

GLY 337 - INVERTEBRATE PALEONTOLOGY
Fall 2009

Dr. Patricia H. Kelley
DL 117 (Phone: 962-7406); MG 1329
kelley@uncw.edu

Welcome to Invertebrate Paleontology! The history of life is outlined in the fossil record, and GLY 337 will involve you in deciphering this record. The first part of this course will introduce you to paleontological concepts and principles, including taphonomy (fossil preservation), taxonomy (procedures and issues involved in classifying fossil organisms), evolution and extinction. We will then transition to the remainder of the course by examining the diversification of life in the “Cambrian explosion.” The latter part of the course will involve study of the major fossil invertebrate groups: their paleobiology, evolution, and use in geology (paleoecology and biostratigraphy). Hands-on experience with each group will be provided in the laboratory and field. The course will culminate in a (publishable) research project in which you will work as teams to develop and test hypotheses based on North Carolina coastal plain fossil samples.

TEXT: Prothero, D.R. 2004. Bringing Fossils to Life. 2d ed. McGraw-Hill, Boston. 503 p.

SUPPLEMENTARY REFERENCE: Boardman, R.S., A.H. Cheetham, and A.J. Rowell, 1987. Fossil Invertebrates. Blackwell Scientific Publications, Palo Alto, CA. 713 p.

COURSE REQUIREMENTS AND GRADING POLICY:

Attendance: Regular attendance at lecture and lab is expected. Exams are based on material covered in lecture and lab; you will maximize your learning (and your grade) if you attend class regularly and read the assignments prior to the class session for which they are assigned.

Grading:

Exam I*	20%
Exam II*	20%
Final Exam (non-cumulative) *	20%
Lab reports (lowest lab grade will be dropped)	20%
Research project (written and oral report)	<u>20%</u>
	100%

* Including both the essay part (during lecture period) and the laboratory part (during lab period) of each exam.

Makeup policy: Exams can only be made up with a doctor’s or comparable valid excuse. Labs can be made up if you have a legitimate reason, but you will not receive the degree of assistance that you would have received in the regularly scheduled lab session. An exam or lab must be made up within two weeks of being missed. The final research paper must be handed in on time to avoid harsh penalties.

Note: The UNCW Academic Honesty Policy will be adhered to in this course (see UNCW Student Handbook and Code of Student Life).

FACULTY OFFICE HOURS: : On campus (DeLoach Hall 117) TR 8:00-9:30, 11:00-12:30; T 12:30 – 4:30; by appointment on MWF (I try to be at CMS on those days if possible).

COURSE OUTLINE AND REQUIRED READINGS:

- Aug. 20 Introduction to Paleontology - p. vii-viii
20 *LAB: Introduction to Research Project*
- 25 Development of Paleontology – Chap. 1, p. 5-8
27 Library research tools (Peter Fritzler) – RL 1022
27 *work on research samples*
- Sept. 1 Taphonomy - Chap. 1, p. 8-19
3 Taphonomy and trace fossils – Chap. 1, Chap. 18
3 *LAB: Field trip to modern marine environment for taphonomic comparison*
- 8 Taxonomy: classification – Chap. 4
10 Taxonomy: species problem – Chaps. 2, 3
10 *LAB: Taphonomy and trace fossils; work on research samples*
12 FOSSIL FIELD TRIP TO JAMES CITY, NC (backup dates 9/19 or 11/14)
- 15 Evolution - Chap. 5
17 Evolution, cont.
17 *LAB: Taxonomy; work on research samples*
- 22 Extinction – Chap. 6
24 EXAMINATION I, essay portion
24 *LAB portion of EXAMINATION I*
- 29 Cambrian Explosion and invertebrate diversification – Chap. 11, p. 190-192
- Oct. 1 Protista - Chap. 11
1 *LAB: Protista; work on research samples*
- 6 NO CLASS – FALL BREAK
8 Porifera - Chap. 12, p. 215-222
8 *LAB: Biostratigraphy (Chap. 10)*
- 13 Cnidaria - Chap. 12, p. 223-229
15 Brachiopoda and biogeography - Chap. 13, p. 231-244, Chap. 9
15 *LAB: Porifera and Cnidaria; work on research samples*
- 20 Brachiopoda (in class exercise)
22 work on research samples
22 *LAB: Brachiopoda; work on research samples*
- 27 Bryozoa - Chap. 13, p. 244-251
29 Arthropoda, Chap. 14
29 *LAB: Bryozoa and Arthropoda; work on research projects*
- Nov. 3 Arthropoda, cont.
5 EXAMINATION II, essay portion (on material covered before 10/29/09)
5 *LAB portion of EXAMINATION II; Arthropoda*
10 Mollusca -- Chap. 15

- 12 Mollusca and functional morphology – Chap. 7
12 *LAB: Mollusca; work on research projects*
- 17 Mollusca and paleoecology – Chap. 8
19 Echinodermata - Chap. 16
19 *LAB: Mollusca and Echinodermata; work on research projects*
- 24 Echinodermata, cont.
26 THANKSGIVING HOLIDAY
26 *NO LAB: THANKSGIVING HOLIDAY*
- Dec. 1 ORAL REPORTS
2 WRITTEN REPORTS DUE AT NOON
- 8 FINAL EXAMINATION including lab portion 8:00 a.m.