

Course discipline/number/title: SCIE 1200: Integrated Earth Science and Physics

A. CATALOG DESCRIPTION

1. Credits: 3
2. Hours/Week: 2 lecture, 2 lab
3. Prerequisites (Course discipline/number): None
4. Other requirements: None
5. MnTC Goals (if any): Goal 3/Natural Sciences

B. COURSE DESCRIPTION: This one semester course is designed to introduce students to key concepts in earth science and physics using an integrated approach. The course covers basic concepts and terminology while emphasizing the connection between earth science and physics in major content areas which include earth and space, motion and force, energy, waves, meteorology and climate, earth materials, electricity, and sources and production of energy.

C. DATE LAST REVISED (Month, year): February, 2021

D. OUTLINE OF MAJOR CONTENT AREAS:

1. The Nature of Science and the Scientific Method
2. Earth and the Solar System
3. Meteorology and Climate
4. Earth Materials
5. Earth's Interior and Plate Tectonics
6. Geologic Time
7. Forces and Motion
8. Energy
9. Light
10. Sound
11. Electricity & Magnetism
12. Energy Resources and Production

E. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Use appropriate terminology to explain fundamental concepts of earth science and physics.
2. Demonstrate the ability to make connections within and across earth science and physics.
3. Design and conduct scientific investigations, evaluate results and draw logical conclusions.
4. Use scientific understandings and abilities when making decisions about personal and societal issues.

F. LEARNING OUTCOMES (MNTC):

Goal 3/Natural Sciences: The student will be able to:

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:

1. Lab reports and/or quizzes
2. Lecture quizzes
3. Group work/projects
4. Presentations
5. Exams

- H. RCTC CORE OUTCOME(S). This course contributes to the following RCTC Core Outcome(s):
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.
- I. SPECIAL INFORMATION (if any): None