

COURSE SYLLABUS

YEAR COURSE OFFERED: 2015

SEMESTER COURSE OFFERED: Spring

DEPARTMENT: Environmental Science

COURSE NUMBER: GEOL 1304

NAME OF COURSE: Historical Geology

NAME OF INSTRUCTOR: Staff

The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Learning Objectives

To teach students the knowledge and understanding of

- The currently accepted theories of the formation and evolution of life.
- The development of modern historical geology, its scope, methodology and challenges.
- The Geologic Time Scale as well as the times of selected geotectonic episodes and Paleontological events.
- The relationship of selected orogenic episodes to plate tectonics and continental drift as well as to the accumulation of geological resources, and the evolution and distribution of life forms.

Core Objectives (CO)

Physical Geology addresses the following core objectives to ensure students develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in their lives.

- Critical Thinking Skills(CT) - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- Communication Skills(COM) - to include effective development, interpretation and expression of ideas through written, oral and visual communication
- Empirical and Quantitative Skills (EQS)- to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
- Team Work (TW) - 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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Major Assignments/Exams

In class experience: Students will be provided maps and air photos to analyze geological history. CO: CT; CS; EQS and TW

Exams: there will be three in-class exams during the semester. Exams will consist of multiple choice, short answer, and essay questions. CO: CT, EQS

Learning outcomes	CO	Assessment Methods	Criteria/Target
Describe/identify important earth materials	CT, COM and EQS	Students will be tested rocks and minerals identification	70% above
Describe important earth processes	CT, COM and EQS	Students will be tested on the major principles and concepts. Examples of questions are: the driving force of plate tectonics; the formation of ocean floor, geological features along different geological plate boundaries	70% above
Explain the concept of geological time and the observation that support this concept.	CT, COM, TW and EQS	Students will be tested on the different geological dating technique and worked on team project on the relative age dating in class.	70% above
Describe the earth history during precambrian eon and the paleozoic, Mesozoic and Cenozoic eras.	CT, COM and EQS	Students will be tested the geological features and rock records during those geological times.	70% above

Required Reading

Wicander, Reed, & Monroe, James, S., 2007, Historical Geology, Thompson Brooks/Coles, 5th Ed., 464pp.

Recommended Reading

(T&D)Thompson & Dickenson, National Audubon Society Field Guide to North American Fossils, 8th Ed, Alfred. A. Knopf, ISBN: 0394524128

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List of discussion/lecture topics

1. Earth Materials
2. Plate Tectonics
3. Geologic History
- 3b. Geologic Maps
4. Relative Age
5. Absolute Age
6. Sedimentary Rocks and Environments
7. Fossilization
8. Origin of Life and Evolution
9. The Precambrian: Hadean, Archean and Proterozoic
10. The Paleozoic I
11. The Paleozoic II
12. The Mesozoic
13. The Cenozoic
14. The Evolution of Plants-