

Geol 1314 Intro to Historical Geology
NOTE THIS IS A DRAFT AND SUBJECT TO AMENDMENT

Instructor: Richard Langford

Office hours:, Room 401B, Geology Building

Text: Special Edition of *Evolution of the Earth*, Prothero and Dott, (ISBN 007749833x007749833x)

Class Objective:

- I. To understand how the geologic record is used to understand the history of the earth.
- II. Gain an appreciation for “deep time” and what it means for humans. For example, how does modern climate change compare to past climate changes? How fast does change occur on the earth?
- III. Develop a general knowledge of the history of the earth and how life has evolved during different geologic periods.
- IV. To learn how to reconstruct geologic events by observing geologic structures.
- V. Have some fun (it really is pretty cool)

Learning Approach: There will be some memorization. You will have to learn the important events in earth history and how the earth and life existed during each of them. However, we will emphasize problem solving. How do we use observations to deduce what happened?

Grading: (*this is under construction and may evolve during class*) *I may add in-class quizzes or add in homework. If so, I will reduce the exam percentages.*

Exams: Three exams during the semester and a comprehensive exam. You may drop the lowest grade, and the remaining 3 grades will be averaged together. Therefore, if you are happy with your grade prior to the final exam, you do not need to take the final.

Makeup exams: No make-up exams. If you must miss one of the regularly scheduled exams, that will be the one that you will drop from the average.

Extra credit: *I'll figure out something. Probably optional participation in a field trip or two.*

Academic Dishonesty: The UTEP procedures on Academic honesty will be enforced through the Office of the Dean of Students.

Disability Statement: If a student has or suspects she/he has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at <dss@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

Military Statement: For example: If you are a military student with the potential of being called to military service and /or training during the course of the semester, you are encouraged to contact me as soon as possible so that accommodation can be made.

Class Schedule:

Week 1: Introduction to the course. (Lecture 1 and 2) Geologic Time and the Rates of Geologic Change. **Reading:** Chapters 1

Week 2: History of Geology and how our understanding of how the earth works has evolved (Lecture 2) **Reading:** Chapter 2

Week 3 Evolution (Lecture 3) **Reading:** Chapter 3

Absolute dating methods and their importance to modern historical geology. Dating formation age vs thermochronology vs dating detritus. (Lecture 3)
Reading: Chapter 9, Reynolds et al.

Week 4: Basic stratigraphy and using stratified rocks to reconstruct the past; Introduction to biostratigraphy. (Lecture 4) **Reading:** Chapter 4 Chapter 5

Week 5 *First Quiz on Tuesday* Origin and Beginnings of the Earth, How the Earth moves Plate Tectonics **Reading:** Chapter 6 Chapter 7

Week 6 Plate tectonics as the driving process for the earth system. The rise and fall of mountains, etc. (Chapter 7). Looking at the world today.
Reading: Reynolds et al.-- Review Chapter 3, Read Chapter 10.

Week 7: The Ice Ages -- The Pleistocene Lecture 7 **Reading** Chapter 16

Week 8: Ice age mammals and the origin of Humanity. Lecture 7 **Reading** Chapter 16

Week 9: A Cenozoic world. Climate Change and the development of the Mammals (Lectures 8) *Exam 2 on Thursday*
Reading: Chapter 15

Week 10: Mesozoic, Development of the Modern Continents Lecture 10

Week 11: The Rise and fall of the Dinosaurs and The rest of Mesozoic Life Lecture 11

Week 12: The Paleozoic Earth The Plates Break up, the plates come together Lecture 12

Week 13 Paleozoic Life. (Lecture 13). *Exam 3 on Thursday*

Week 14 : The depths of deep time—Precambrian worlds. The origin of plates, oceans and the atmosphere (Lecture 14)

Week 15 The Precambrian world continued Origin of the Continents

Final Exam May 10, Tuesday 10:00-12:45