

CORE CURRICULUM COMPONENT APPLICATION
Texarkana College

Part I: Course Information

Course Type

- Existing/Restructured
 New Course

Course Prefix & Number: **GEOL 1303**

Texas Common Course Number (TCCN): **1303**

Course Title: **Physical Geology**

Course Catalog Description

Physical Geology (4,3,3). An investigation into the processes that shape the solid earth, including the formation of minerals and rocks, volcanism, erosion and sedimentation, mountain building, earthquakes, landform evolution, glaciation, and the motion of the continents.

Course Prerequisites:

College Algebra or concurrent enrollment in Chemical Calculations.

Available Online?

- Yes
 No

Part II: THECB Course Objectives

1. Be able to identify the common rock-forming minerals
2. Be able to identify common rock types
3. Understand how the common rock types are formed
4. Understand the nature of volcanic activity
5. Be able to identify geologic structures
6. Understand the elements of plate tectonic theory

Part III: THECB Skill Objectives

- 1. Critical Thinking Skills:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- 2. Communication Skills:** to include effective development, interpretation and expression of ideas through written, oral and visual communication
- 3. Empirical and Quantitative Skills:** to include applications of scientific and mathematical concepts.
- 4. Teamwork:** to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

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<p>Part IV: Course Student Learning Outcomes (SLO)</p> <ol style="list-style-type: none"> 1. Be able to identify the common rock-forming minerals 2. Be able to identify common rock types 3. Understand how the common rock types are formed 4. Understand the nature of volcanic activity 5. Be able to identify geologic structures 6. Understand the elements of plate tectonic theory

Skill Objective:	Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
THECB Course Objective	Understand the elements of plate tectonic theory
Course Student Learning Outcome	Understand the elements of plate tectonic theory
General Learning Activities	Students will graph volcano chains in the Pacific ocean. After a mathematical analysis of the data, students will have to determine why there seems to be a discrepancy in the data. They will have to use what they know about plate movement, volcanoes, and hotspots to arrive at an answer.
Assessment <i>Must Include Assignment & Rubric</i>	The assignment will be to create and carry out the experiment on the Pacific Tectonic Plate The Critical Thinking Skills rubric will be used

Skill Objective:	Communication Skills: to include effective written, oral, and visual communication
THECB Course Objective	Understand the elements of plate tectonic theory
Course Student Learning Outcome	Understand the elements of plate tectonic theory
General Learning Activities	Students will be grouped and asked to perform the experiment on the Pacific Tectonic Plate. After the data is plotted, the group will be asked to write a report that analyzes the results. The group will then prepare and present an oral report with overheads and Power Points of their results.
Assessment <i>Must Include Assignment & Rubric</i>	The assignment will be to communicate in a written report and in a class presentation the results of the experiment on the Pacific Tectonic Plate. The Communication Skills rubric will be used.

Skill Objective:	Empirical and Quantitative Skills: to include applications
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	of scientific and mathematical concepts.
THECB Course Objective	Understand the elements of plate tectonic theory
Course Student Learning Outcome	Understand the elements of plate tectonic theory
General Learning Activities	Students will plot data concerning Hawaiian volcano location and ages. Then the best fit will be used to find the straight line that fits the data. Then a calculation of the slope and reverse slope will be used to determine the speed of the plates. All mathematical operations must be shown. Since there are two lines that develop from the data, a study of the reasons for two lines must be done.
Assessment <i>Must Include Assignment & Rubric</i>	The assignment will be to apply scientific and mathematical principles to the analysis of the data collected in the experiment and come to a conclusion. The Empirical and Quantitative Skills rubric will be used.

Skill Objective:	Teamwork: to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
THECB Course Objective	Understand the elements of plate tectonic theory
Course Student Learning Outcome	Understand the elements of plate tectonic theory
General Learning Activities	Students will be divided into groups and given the basic concepts of group dynamics. They will work as a group to carry out the experiment and prepare the report and presentation for the class. They will then present the report as a group. The last item to be to have the group fill out a questionnaire about the other team member's rolls in the group.
Assessment <i>Must Include Assignment & Rubric</i>	The assignment will be to carry out the experiment as a group and to meet as a group to analyze the data and make a report and presentation. We will use the Teamwork rubric.