

**Jacksonville State University**  
**College of Arts and Sciences**  
**Updated June 27, 2006**

**GL 242 HISTORICAL GEOLOGY**

**COURSE DESCRIPTION**

A study of the Earth's evolution, including changes in its crust, surface features, atmosphere, and life forms.

**TEXT**

*The Earth Through Time*, 7<sup>th</sup> edition. Levin, Harold L. 1999, Saunders College Publishing

**COURSE OBJECTIVES**

Students will gain an understanding of the geological history of the earth. We will begin by learning how researchers use the rock record to interpret geologic history. We then start at the beginning of time, move on to the formation of the solar system and follow the development of the earth's major internal structures and surface features. We will also be very concerned with interactions between geology and biology, considering such topics as the origin of life, the evolution of the atmosphere and the diversification of plants and animals, including evidence for periodic episodes of mass extinction.

**COURSE OUTLINE**

Introduction.

Environments of rock formation: igneous. Skim 34-58.

Environments of rock formation: sedimentary. 59-83.

More sedimentary rocks and the metamorphic rocks.

Fossils as paleo-environmental indicators. 104-111.

Fossil bias.

Geologic time: relative dating. 3-12.

Geologic time: absolute dating. 20-31.

**Test #1.**

The formation of the Earth. 196-204.

The Hadean. 212-214. Skim 148-194

The Archean lithosphere. 218-226.

Early life. 226-238.

Progression of microbial fossil life forms.

Autotrophs change everything. 214-218.

The Proterozoic. 254-264.

**Test #2.**

Paleozoic lithosphere. 266.  
The Appalachians. 317-319.  
Paleozoic biosphere. Skim 330-375.  
More Paleozoic biosphere. Cyclothem.  
Even more Paleozoic biosphere.  
The Permian Mass Death. 375-378.

**Test #3.**

Mesozoic lithosphere, East Coast. 380-388.  
Mesozoic lithosphere, West Coast. 388- 392.  
Mesozoic biosphere: flora. 451-454.  
Mesozoic biosphere: fauna. 416-426.  
Dinosaurs. 426-451.  
The Cretaceous Mass Death. 455-460.

**Test #4.**

Modern Physiographic Provinces. 463-480.  
Cenozoic Biosphere: plants. 503-504.  
SEDAAG meetings. No class.  
Mammals. 514-537.  
More mammals.  
Primates. 540-548.  
The appearance of humans. 548-561.

**Final**

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**GL 244 HISTORICAL GEOLOGY LAB II**

**COURSE DESCRIPTION**

Study of Earth history using geologic maps and the fossil record of plant and animal development.

**TEXT**

*Historical Geology Lab Manual*, (2003 Edition) by K.D. Gregg

**REQUIRED MATERIAL**

Pencil, calculator, and colored pencils

**COURSE OBJECTIVE**

A student will investigate concepts in historical geology by doing various “self-explanatory” exercises. Each exercise will address one or two concepts about geologic time, rock-forming environments, facies, unconformities, relative dating, absolute dating, fossils and paleo-environments. A series of questions will lead the students to investigate each issue. These issues will reinforce terms and principles covered by the lectures given in GL 242 Historical Geology.

**COURSE OUTLINE**

Lab #1 Geological time

Lab #2 Introduction to Historical Geology

Lab #3 Review of Plate Tectonics

Lab #4 Rock Forming Environments: Igneous and Metamorphic

Lab #5 Rock Forming Environments: Sedimentary

Lab #6 Sedimentary Facies

**Midterm**

Lab #7 Relative Dating

Lab #8 Unconformities

Lab #9 Absolute Dating

Lab #10 The Grand Canyon

Lab #11 Fossils and Paleo Environments

Lab #12 Using Fossils to Assign Dates

**Final**