

ARCHAEOLOGY 453
FUNDAMENTALS OF GEOARCHAEOLOGY
Fall 2009

Instructor: Andrea Freeman
Office: ES 842
Phone: 220-2792
Office Hours: M 10:30 am-noon & 4-4:30pm or by appt.
Lectures: TR 11am -12:15 pm, ES 859
Labs: TR 12:30-2pm, 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:

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

LABS

Experiential laboratory learning will be held on Tuesdays and Thursdays from 12:30-2pm. 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 paper 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, 6, and 7 +5% for lab participation)		F	<60%

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); Readings will be provided on BB if text not available.

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:

- 8 Sep Course Goals, Structure, and Schedule
Geoarchaeology in Historical Perspective
Assignment: R&H pp. Xi-24
- 10 Sep Sediments and Soils, part 1
Assignment: R&H pp. 25-59, G&M ch 1 & ch 3

Week 2:

- 15 Sep Sediments and Soils, part 2
Assignment: BB:Mandel and Bettis (2001), ch. 7
- 17 Sep Stratigraphy
Assignment: G&M ch 2

Week 3:

- 22 Sep Depositional Processes, alluvial
Assignment: R&H pp. 60-78, G&M ch 4 & 5
- 24 Sep Depositional Processes, alluvial, part 2
Assignment: BB:Freeman (2000)

Week 4:

- 29 Sep Depositional Processes, lacustrine
Assignment: R&H pp. 78-81, G&M ch 5 & ch 7
- 1 Oct Depositional Processes, eolian
Assignment: G&M ch 6

Week 5:

- 6 Oct Depositional Processes: caves, rockshelters, springs
Assignment: R&H pp. 81-98, G&M ch 8
- 8 Oct First Midterm Examination (30%)**

Week 6:

- 13 Oct Geochronology, part 1
Assignment: R&H pp. 132-164
- 15 Oct Geochronology, part 2
Assignment: see above

Week 7:

- 20 Oct Site detection and stratigraphy
Assignment: R&H pp. 103-131
- 22 Oct Disturbance Processes
Assignment: R&H pp. 99-102, 244-272, G&M ch 13

Week 8:

- 27 Oct Overview of Quaternary environments
Assignment: R&H pp. 165-194, BB:Bradley, pp. 1-46
- 29 Oct Pollen and macrofossils
Assignment: BB:Bradley, pp. 357-373

Week 9:
 3 Nov Phytoliths, other silicate fossils, insects
 Assignment: BB:Bradley, pp. 337-354
 5 Nov Soils and environmental interpretation
 Assignment: Holliday (2004), ch. 8; R&H pp. 198-222

Week 10:
 10 Nov Stable Isotopes
 Assignment: BB:Nordt (2001), ch. 15
 12 Nov *Reading Day, University Holiday*
HOLIDAY

Week 11:
 17 Nov Cultural Stratigraphy
 Assignment: BB:Stein (2001), ch. 1, G&M ch 10 & ch 11
 19 Nov Theory and Geoarchaeology
 Assignment: BB:Leach (1992)

Week 12:
24 Nov Second Midterm Examination (30%)
 26 Nov Student Presentations
 see above

Week 13:
 1 Dec Student Presentations
 see above
 3 Dec Student Presentations
 see above

Week 14:
 8 Dec Student Presentations
 see above
 Assignment: **Course Papers (20%) Due 8 December 2009**

Laboratory Schedule

	Tuesday	Thursday
Week 2	Lab 1: Soils and Sediments Assignment: G&M chapter 16	Lab 1: Soils and Sediments Assignment: G&M chapter 16
Week 3	Lab 2: Stratigraphy and Mapping	Lab 2: Stratigraphy and Mapping
Week 4	Lab 3: Radiocarbon Dating	Lab 3: Radiocarbon Dating
Week 5	Lab 4: Stratigraphy, Mapping, and Dating Project	Lab 4: Stratigraphy, Mapping, and Dating Project
Week 6	Lab 5: Dating Techniques	Lab 5: Dating Techniques
Week 7	No Tuesday Lab, professor out of town	Lab 6: Pollen Preparation and Wiggle Matching
Week 8	Lab 6: Pollen Preparation and Wiggle Matching Assignment: Lab 4 handed in (5%)	Lab 7: Transfer Functions Assignment: Lab 4 handed in (5%)
Week 9	Lab 7: Transfer Functions	No Lab Assignment: Lab 6 handed in (5%)
Week 10	No Lab Assignment: Lab 6 handed in	No Lab, University Holiday
Week 11	No Lab	No Lab Assignment: Lab 7 handed in (5%)
Week 12	No Lab Assignment: Lab 7 handed in (5%)	

RULES OF CONDUCT FOR THIS COURSE

Examinations, Quizzes, and Final Project:

Cheating and plagiarism are not tolerated in this course. If you have any questions about what constitutes academic misconduct, you should consult the professor of the course or refer to the University of Calgary Calendar. During examinations and quizzes, electronic devices and papers related to the course must be securely stowed away in a backpack or purse and not visible to yourself or any other student.

Electronic Devices:

Portable computers are allowed during lecture and lab for taking notes. Course webpages and related links may be referred to during these periods. Ringers for PDAs and cellular telephones must be off and these devices stowed away in a pocket, purse, or backpack.

Illness or Missed Work:

Make-up midterm examinations will be held **only** for those who miss a midterm due to illness, death in the family, religious conviction, or other *extremely* debilitating circumstances. Those who provide proof of their incapacitation may make up the examination at a date to be scheduled within one week following the original midterm date. It is the responsibility of the student to inform the professor *as soon as possible* of his or her need to make-up a midterm examination.

Neither the Professor nor the TA is responsible for missed lecture or lab materials. Students are advised to find a partner in the class who may be able to share notes. Students missing more than one week of course materials are advised to seriously consider take a medical, bereavement or other leave of absence from the University.

Special Needs:

Students with special needs must inform the professor and teaching assistant during the first week of classes. Special needs must be accompanied by appropriate documentation.

Contacting Your Instructor:

Neither the professor nor the teaching assistants will respond to emails that do not identify the student as a participant in this course. The Professor prefers to be contacted via email using the Blackboard email function.

Use of Blackboard:

The Professor will post lecture notes to Blackboard after they are presented in class and before the midterm examination for that material. Blackboard may also be used to contact the professor, teaching assistants, and other members of the course. Please note that any interim grade calculated by Blackboard may not be indicative of your performance in the course. Students should consult the weightings and grading scale in the course outline to determine what grade they are achieving. Any questions on this matter should be directed toward the professor