

## SYLLABUS

### **GLY 172: THE EARTH THROUGH TIME**

**Fall 2009**

**MWF- 10:00 -10:50 A.M. - Deloach Hall 101**  
**Laboratory Monday 1:00 - 3:50 P.M. - Deloach Hall 105**

**Instructor:** Dr. Richard A. Laws

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**Office Hours:** MF 11:00-12:00 (DL 111); or by appointment

#### COURSE OVERVIEW:

The Earth is a dynamic planet composed of many inter-related, evolving systems. Its history is recorded as a series of events in its rocks, fossils, waters, air, and life, events such as continental collision, ocean formation, magnetic reversals, asteroid impacts, megatsunamis, glaciations, evolution of new species and mass extinctions. This course will investigate these events and the ways by which geologists know such events have taken place and when they took place. The history of the Earth, and its life forms, will be traced from its origin 4.5 billion years ago to the present day. We will also discuss the implications of this knowledge of the Earth's history for present-day interactions of humans with the Earth.

This course fulfills the Basic Studies physical science and laboratory science requirement at UNCW.

#### IMPORTANT GOALS OF THE COURSE:

- Knowledge of, and facility with, the geologic time scale (the basic divisions of Earth history)
- Knowledge of the basic principles that geologists use to interpret the rock record and decipher Earth history
- An understanding of how geologists “think”
- Knowledge of the sequence of major events in the history of Earth and life on Earth
- Appreciation of how knowledge of Earth history can help us understand the present and future Earth

#### TEXTS:

Lecture: Prothero and Dott, 2004. Evolution of The Earth, 7<sup>th</sup> edition, McGraw-Hill. (PD)

Additional Lecture Text: Bjornerud, M., 2005. “Reading the Rocks”. Basic Books (= MB)

Laboratory: Gastaldo, Savrda, and Lewis, 2006. Deciphering Earth History. Contemporary Publishing.

#### COURSE REQUIREMENTS AND GRADING POLICY:

Regular attendance at lecture and laboratory sessions is expected in this course. You will maximize your learning experience (and your grade) if you attend class regularly and read the assignments in the texts prior to the class session for which they are assigned. (Material that is a

review of introductory geology concepts such as rocks and minerals and plate tectonics has not been assigned; if you need to brush up, please do so!)

At this point, we have one scheduled field trip on Friday October 23. Attendance is mandatory. The trip is combined with the mineralogy class field trip so that you will not miss either class.

GRADING:

Lecture portion of course: .....	75% of total grade
Two midterm examinations.....	40% (20% each)
Final examination .....	25%
Quizzes, writing assignments, and class participation: ....	10%
<u>Lecture Total ..</u> .....	<u>75%</u>
Laboratory: .....	25% of total grade
Course Total ... ..	100%

Extra credit opportunities may be announced throughout the semester.

CLASS FORMAT:

Mondays and Wednesdays will be devoted to considering and discussing the assigned material from the text (Prothero and Dott, “PD” in schedule) for that week. Fridays will be devoted to discussions of the assigned material from Bjornerud and other possible assigned outside readings (MB+ in schedule) and writing assignments. Quizzes may occur at any time. Exams will be administered according to the schedule listed below. Reading assignments are extremely important. You cannot participate fully or get the full benefit from the class if you do not complete the reading assignments for a particular class *prior* to coming to class. I cannot stress this enough. Being an educated profession means that you read extensively.

***The University's Honor Code is enforced in this class. Complete details of the Honor Code are published in the current Student Handbook. If you are not familiar with the honor code please take a few moments to review it.***

Lastly, a word of advice: **COME TO LECTURE and LAB** - do not expect to get all of the material from the textbook posted web materials. Also, to routinely or automatically depend upon the kindness of your fellow classmates for lecture notes or lab exercises that you missed due to absence is quite a bit to expect. Again, you cannot fully benefit from class if you are not in class.

## TENTATIVE SCHEDULE OF CLASSES AND READINGS

DATE	TOPIC	PD	MB+
Aug. 19	Course business; Introduction		
21	Video, "The Earth Has A History", Discussion	Ch. 1	pp. 1-6
24	History of Geology	Ch. 2	
26	Basic Principles	Ch. 2	
28	The Tao of Earth		Ch. 1, 7-23
31	Fossils and Evolution 1	Ch. 3	
Sept. 2	Fossils and Evolution 2	Ch. 3	
4	Time and geology 1	Ch. 4	
7	LABOR DAY		
9	Time and Geology 2	Ch.4	
11	Reading the rocks		Ch. 2, 25-48
14	Numerical Dating 1	Ch. 5	
16	Numerical Dating 2	Ch. 5	
18	Tectonics	Ch. 7	Ch. 2, 48-63
<b>21</b>	<b>LECTURE EXAM 1</b>	<b>Ch. 1-5, 7</b>	<b>p. 1-63</b>
23	Origin of the solar system and Earth	Ch. 6	
25	The Great and the Small		Ch. 3, 65-84
28	Origin of Solar System and Earth	Ch. 6	
30	The Archean 1	Ch. 8	
Oct. 2	The Great and Small		Ch. 3, 84-109
5	FALL BREAK		
7	The Archean 2	Ch.8	
9	The Proterozoic 1	Ch. 9	
12	The Proterozoic 2	Ch.9	
14	The Early Paleozoic 1	Ch. 10	
16	Mixing and Sorting		p. 109-131
19	Early Paleozoic 2	Ch.10	
21	Early Paleozoic 3	Ch. 11	
23	Mixing and Sorting, again		p. 131-148
<b>26</b>	<b>LECTURE EXAM 2</b>	<b>Ch. 6, 8-11</b>	<b>p. 65-148</b>
28	Middle Paleozoic	Ch. 12	
30	Innovation and Conservation		p.149-172

Nov. 2	Late Paleozoic	Ch. 13	
4	Mesozoic Events	Ch. 14	
6	Strength and Weakness		p. 173-191
9	Mesozoic Life 1	Ch.14	
11	Mesozoic Life 2	Ch. 14	
13	Epilogue		p. 193-197
16	Cenozoic Events	Ch. 15	
18	Cenozoic Life 1	Ch. 15	
20	Cenozoic Life 2	Ch. 15	
23	The Pleistocene and Climatic Change	Ch. 16	TBA
25	THANKSGIVING BREAK		
27	THANKSGIVING BREAK		
30	Human Origins	Ch. 16	
Dec. 2	The Best of All Possible Worlds	Ch. 17	TBA
<b>7</b>	<b>FINAL EXAMS, 8:00-11:00 am</b>	<b>Ch. 12-17</b>	<b>p. 149-197</b>

*Final lecture and lab exam will be given on the same day, Monday December 8, 8:00-11:00 AM. The location will be determined later, but will be either DL 101 or DL 105, or both.*