

FALL 2015
UNIVERSITY OF HOUSTON-DOWNTOWN
DEPARTMENT OF NATURAL SCIENCES

COURSE NUMBER AND TITLE: GEOL 1305 – Physical Geology

CATALOG DESCRIPTION: Study of the materials that make up the crust of our planet, evolution of landforms, structure and earth movements, including plate tectonics and the gross structure of the earth.

PREREQUISITE: None

TEXTBOOK: *Physical Geology – Exploring the Earth* (6th edition) by Monroe, Wicander and Hazlett (Brooks-Cole Publishing Co.)

LEARNING OUTCOMES:

- Identify scientific questions pertaining to natural phenomena.
- Develop hypotheses, collect and analyze data using quantitative and qualitative measures.
- Effectively communicate the analysis and results using written, oral and visual communication.
- Collaborate in the evaluation of the quality of scientific evidence from multiple perspectives toward the goal of reaching a shared objective.

COURSE OBJECTIVES: This is a first-year college level course designed for students with little or no background in any of the physical sciences at the university level. The objectives are to:

- Describe the processes by which the common rocks are formed, weathered, and eroded, and relate these processes and to the rock cycle;
- Identify common minerals and rocks using their physical properties; and relate these properties to the rock cycle;
- Read and interpret topographic and geologic maps, including being able to recognize the geomorphologic features produced by gravity transfer, running water, ground water, glaciers, wind, waves, and currents; as well as geologic structures, such as anticlines, synclines, faults, and unconformities, and be able to describe their significance;
- Fully describe the theory of plate tectonics, and demonstrate your understanding by being able to explain the kinds of plate boundaries and their significance, the development and destruction of plates, and a description of the gross internal structure of the Earth;
- Relate earthquakes, volcanoes, fold belts, ocean floor topography, and magnetic data by means of plate tectonic models;
- Describe the evolution of the Earth and compare it to the other planets and objects in our solar system.

IF YOU READ NOTHING ELSE THIS SEMESTER, READ THIS!!!

GRADING POLICY:

- There will be two one-hour regular exams and a 2½-hour comprehensive final exam.
- **There are no make-up exams;** if you cannot attend an exam during its regularly scheduled time, then that grade will be replaced with your final exam grade. You **MUST** take the final exam to earn a grade in the course.
- Cell phones, ipads, or any similar electronic device that is used for texting will **NOT** be tolerated in class. Please turn them off (not just to vibrate mode) before entering the classroom. Texting or messaging in class will result in points being deducted from your grade. **I am VERY SERIOUS about this.**
- You are required to take the lab course concurrently with this lecture course. There will be assigned lab/take-home activities each week. We will work on them during class, but some may require completion outside of class. We will discuss each assignment the following week.
- Final exams cannot be given early.
- **There is nothing you can do for extra credit, so please don't ask.**

ACADEMIC HONESTY: Students are reminded that they are subject to the UHD Academic Honesty Policy (found at <http://www.uhd.edu/about/hr/PS03A19.pdf>) and all other relevant policies as outlined in the UHD Catalog and Student Handbook. *Please familiarize yourself with this policy.*

DISABILITY STATEMENT: The University of Houston-Downtown complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for students with a disability. In accordance with Section 504 and ADA guidelines, UHD strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a documented disability requiring academic adjustments/auxiliary aids, please contact the Office of Disability Services, One Main St., Suite 409-South, Houston, TX 77002. (Office) 713-226-5227 (Website) www.uhd.edu/disability/ (Email) disabilityservices@uhd.edu

SCIENCE LEARNING CENTER: The Science Learning Center (or SLC) is located in N604. There you will find the same mineral and rock identification boxes that we use in the lab. There are also several videos, CDs, and DVDs that can be viewed in the SLC. These include videos about beaches, rivers, and the volcanoes Kilauea Iki and Surtsey, and the TASA CD-ROM and one on Plate Tectonics. It is likely that there will also be a geology tutor that may help you.

Take advantage of these valuable resources, but please return everything to their proper place, and leave the SLC clean and tidy.

ATTENDANCE: Your failure to attend class (face to face or hybrid), engage course material (Online only); or make contact with faculty to adequately explain your absence by the 10th class calendar day of the semester will result in your being administratively dropped from this course. Being dropped from this course may affect your enrollment status and/or your financial aid eligibility.

EVALUATION:

A. Grading System

A	100-90
B	89-80
C	79-70
D	69-60
F	below 60

B. Computation of Final Grade

Exam 1	30%
Exam 2	30%
Final Examination	40%

TENTATIVE COURSE OUTLINE
(Lab activities in *bold italics*)

<u>Date</u>	<u>Subject</u>	<u>Chapter</u>
Aug 25, 27	Earth as a Planet; Minerals and Mineral Identification	1, 3
	<i>Mineral Identification</i>	<i>1, 2</i>
Sept 1	LABOR DAY – NO CLASSES	
Sept 3	<i>Mineral Identification (cont.)</i>	<i>1, 2</i>
Sept 8, 10	Igneous Rocks	4, 5
	<i>Igneous Rock Identification</i>	<i>3</i>
Sept 15, 17	Sedimentary Rocks	6, 7
	<i>Sedimentary Rock Identification</i>	<i>4</i>
Sept 22, 24	Metamorphic Rocks	8, 13
	<i>Metamorphic Rock Identification</i>	<i>5</i>
Sept 29, Oct 1	EXAM 1; Topographic Maps	6
Oct 6, 8	Groundwater	16
	<i>Groundwater processes</i>	<i>9</i>
Oct 13, 15	Rivers & Streams, Glaciers & Glacial Processes	15, 17
	<i>Stream Processes</i>	<i>8</i>
Oct 20, 22	Deserts and Wind processes, <i>Desert processes</i>	18, <i>12</i>
	LAB EXAM	
Oct 27, 29	Shoreline Processes; Ocean Floor Geology	19, 12
	<i>Shoreline Processes</i>	<i>11</i>
Nov 3, 5	EXAM 2, Geologic Structures	14
Nov 10, 12	<i>Geologic Structures/Geologic Maps</i>	<i>10, 15</i>
Nov 17, 19	Earthquakes and Seismic Activity; Earth's interior	10, 11
	<i>Seismic Activity</i>	<i>16</i>
Nov 24	Plate Tectonics	2
Nov 26-28	THANKSGIVING BREAK – NO CLASSES	
Dec 1, 3	Plate Tectonics, LAB FINAL	2

FINAL EXAM: Wednesday, December 10 (4:00-6:30 pm)

Physical Geology (GEOL 1305/1105)

This course is required to students taking the BS in the Geosciences. It is also an option for students taking the BS in Biological and Physical sciences. The core requirements are met through a combination of activities from the required co-requisite lecture and lab so activities have been placed on the same worksheet. (This is the approach taken for co-requisite core courses General Biology and lab and General Chemistry and lab.)

Learning Outcome Students will be able to:	Instructional strategy or content used to achieve the outcome:	Method by which students' mastery of this outcome will be evaluated:
Utilize scientific processes to identify questions pertaining to natural phenomena.	Comprehension of Geological Principles – Students will use scientific processes to examine sets of questions regarding geological phenomena including: the Rock Cycle, formation of igneous, sedimentary and metamorphic rocks, weathering and erosion, plate tectonics, formation of geomorphological features and the relationships of humankind and earth.	Students' ability to understand phenomena is addressed through exams which are based on short answer and essay questions (GEOL 1305/1105).
Utilize scientific processes to develop hypotheses, collect and analyze data using quantitative and qualitative measures.	Students will work on laboratory exercises that are related to lecture topics (given above). For example, students will learn to identify a rock type by its characteristics, read and evaluate maps.	Lab exercises and handouts will be collected and evaluated. Students will also be given exams where they demonstrate comprehension of topics and scientific processes needed to complete lab exercises (GEOL 1305).
Utilize scientific processes to effectively communicate the analysis and results using written, oral and visual communication.	Students will work as a group to create a presentation relevant to one of the areas of study in the class. Exams of this class are largely short answer.	Students will give a presentation that will include oral and visual components. The presentation will be evaluated on scientific merit and communication using a rubric (GEOL 1105). Written material submitted on exams will be evaluated for scientific accuracy and basic communication ability (GEOL 1305).
Collaborate in the evaluation of the quality of scientific evidence from multiple perspectives toward the	Students will work in groups, evaluating data given by the instructor during lab session.	All students will submit a written copy of their data evaluation before leaving the lab. If there is

goal of reaching a shared objective.	For example, students will have to work together to answer questions about minerals or to work with assemblages of maps.	a problem with the data, students will be asked to re-analyze their data. Successful completion of the exercise and ability to work together as a team will be incorporated into the grade for the lab exercises (GEOL 1105).
--------------------------------------	--	---