

Evolution of the Earth (V36.0210)

Fall 2007

Tuesdays and Thursdays, 11:00 to 12:15 in 804 Silver

Instructor: Dr. Michael R. Rampino

Environmental Studies Program

& Department of Biology

Teaching Assistant: Eric Liberda

Office: 1157 Brown Hours: 1 to 2 PM Tues/Thurs



This course covers the cosmic, geological and biological history of Earth. The subject matter includes the cosmic context of planet Earth; the origin of Earth and planets; what makes a planet habitable; the major highlights in the development of the planet; and the origin and evolution of life. The course combines lectures, videos, and several visits to the American Museum of Natural History.

Required Reading: 1) Origins of Life in the Universe, Jastrow and Rampino (unpublished) Chapters only available for download from the Blackboard Site; color printing will give you all the color figures. 2) This Dynamic Earth, W.J. Kious and R.I. Tilling (US Geological Survey, 1996) (download from USGS website or buy from them for \$7). (3) T Rex and the Crater of Doom, Walter Alvarez (any paperback edition—new or used)

Week of:

- 1 Sept 4.....The Universe and Stars
Tuesday: The Universe and its Origins
Thursday: Stellar Evolution
Readings: Text, Prologue and Chaps. 1 & 2

- 2 Sept 11.....Stars, Moons and Planets
Tuesday: Stars (cont'd)
Thursday: The Solar System
Reading: Chap. 3 and 4

3. Sept 18.....Earth and Moon: What makes a planet habitable
Tuesday: The Moon
Thursday: Video
Reading: Text, Chap. 5

- 4 Sept 25.....Mars and Venus
Tuesday: Mars
Thursday: Venus
Reading: Text, Chaps. 6 & 7

- 5 Oct 2.....The Earth
Tuesday: Earth Structure and Composition
Thursday: First Exam
Reading: Text, Chap. 8

- 6 Oct 9.....The Surface Features of an active planet
Tuesday: Continental Drift
Thursday: Plate Tectonics
Reading: Text, Chap. 9 & This Dynamic Earth

- Visit to AMNH, Hall of Earth Science

- 7 Oct 16.....Climatic Change
Tuesday: Changes in Climate and their Causes
Thursday: Recent Climate Change
Reading: Chapter 10

- 8 Oct 23.....Origin of Life
Tuesday: Origin of Life
Thursday: What is Life?
Reading: Chap. 11

- 9 Oct 30.....Evolution and Life
Tuesday: Darwin's Dangerous Idea (1)
Thursday: Darwin's Dangerous Idea (2)
Readings: Chap. 11

- 10 Nov 6.....Early Life
Tuesday: Early Life
Thursday: The Great Transformations (1)
Readings: Chap. 12
- 11 Nov 13.....The Great Transformations
Tuesday: Great Transformations (2)
Thursday: NO CLASS: Thanksgiving
- 12 Nov 20..... Dinosauars and Their Extinction
Tuesday: The Invasion of the Land
Thursday: Dinosauars and their Extinction
Reading: Chapter 13, T Rex and the Crater of Doom

Trip to AMNH Hall of Dinosauars

- 13 Nov 27.....The Mammals and Human Evolution
Tuesday: The Mammals and the Rise of Intelligence
Thursday: The Branch of Evolution Leading to Humans
Chap. 14 and 15
- 14 Dec 4.....Are We Alone in the Universe?
Tuesday: The Search for Extraterrestrial Intelligence
Thursday: Video
Readings: Chaps. 16
- 15 Dec 11.....Evolution of the Earth:
Tuesday: Review

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| Final Exam Week– Date of Final Exam to be Announced |
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Homework Assignments for each Chapter are due in the next class meeting. These will be available on the Blackboard site for the course. The Museum visits are required. You will receive handouts for the trips in class in advance.