

Earth History and Evolution SIO 12
Fall-2013
MWF 10:00-10:50
Center 214

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Texts:

Required text: None. Exams will be based on lecture material and weekly assigned readings, videos or interactive animations. Required readings and other information resources will be assigned throughout the quarter from publically available online resources.

Website: <http://ted.ucsd.edu>

Who should take this course? The course is designed as an introductory course for non-majors. The course will describe how and why we have come to our current understanding of the Earth and organisms that inhabit it. We'll expect you to be able to understand and communicate the logical underpinnings of the major paradigms in Earth Sciences today including: plate tectonics, geologic time, organic evolution, and global environmental change. You should also have a clear idea of the history of life on Earth.

There are 2 basic components to this course:

- 1) Physical and evolutionary processes – the origin and composition of Earth and the principle processes that have shaped the Earth, and life on Earth, from 4.6 billion years ago to the present day.
- 2) Earth History– the origin and evolutionary history of life on Earth, including evolutionary processes and mass extinctions, within the context of major geologic and climatic developments.

Course requirements, exams and grading: You are **required to attend and participate** in all class meetings. Exams will cover material presented in lecture and assigned readings/web resources. You will not be able to succeed in this class if you don't attend class meetings regularly.

Your grade in the class will be determined by the following:

Midterm exam #1:	25%
Midterm exam #2:	25%
Comprehensive Final exam:	25%
Homework Assignments	15%
Pop quizzes	10%

Exams are multiple choice and true false. Scantrons are provided. Assignments are due in class.

COURSE OUTLINE

Physical and Evolutionary Processes

Sep 27	F	Introduction: Earth Systems and Earth History
Sep 30-Oct 4	M	Deep Time: 4.6 Billion years of Earth history
	W	Earth systems over deep time: How much has earth changed?
	F	Earth structure: Solid Earth
		Homework: No homework this week
Oct 7-11	M	Earth Surface: Ocean and Atmosphere
	W	Our Dynamic Planet: Plate Tectonics I
	F	Our Dynamic Planet: Plate Tectonics II
		Homework: Plate tectonics assignment
Oct 14-18	M	Climate Basics: Controls and feedbacks
	W	Climate over Earth history
	F	Life on Earth: The Theory of Evolution
		Homework: Birch Aquarium visit
Oct 21-25	M	Life on Earth: The Theory of Evolution
	W	Exam #1
	F	Rocks, Fossils and Time: The Geologic Record
		Homework: Study for Exam
Oct 28-	M	Telling geologic time: Absolute and Relative geologic time
Nov 1	W	Beginnings: The Big Bang
	F	Formation of the Solar System and accretion of Earth
		Homework: Geologic time exercise

Earth History

- Nov 4- 8 M Precambrian: Origin of Life
 W Atmospheric oxygen and complex life
 F Paleozoic: The Explosion of Life
 Homework: Atmospheric oxygen homework
- Nov 11-15 M **No Class: Veterans Day Holiday**
 W Paleozoic: Animals with backbones
 F Mass Extinctions: The Big One!
 Homework: Mass extinction homework
- Nov 18-22 M Mesozoic: Age of Reptiles
 W The Extinction of the Dinosaurs/Rise of Mammals
 F The Story of Crude
 Homework: Study for exam
- Nov 25-29 M Exam #2
 W Evolution of the turkey
 F **No Class: Thanksgiving Holiday**
- Dec 2-6 M Cenozoic: The Age of Mammals
 W Primate and Human Evolution
 F Humans and Global Change
 Homework: Study for Final
- Dec 13 F Final Exam 8:00am - 10:00am**