

GEOGRAPHY 5280/6280

Quaternary Environments: Deep History of the Desert Southwest

GEOG 5280/6280 - 001 3 credit hours

FALL SEMESTER 2019 SYLLABUS

Class Meetings: 8:35 - 11:35 AM Friday and field trips

- **Instructor:** Larry Coats
- **Office telephone number:** 587-9325
- **E-mail:** larry.coats@geog.utah.edu

Office hours: 9:00-10:30 AM Tuesday and 12:30-2:00 PM Thursday, or by appointment (**Bld. 73, Rm 214**).

Recommended Text: *Reconstructing Quaternary Environments* (2nd edition) by J. J. Lowe and M. J. C. Walker, Pearson Prentice Hall, 1997. ISBN: 0582101662. (\$47.19 on Amazon.com)

Catalog Description of Course

5280/6280 Quaternary Environments: Deep History of the Desert Southwest (3) Prerequisite: GEOG 3200 or instructor consent. Graduate students should take GEOGR 6280 and will be held to higher standards and/or more work. The Quaternary designates the Earth's most recent geomorphic episodes, and Quaternary-aged deposits contain a rich record of environmental changes that have occurred over the past ~1.9 million years. These deposits are preserved in caves, bogs, lakes, alluvium, glaciers, ocean sediments, and archaeological features, so Quaternary scientists must employ multidisciplinary methods to find, recover, date, and analyze materials to reveal information about past climates and biogeography. Students in this class will visit field sites where Quaternary deposits are preserved, learn field methods, and study theories for developing chronologies, analyzing data, and interpreting results. These data are used to provide insight on climate and environmental changes that have affected humans and other organisms in the past, and can shed light on changes that are inevitable going forward into the future.

Introduction

Students in this course will examine geomorphic and sedimentary evidence of annual to multi-millennial environmental change in Utah, the Great Basin, and the Colorado Plateau, in the contexts of environmental change elsewhere in North America and globally. Students will also examine conceptual and methodological tools for reconstructing Earth system history from a variety of natural archives, particularly in the late Quaternary. GEOG 5280 is an elective for the Department of Geography [Ecology and Biogeography Emphasis](#)

Course Suggestions and Objectives

This class is a graduate-level class and should provide a solid grounding in the literature and techniques of Quaternary investigations for students to apply to their own research and field sites. 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 the papers you read, 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.

Grading

Grading for Geog 5280/6280 will be based on the following:

- (a) Participation on field trips (requiring signed waiver of liability)
- (b) Two 1-hour exams on the dates indicated (open-book/open notes)
- (c) Two short (10 minute) presentations based on research literature (including handouts)
- (d) One longer (20 minute) presentation based on individual research (including handouts)
- (e) Daily participation in discussions on course readings and topics
- (f) Daily quizzes over course readings

2 Exams	40%
2 Short presentations	10%
1 Long presentation	10%
Participation	30%
<u>Quizzes</u>	<u>10%</u>
Total	100%

TENTATIVE SEMESTER SCHEDULE

<u>DAY</u>	<u>DATE</u>	<u>DISCUSSION TOPIC</u>	<u>READINGS</u>
F	8/23	Course Introduction	Lowe & Walker, Ch. 1
F	8/30	Defining the Quaternary Period	Morrison & Kukla, 1998 Pillans, 2004; Ogg, 2004
M	9/2	<i>LABOR DAY HOLIDAY</i>	
F	9/6	Glacial landforms <i>Last day to drop/delete</i>	Lowe & Walker, Ch. 2.3 Osborn & Bevis, 2001
F	9/13	The Quaternary Sedimentary Record	Lowe & Walker, Ch. 3
F	9/20	(Presentations) Historical Perspectives on Q Strat	Assigned readings
F	9/27	Biologic evidence	Lowe & Walker, Ch. 4
F	10/4	(Presentations) Dating Methods	Smart, Ch. 1
M-F	10/7-10/11	<i>FALL BREAK- NO CLASS</i>	
F	10/18	EXAM #1 (open-book/open notes) <i>Last day to withdraw</i>	
F	10/25	Geoarchaeology- part 1	Benson et al., 2006; 2007
F	11/1	Ice Cores- correlating climate records	Bradley, Chap. 6; Lüthi et al., 2008; Steffensen et al., 2008

F	11/8	Danger Cave Field Trip	Rhode, et al., 2006; Leonard et al., 2002; Jennings, 1957
F	11/15	Lake & Glacial Sediments	Oviatt et al., 1992; Godsey et al., 2005 ; Madsen & Currey, 1979; Osborn & Bevis, 2001
F	11/22	Presentations	Posted handouts
Th/F	11/28-11/29	<i>THANKSGIVING BREAK- No Class</i>	
T	12/5	UU classes end	

Take Home Final Exam: Due Wednesday, December 11

Possible Long Presentation Topics

- *Quaternary environments in the tropics- proxies and evidence
- *Wasatch Range glaciations and Lake Bonneville high stands- out of sync?
- *Late Pleistocene extinctions- what, where, when?
- *Last Interglacial (LIG) - a good proxy for a Greenhouse Earth? Why or why not?
- *Greenland ice cores vs. Antarctic ice cores- compare and contrast
- *Quaternary human populations in Europe
- *The peopling of North America- pre-Clovis evidence and hypotheses

University of Utah Attendance Policy

The University expects regular attendance at all class meetings. **You are not automatically dropped from your classes if you do not attend.** You must officially drop your classes by the published deadline to avoid a "W" on your record.

You are responsible for satisfying the entire range of academic objectives, requirements and prerequisites as defined by the instructor. If you miss the first 2 class meetings, or if you have not taken the appropriate requisites, you may be required to withdraw from the course.

If you are absent from class to participate in officially sanctioned University activities (e.g. band, debate, student government, intercollegiate athletics), religious obligations, or with instructors approval, you will be permitted to make up both assignments and examinations.

University of Utah Standards of Academic Conduct

In order to ensure that the highest standards of academic conduct are promoted and supported at the University, students must adhere to generally accepted standards of academic honesty, including but not limited to refraining from cheating, plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating.

University of Utah definition: "Plagiarism" means the intentional unacknowledged use or incorporation of any other person's work in, or as a basis for, one's own work offered for academic consideration or credit or for public presentation. Plagiarism includes, but is not limited to, representing as one's own, without attribution, any other individual's words, phrasing, ideas, sequence of ideas, information or any other mode or content of expression.

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 the class, reasonable prior notice needs to be given to the Center for Disability Services (<http://disability.utah.edu/index.htm>), 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

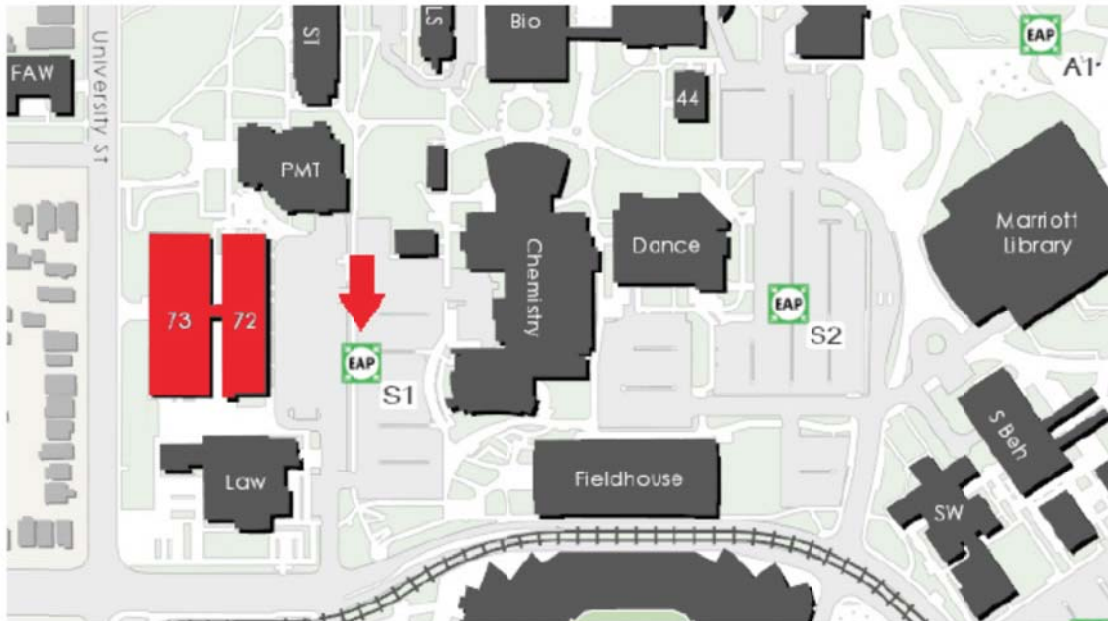
Safety & Wellness

Your safety is our top priority. In an emergency, dial 911 or seek a nearby emergency phone (throughout campus). Report any crimes or suspicious people to 801-585-COPS; this number will get you to a dispatch officer at the University of Utah Department of Public Safety (DPS; dps.utah.edu). If at any time, you would like to be escorted by a security officer to or from areas on campus, DPS will help — just give a call.

The University of Utah seeks to provide a safe and healthy experience for students, employees, and others who make use of campus facilities. In support of this goal, the University has established confidential resources and support services to assist students who may have been affected by harassment, abusive relationships, or sexual misconduct. A detailed listing of University Resources for campus safety can be found at <https://registrar.utah.edu/handbook/campussafety.php>

Your well-being is key to your personal safety. If you are in crisis, call 801-587-3000; help is close. The university has additional excellent resources to promote emotional and physical wellness, including the Counseling Center (<https://counselingcenter.utah.edu>), the Wellness Center (<https://wellness.utah.edu>), and the Women's Resource Center (<https://womenscenter.utah.edu>). Counselors and advocates in these centers can help guide you to other resources to address a range of issues, including substance abuse and addiction.

CSBS EMERGENCY ACTION PLAN



BUILDING EVACUATION

EAP (Emergency Assembly Point) – When you receive a notification to evacuate the building either by campus text alert system or by building fire alarm, please follow your instructor in an orderly fashion to the EAP marked on the map below. Once everyone is at the EAP, you will receive further instructions from Emergency Management personnel. You can also look up the EAP for any building you may be in on campus at <http://emergencymanagement.utah.edu/eap>.



CAMPUS RESOURCES

U Heads Up App: There's an app for that. Download the app on your smartphone at alert.utah.edu/headsup to access the following resources:

- **Emergency Response Guide:** Provides instructions on how to handle any type of emergency, such as earthquake, utility failure, fire, active shooter, etc. Flip charts with this information are also available around campus.
- **See Something, Say Something:** Report unsafe or hazardous conditions on campus. If you see a life threatening or emergency situation, please call 911!

Safety Escorts: For students who are on campus at night or past business hours and would like an escort to your car, please call 801-585-2677. You can call 24/7 and a security officer will be sent to walk with you or give you a ride to your desired on-campus location.