

GEOLOGY 1401
Earth Science I

Western Texas College

- I. Basic Course Information:
 - A. Survey of geology, meteorology, oceanography, and astronomy. Activities will cover methods used to collect and analyze data in geology, meteorology, oceanography, and astronomy.
 - B. Prerequisites: None
- II. Student Learning Outcomes (SLO)
 - A. Explain the current theories concerning the origin of the Universe and of the Solar System.
 - B. Explain the place of Earth in the Solar System and its relationships with other objects in the solar system.
 - C. Relate the origin and evolution of Earth's internal structures to its resulting geologic systems, including Earth materials and plate tectonic activities.
 - D. Explain the operation of Earth's geologic systems and the interactions among the atmosphere, the geosphere, and the hydrosphere, including meteorology and oceanography.
 - E. Explain the history of the Earth including the evolution of earth systems and life forms.
 - F. Classify rocks and minerals based on chemical composition, physical properties, and origin.
 - G. Apply knowledge of topographic maps, diagrams, and/or photographs to identify landforms and explain the processes that created them.
 - H. Differentiate the types of plate boundaries, explain the processes that occur at each and identify associated structural features on maps, block diagrams and cross sections.
 - I. Apply relative and numerical age-dating techniques to construct geologic histories.
 - J. Measure atmospheric processes that affect weather and climate.
 - K. Describe the composition and motion of ocean water and analyze the factors controlling both.
 - L. Compare properties and motions of objects in the solar system.
 - M. Demonstrate the collection, analysis, and reporting of data.
- III. Testing Requirements
 - A. The four exams and final exam must be proctored by an approved testing organization. Details are in the Moodle link entitled "Proctoring Procedures".
 - B. Students **MAY NOT** use books, notes or any other type of assistance while taking proctored exams.
 - C. Students **MAY** use their book and/or lab manual on topic quizzes.
- IV. Major Course Requirements
 - A. Major Requirement 1 – There will be 4 proctored exams.

- B. Major Requirement 2 – There will be unproctored quizzes over each lab assignment.
- C. Major Requirement 3 – There will be 8 unproctored topic quizzes.
- D. Major Requirement 4 - There will be a proctored final exam.
- E. The time limits on each assignment are below.
 1. Exams – One hour
 2. Lab Quizzes – One hour
 3. Topic Quizzes – 30 minutes
 4. Final Exam – Two hours

Assignments	Proctored	Not Proctored
Topic Quizzes		30%
Exams	45%	
Final	25%	
Total	70%	30%

V. Textbooks for the course

- A. Textbooks for this course have been customized in order to reduce the cost to the student and to contain only the material we will cover in class. For these reasons, the books may be purchased at the WTC bookstore only. Simply tell the people there that you need the books for GEOL 1401. Give them a call at 325-574-7601

VI. Course Organization & Schedule - Please note that this is subject to change as the semester progresses.

Introduction to science in general and geology in particular	Notes on Moodle
Introduction to basic chemistry needed for geology.	Notes on Moodle and Chapter 1 – Building blocks of rocks and characteristics of minerals
Mineral characteristics and identification	Notes on Moodle and Chapter 1 – Identification and uses of minerals
Rock types and the rock cycle	Notes on Moodle and Chapter 2 – Igneous, sedimentary and metamorphic rocks and how they form
Erosion and Weathering	Notes on Moodle and Chapters 3 – 4 – The breakdown, transport and deposition of Earth materials

Deserts	Notes on Moodle and Chapter 10 – Formation and characteristics of arid environments
Glaciers	Notes on Moodle and Chapter 10 – Formation and characteristics of arid environments
Earthquakes, geologic structures and mountain building	Notes on Moodle and Chapter 7 – Types of crust, major quake zones, causes of earthquakes, locating and measuring earthquakes
Volcanoes and volcanism	Notes on Moodle and Chapter 5 – Nature and origin of volcanoes, products of volcanoes, types of magma, types of volcanic cones, learning to live in a volcanic prone environment
Diastrophism	Notes on Moodle and Chapter 8 – Folding, faulting, plate tectonics, plate boundaries
Mass Wasting	Notes on Moodle and Chapter 9 – Types of wet and dry flowage, causes of mass movements, living in a movement prone environment
Rivers and ground water	Notes on Moodle and Chapter 11 – Ages of streams, hydrologic cycle, works of running water
Caves and caverns	Class notes on Moodle – Methods and causes of cavern development, types of speleothems
Sea shores and their features	Class notes on Moodle – Beach and shoreline features, erosion of beaches and headlands, living with erosion prone beaches
Climate and Weather on Earth	Class notes on Moodle – Why weather occurs, difference in climate and weather, living with a changing climate

Disclaimer: Schedule and content are subject to change at the instructor's discretion.

- VII. Other Policies: Please refer to the WTC Course [Catalog](#) for the following:
- A. Campus Calendar
 - B. Final Exam schedule
 - C. How to drop a class
 - D. Withdrawal information
 - E. Student Conduct/Academic Integrity
 - F. Students with disabilities

Last Modified: August 24, 2015