY applies to high school Lessons and elementary/middle school Assignments and Lessons. Students should view these actions as learning opportunities.
 - **Lessons:** A zero will be assigned for the question only.
 - **Elementary/Middle School Assignment:** The student must redo his or her work; however, the student may retain his or her original grade.
- **1st Offense:**
 - **Lesson, Quiz, or Test:** The student will receive a 0% on the entire assessment.
 - **Assignment:** The student will either:
 - Receive a 0% on the original assignment
 - Complete the Plagiarism Workshop
 - Retry the assignment for a maximum grade of 80%
- **2nd Offense:** The student will receive a 0% and be placed on academic probation.

- **3rd Offense:** The student will receive a 0% and the Faculty Chair will determine the consequences that should follow, possibly including withdrawal from the course or expulsion from the academy.

Materials List

Earth Science

The following materials are required to successfully complete this course.
Any items marked with * are provided by LUOA through the Canvas course.

All other materials must be purchased separately.

Module 1

Graph Paper
Paper
Pencil
Printer
Ruler

Module 3

Antacid Tablets OR Chalk OR Sugar
cubes
Granulated Sugar
Hammer OR Knife
Pencil
Plastic cups
Printer
Scanner OR Camera
Vinegar OR Water

Module 6

Camera
Colored pencils
Pencil
Printer
Scanner OR Camera

Module 7

Plastic Film canister OR small cup,
saran wrap, rubber band
Teaspoon
Alka seltzer regular strength tablets

Module 8

Colored Pencils
Pencil
Printer
Scanner OR Camera

Scope and Sequence

Earth Science

Module 1: Introduction to Earth Science

Week 1: Class Expectations

Week 2: The Scientific Method

Week 3: Measurement on the Earth

Week 4: Mapping the Earth

Module 2: Rocks & Minerals

Week 5: Minerals

Week 6: Igneous Rocks

Week 7: Sedimentary Rocks

Week 8: Metamorphic Rocks

Module 3: Weathering & Water

Week 9: Weathering

Week 10: Erosion

Week 11: The Ocean

Week 12: Surface Water

Module 4: Water on the Earth

Week 13: Ground Water

Week 14: Glaciers

Week 15: Glacial Deposition & the Ice Age

Week 16: The Atmosphere

Module 5: Semester Exam

Week 17: Temperature Variation

Week 18: Semester Exam

Module 6: Water in the Atmosphere

Week 19: Water Vapor

Week 20: Clouds

Week 21: Precipitation & Air Pressure

Week 22: Wind

Module 7: Weather

Week 23: Pressure Systems

Week 24: Storms

Week 25: Climate

Week 26: Volcanos

Module 8: The Earth's Crust

Week 27: Plate Tectonics

Week 28: Earthquakes

Week 29: Mountain Building

Week 30: Fossils & Dating

Module 9: Astronomy

Week 31: The Sun

Week 32: The Moon

Week 33: The Inner Planets

Week 34: The Outer Planets

Module 10: Final Exam

Week 35: Stars & Galaxies

Week 36: Final Exam