

Course Outcome Summary

General Education Satisfier Course

ESC 151 Earth Science

Course Information

Division	Science/Mathematics
Contact Hours	75
Lecture Hours	45
Lab Hours	30
Total Credits	4

Prerequisites

English 090 and Reading 090 and MATH 090 or qualifying score on accepted placement tests

Course Description

This course is an introduction to earth sciences for beginning students. The course is designed to show the numerous and important ways in which geology, and some aspects of meteorology, oceanography and solar-system astronomy interrelate with humankind and our environment. Emphasis is on broad concepts and fundamental principles of earth science and their application to environmental considerations. Course requires laboratory work.

This course is approved as a General Education competency satisfier.

General Education Goal: Critical Thinking

Competency: Understand the elements of scientific inquiry and scientific principles in a natural science college laboratory course setting.

Learning Outcome: Students will use the scientific method to define a problem, utilize appropriate methods to solve the problem, and propose and evaluate a solution to the problem.

General Education Learning Objectives

- A. Observe and describe natural phenomena and formulate hypotheses.
- B. Plan and implement scientific experiments to test hypotheses.
- C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
- D. Evaluate experimental data and propose solutions based on this data.
- E. Evaluate the proposed implications of a solution.

Course Outcomes

In order to evidence success in this course, the students will be able to:

1. Recognize and use the physical properties of minerals and rocks to classify and identify them.

Applies to General Education Objectives

- A. Observe and describe natural phenomena and formulate hypotheses.
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2. Identify and classify the three rock types including describing how each is formed.
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 - D. Evaluate experimental data and propose solutions based on this data.
 - E. Evaluate the proposed implications of a solution.

3. Identify and describe the structure, composition and dynamics of the earth's interior and how these relate to plate tectonic processes.
Applies to General Education Objectives
 - A. Observe and describe natural phenomena and formulate hypotheses.
 - B. Plan and implement scientific experiments to test hypotheses.
 - C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
 - D. Evaluate experimental data and propose solutions based on this data.
 - E. Evaluate the proposed implications of a solution.

4. Describe the features that make up the earth's hydrosphere including the oceans, rivers, groundwater, and glaciers and their role in the formation of the earth's ever-changing landscape.
Applies to General Education Objectives
 - A. Observe and describe natural phenomena and formulate hypotheses.
 - B. Plan and implement scientific experiments to test hypotheses.
 - C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
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5. Describe the composition and character of the Earth's atmosphere including understanding the sun's role in the heating of our atmosphere.
Applies to General Education Objectives
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6. Explain and implement the concepts of geologic time including the concepts of both relative and absolute dating.
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 - C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
 - D. Evaluate experimental data and propose solutions based on this data.
 - E. Evaluate the proposed implications of a solution.

7. Describe the formation of the earth's surface features including those formed by both tectonic and weathering processes.
Applies to General Education Objectives
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 - B. Plan and implement scientific experiments to test hypotheses.
 - C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
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8. Summarize the scientific findings about the origin and components of our solar system.
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 - B. Plan and implement scientific experiments to test hypotheses.
 - C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
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9. Identify and use the earth's geographic grid system and topographic maps to locate places and describe landforms.
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 - B. Plan and implement scientific experiments to test hypotheses.
 - C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
 - D. Evaluate experimental data and propose solutions based on this data.
 - E. Evaluate the proposed implications of a solution.

10. Identify and describe the processes of plate tectonics and how these processes relate to the occurrence of earthquakes, volcanic activity, and mountain building.
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- D. Evaluate experimental data and propose solutions based on this data.
- E. Evaluate the proposed implications of a solution.

11. Recognition of the influence of science on our daily lives.

Applies to General Education Objectives

- A. Observe and describe natural phenomena and formulate hypotheses.
- B. Plan and implement scientific experiments to test hypotheses.
- C. Utilize scientific laboratory skills for data collection within a college laboratory setting.
- D. Evaluate experimental data and propose solutions based on this data.
- E. Evaluate the proposed implications of a solution.

12. Describe the processes and procedures in the scientific method.

Applies to General Education Objectives

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13. Perform accurate quantitative measurements using laboratory instrumentation, interpret experimental results, perform calculations on these results and draw conclusions.

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Last updated: April 13, 2015

By: