

GEOGRAPHY 5712

Paleoenvironmental Field Methods for Geographers

3 credit hours

SUMMER SEMESTER 2023 SYLLABUS

Class Meetings: June 5-14 field course in Range Creek Canyon, Utah

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Recommended Text: *Reconstructing Quaternary Environments* (2nd edition) by J. J. Lowe and M. J. C. Walker, Pearson Prentice Hall, 1997. ISBN: 0582101662. (\$49 new; \$22 used on Amazon.com)

Catalog Description of Course

GEOG 5712 Paleoenvironmental Field Methods for Geographers (3) Prerequisite: GEOG 3200 or instructor consent. This course will be conducted in conjunction with the University of Utah's summer program in archaeological field methods (ANTH 5712), held at Range Creek Canyon, Utah. This ten-day field course is designed to teach methods used by paleo-researchers for reconstructing past environments on a local to regional scale. Students will receive training in a variety of field techniques including survey, mapping, site description, and soil identification. Paleoenvironmental methods currently being applied in Range Creek include packrat midden analysis, bog and sediment coring, dendrochronology/dendroclimatology, and alluvial stratigraphy, and students will participate in actual data collection contributing to the current project.

- (a) Participants must provide their own health insurance, work gloves, a journal notebook, basic personal camping equipment ([scroll down to Living Arrangements](#)) you DO NOT need to purchase the required equipment for Paleo Field Methods, and transportation to the [Utah Museum of Natural History](#). A signed waiver of liability is required.

Introduction Students in this course will work with archaeologists and archaeological students to understand paleoenvironmental changes over the past ~1500 years that may have influenced the Fremont Culture in Range Creek Canyon and the region at large. Emphasis will be focused on developing high-resolution records that can track demographic and technological shifts in Fremont populations that are revealed by archaeological research. Students will participate in real-world exercises and data collection that will add to the existing database of climatic and environmental change records in Utah and the desert Southwest. The course will include instruction in the tools and concepts that paleoenvironmental researchers use to reconstruct past environments, such as collection of packrat middens, sediment coring of bogs and lakes, coring of trees, examination of alluvial stratigraphy, archaeological excavation, and more.

Course Suggestions and Objectives

This class is a graduate-level class and should provide a solid grounding in the techniques of Quaternary investigations for students to apply to their own field sites and research. In addition to learning discipline-specific information, I expect that you will practice all your well-developed academic skills including the following: 1) using critical thinking skills to assess the validity and applicability of information we discuss, 2) getting the most out of readings, 3) finding information on your own, 4) sharing your thoughts and insights with the group in every class period, and possibly most importantly 6) developing your own research questions.

Students should expect comfortable but relatively primitive living conditions. We will be camping at the Wilcox ranch, which was a working ranch until a few years ago. Students are expected to provide their own camping equipment (personal tents, sleeping bags and pads, etc.). Meals during the ten-day work sessions will be prepared by a professional cook. Water, toilets, and field equipment will be provided by the field program. All students will be expected to assist in the daily camp chores required to keep a field camp running smoothly. For more information on living arrangements,

physical requirements, and logistical arrangements please see the [University of Utah Anthropology Department Field School website](#).

Grading

Grading for Geog 5712 will be based on the following:

- (b) Participation in all field activities, including operation and maintenance of all field equipment, and recording of site data;
- (c) Participation in group discussions, with assigned readings, demonstrating sound understanding of concepts and techniques of paleoenvironmental research;
- (d) Completion of an assigned field problems, including mapping, plans for data collection, preparation, and processing to obtain actual paleoenvironmental data.

TENTATIVE FIELD COURSE SCHEDULE

DAY	DATE	
M	6/5	Orientation to Range Creek Canyon & paleoenvironmental problems
T	6/6	Field notes, site description, writing exercises
W	6/7	Maps & mapping, orienteering, GPS, GIS
Th	6/8	Total stations & data loggers
F	6/9	Site survey & data collection- packrat middens
S	6/10	Site survey & data collection- bog coring
Su	6/11	Site survey & data collection- dendroclimatology
M	6/12	Site survey & data collection- plant survey
T	6/13	Paleoenvironmental problem (site to be selected)
W	6/14	Wrap-up & camp breakdown

Guiding questions for considering our research focus: As you work through your learning process about the rationale behind paleoenvironmental methods, you should apply your growing knowledge to the following guiding questions. As the course progresses, you should be able to address these questions in greater detail and with deeper understanding. Your instructors will always be available to discuss these concepts with you as you develop your personal models of the processes involved.

1. Describe in detail all the geomorphic processes in action in Range Creek Canyon. What forces are in action? How constant or episodic are these actions? What is the relative rate of these various processes? How do you know?
2. Within this geomorphic setting, where can paleoenvironmental data be archived? Describe the process by which these data are preserved. How do we determine a chronology? What are the limitations/ advantages of these various data? How do we interpret past environments from these archives?
3. What human actions can change geomorphic processes in Range Creek? How do these actions modify the processes? Which of these actions could have taken place prehistorically? Historically?
4. Concerning alluvial sediments, what do data about clastic size fraction, shape, sorting, stratification, imbrication, cross-bedding, and other details tell us about stream processes?
5. Concerning biogeography, describe the floral communities in Range Creek. How do they vary throughout the Canyon?

University of Utah Standards of Academic Conduct

All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from and class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee.

University of Utah Center for Disability Services

The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

Addressing Sexual Misconduct

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, SSB 328, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Student Names & Personal Pronouns

Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name" (if previously entered by you in the Student Profile section of your CIS account, which managed can be managed at any time). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class or on assignments. Please advise me of any name or pronoun changes so I can help create a learning environment in which you, your name, and your pronoun are respected. If you need any assistance or support, please reach out to the LGBT Resource Center. https://lgbt.utah.edu/campus/faculty_resources.php

Diversity/Inclusivity

It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you. (Source: University of Iowa College of Education)

Undocumented Student Support Statement

Immigration is a complex phenomenon with broad impact—those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families. To learn more, please contact the Dream Center at 801.213.3697 or visit dream.utah.edu.

Wellness Statement

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776. Rates of burnout, anxiety, depression, isolation, and loneliness have noticeably increased during the pandemic. If you need help, reach out for [campus mental health resources](#), including counseling, trainings and other support.