ARCHAEOLOGY 453
FUNDAMENTALS OF GEOARCHAEOLOGY
Fall 2007

Instructor:	Andrea Freeman
Office:	ES 842
Phone:	220-2792
Office Hours:	R 10 am-noon or by appt.
Lectures:	TR 12:30-2, ES 859
Labs:	TR 2-3pm, ES 905A (unless otherwise notified)

COURSE OUTLINE
This course will cover analytical methods used in geoarchaeology. Case studies and experiential learning through field examples will be used when possible. Students are required to have a basic knowledge of archaeology, geology, and/or geography. The following topics are considered of primary importance:

- ✦ Recording techniques & Interpretation of site and regional context
- ✦ Application of dating methods
- ✦ Application of chemical and isotopic methods
- ✦ Late Quaternary Stratigraphy
- ✦ Provenance
- ✦ Paleoenvironment
- ✦ Sediments and Soils

LABS
Experiential laboratory learning will be held on Tuesdays and Thursdays from 2-3pm. Students are required to attend either the Tuesday or the Thursday laboratory session. The labs are held in ES 859, unless otherwise announced. Lab materials will be handed out during laboratory sessions. Some materials may be available on Blackboard in advance of the session.

EXAMINATIONS
Two midterm examinations will be given. These examinations will be closed-book and held during the lecture period. There will be no final examination for the course.

RESEARCH PAPER
All students are required to write a course paper of 10-12 pages. Directions for the course paper will be handed out separately. Students should consult with the professor regarding paper topic. An oral summary (10-15 minutes) of the research paper will be required of all students. Both the oral summary of the paper and discussion sessions will comprise the "participation" portion of the course grade.

GRADING SCHEME

Exam 1	30%	A (A+ to A-)	90-100%
Exam 2	30%	B (B+ to B-)	80-89%
Course Paper	20%	C (C+ to C-)	70-79%
Labs	20%	D (D+ and D)	60-69%
(5% each for labs 4, 5, and 7		F	<60%
+5% for lab participation)			

COURSE TEXT
REQUIRED:

Rapp, George (Rip), Jr. and Christopher L. Hill (1998). *Geoarchaeology: The Earth-Science Approach to Archaeological Interpretation.* Yale University Press. (R&H)

Goldberg, Paul and R.I. Macphail (2006) . Practical and Theoretical Geoarchaeology. Blackwell Publishing. (G&M)

Additional Readings Posted on Blackboard (BB)

RECOMMENDED: Stein, Julie and William R. Farrand (1992). *Sediments in Archaeological Context* or Waters, Michael R. (1992) *Principles of Geoarchaeology.*

TENTATIVE SCHEDULE

Week 1:		
11 Sep	Course Goals, Structure, and Schedule	*get book*
	Geoarchaeology in Historical Perspective	R&H pp. Xi-17
13 Sep	Sediments and Soils	R&H pp. 18-49, G&M ch 1 & ch 3
Lab:	No Lab	
Week 2:		
18 Sep	Sediments and Soils, part 2	BB:Mandel and Bettis (2001), ch. 7
20 Sep	Stratigraphy	G&M ch 2
Lab 1:	Soils and Sediments	G&M chapter 16
Week 3:		
25 Sep	Depositional Processes, alluvial	R&H pp. 50-66, G&M ch 4 &5
27 Sep	Depositional Processes, alluvial, part 2	BB:Freeman (2000)
Lab 2:	Stratigraphy and Mapping	
Week 4:		
2 Oct	Depositional Processes, lacustrine	R&H pp. 74-81, G&M ch 5 & ch 7
4 Oct	Depositional Processes, eolian	G&M ch 6
Lab 3:	Radiocarbon Dating	
Week 5:		
9 Oct	Depositional Processes: caves, rockshelters, springs	R&H pp. 67-74, G&M ch 8
11 Oct	**First Midterm Examination** (30%)	***EXAM***
Lab 4:	Stratigraphy, Mapping, and Dating project	
Week 6:		
16 Oct	Geochronology, part 1	R&H pp. 153-174
18 Oct	Geochronology, part 2	R&H, pp. 112-152
Lab:	Lab 4 (5%) handed in.	
Week 7:		
23 Oct	Site detection and stratigraphy	R&H pp. 175-197
25 Oct	Disturbance Processes	R&H pp. 81-85, 198-222, G&M ch 13
Lab 5:	No Thursday Lab, professor in Denver 25 October attending GSA meeting; Tuesday Lab: Dating Techniques #2	
Week 8:		
30 Oct	Overview of Quaternary environments	R&H pp. 86-111, BB:Bradley, pp. 1-46
1 Nov	Pollen and macrofossils	BB:Bradley, pp. 357-373
Lab 5:	No Tuesday Lab, professor in Denver 25 October attending GSA meeting; Thursday Lab: Dating Techniques #2	
Week 9:		
6 Nov	Phytoliths, other silicate fossils, insects	BB:Bradley, pp. 337-354
8 Nov	Soils and environmental interpretation	Holliday (2004), ch. 8; R&H pp. 198-222
Lab 6:	Hand in lab 5 (5%), Pollen preparation and wiggle matching	
Week 10:		
13 Nov	*Reading Day, University Holiday*	*HOLIDAY*
15 Nov	Stable Isotopes	BB:Nordt (2001), ch. 15
Lab 7:	Transfer Functions	
Week 11:		
20 Nov	Cultural Stratigraphy	BB:Stein (2001), ch. 1, G&M ch 10 & ch 11
	Theory and Geoarchaeology	BB:Leach (1992)
22 Nov	**Second Midterm Examination (30%)**	***EXAM***
Lab:	No more labs, hand in Lab 7 (5%)	

Week 12:		
27 Nov	Student Presentations	prepare abstract
29 Nov	Student Presentations	see above
Week 13:		
4 Dec	Student Presentations	see above
6 Dec	Student Presentations	see above

Course Papers (20%) Due 7 December 2007