COURSE SYLLABUS

SCI 0900
EARTH SCIENCE

I. 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.

II. 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.

PREREQUISITES

None.

III. MATERIALS LIST

Besides your online materials you will also need technology materials for this course. You are required to have the following:

- Computer and printer
- Microsoft Office 365 (you can get from LU for free)
- Scanner or camera
- Pen & #2 pencils
- Note cards for vocabulary
• Colored pencils
• Graph paper
• Chalk (not dustless) or sugar cube
• Vinegar (not needed if you use sugar cubes; replace the vinegar with water)
• Clear shoe-box or glass Pyrex loaf pan
• Dirt/rocks/clay/sand (not potting soil) enough to shape a mountain in your container (shoe-box or loaf pan) that will not shift. This works well if you can dig from outside.

IV. MEASURABLE LEARNING OUTCOMES

The student will be able to:
A. Describe the processes of science including the scientific method, scientific notation, significant figures, graphing, and measurement
B. Create and read topographic maps and understand latitude, longitude, the earth’s dimensions and properties
C. Identify minerals, sedimentary rocks, metamorphic rocks, igneous rocks, and the rock cycle
D. Describe matter and identify components of atoms and molecules and their place on the periodic table
E. Differentiate between weathering, erosion, and deposition and the processes that cause them
F. Explain the water cycle, groundwater, surface water, and glacial movement, and their erosional processes
G. Understand the balance of heat in the atmosphere and its effect on the earth
H. Identify the factors that affect the atmosphere, winds, clouds, precipitation, and surface air movement
I. Explain air masses, fronts, pressure systems, cyclonic storms, severe weather, and forecasting
J. Identify the factors that contribute to climate, climate zones, and climate change
K. Explore the features that contribute to a dynamic earth including: plate tectonics, earthquakes, volcanoes, and mountain building
L. Examine earth’s history, fossils, and their place in the rock record
M. Describe the sun-earth-moon system and the earth’s place in the solar system
N. Identify the features of the solar system, galaxy, and universe

V. COURSE REQUIREMENTS AND ASSIGNMENTS
A. Individual lesson assessments (1 per lesson)
B. 4 Quizzes per Unit
C. One Chronology Assessment per Unit
D. Final Chronology Assessment based on Unit Chronology Assessments
E. One Major Writing Assessment developed over the whole of the course
   1. Topic/Thesis
   2. Outline
   3. Bibliography
   4. Rough Draft
   5. Final Draft
F. 1 Test per Module
G. 1 Final Exam

VI. COURSE GRADING AND POLICIES
A. Grading Weights
   Lesson Assignments  25%
   Quizzes, Labs and Written Assignments  35%
   Tests  40%
B. Scale
   A  90 – 100
   B  80 – 89
   C  70 – 79
   D  60 – 69
   F  Below 60

VII. Other Policies
A. Academic Misconduct
   See pages 32-35 of your Student Handbook
B. Repeating Assignments
   Students may repeat lesson twice. Quizzes and tests cannot be repeated to gain a higher grade. Quizzes and tests may be reset for technical issues, but a new set of questions will be generated.