

Earth History and Evolution SIO 12
Fall-2021
MWF 12:00-12:50
ZOOM Link: [960 9337 7641](https://ucsd.zoom.us/j/96093377641)

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Texts:

Required text: None. Exams will be based on lecture material and weekly assigned readings, videos, websites and homework assignments. Required reading, etc. will be assigned throughout the quarter and either posted on Canvas or made accessible from publicly available online resources.

Website: <https://canvas.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, evolution of life, and global environmental change.

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** all class meetings, either online during the scheduled class period or by viewing the recorded class lecture and activities. 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/watch class meetings.

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

Exam #1:	20%
Exam #2:	20%
Exam #3 (Final):	20%
Homework Assignments (4):	40%

Exams are not timed and can be taken anytime during the period that starts at class time (12 PM) and the due date (2 class periods after the exam is posted). Exam III will work the same way, but will be posted shortly after the last day of class and due the last day of exams, Dec. You are required to work independently but can use class materials during the exam. Homework assignments are due by midnight on the due date. Late assignments will be accepted but reduced by 1 letter grade per class period overdue.

COURSE OUTLINE

Week 0		
09/24	F	1 – Class Orientation: Earth Systems
Week 1		
09/27-10/1	M	2 – Earth’s place in the universe
	W	3 – Formation of Earth
	F	4 – Earth’s Layers and Magnetic Field Homework #1 Posted
Week 2		
10/04-10/08	M	5 – Plate tectonics I: History of a theory
	W	6 – Plate tectonics II: How continents move and mountains grow
	F	7 – Plate tectonics, super continents and the rock cycle Homework #1 Due 11:59 PM
Week 3		
10/11-10/15	M	8 – The Rock Record of Geologic Time
	W	9 – Making the Fossil Record
	F	Exam I (Lectures 1-9) Due Wednesday 10/20 @ 11:59 PM
Week 4		
10/18-10/22	M	10 – Telling geologic time Homework #2 Posted
	W	11 – Evolution on a Geologic Time Scale (millions to billions of years)
	F	12 – Evolution and Family Trees
Add/Drop Deadline		
Week 5		
	M	13 – The First 4 Billion Years: Overview Homework #2 Due 11:59 PM

10/25-10/29	W	14 – The First 4 Billion Years: The story of oxygen
	F	15 – The First 4 Billion Years: Complex Life
Week 6		
11/01-11/05	M	16 – Paleozoic: The explosion of Life!
	W	17 – Paleozoic: From backbones to four limbs
	F	18 – Paleozoic: The giants before the dinosaurs
Week 7		
11/08-11/12	M	19 – Paleozoic: The Biggest Mass Extinction of them All Homework #3 Posted
	W	Exam II (Lectures 10-18) Due Monday 11/15 11:59 PM
	F	20 – Mesozoic: Recovery and evolutionary reset
Week 8		
11/15-11/19	M	21 – Mesozoic: Age of “Reptiles”
	W	22 – Mesozoic: Mammals in the shadows
	F	23 – Mesozoic: Mass extinction
Week 9		
11/22-11/26	M	24 – Cenozoic: Mammals Emerge
	W	Thanksgiving Holiday – No Class Homework #3 Due 11:59 PM
	F	Thanksgiving Holiday – No Class
Week 10		
11/29-12/03	M	25 – Cenozoic: The Story of Mammals Homework #4 Posted
	W	26 – Cenozoic: From primates to Great Apes -Human evolution
	F	27 – Humans as agents of change Homework #4 Due
Finals Week	M	Mon. 12/6 Final Exam posted (Lectures 19-27)
12/6-12/11	S	Sat. 12/11 Exam III (Final Due Date) 11:59 PM