

## HISTORICAL ECOLOGY AND GEOARCHAEOLOGY

GEOG 5450.352

Precursor of GEOG 5063 Geoarchaeology and Environmental History

Tue 4:30-7:10 pm

SCOT 319

Instructor: Carlos E. Cordova

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Office: 225 Scott Hall

Office Hours: 2:00-3:30 pm Tue, Th.

### **Background and course description**

Geoarchaeology is an interdisciplinary field aimed at reconstructing environments and their interaction with past human societies. Archaeology studies past societies, whereas geoarchaeology puts them in an environmental context. Geoarchaeological research incorporates field and laboratory methods, as well as archival and archaeological research.

Geoarchaeology has strong ties with geography due to the spatial and temporal aspects of the environment-human relations. Because of its interdisciplinary nature, geoarchaeology incorporates scientists with backgrounds in the earth and life sciences as well as anthropology and history.

This course reviews the theoretical and methodological aspects of geoarchaeology and typical cases of interdisciplinary research in different geomorphic contexts and cultural groups (early hominids, hunter gatherers, agriculturalists, and urbanites) from around the world.

### **Pre-requisites**

There are no pre-requisites for this course. The main textbook (Goldberg and McPhail, 2006) is designed to get students started from a beginner level and cover any deficiency in earth sciences and physical geography.

### **Textbooks and readings**

Part 1 Basic reading:

1. Goldberg, P. and MacPhail, R. 2006. *Practical and theoretical Geoarchaeology*. Blackwell Publishing.

Part 2 Basic reading:

2. Redman, C. 2001, *Human impact on ancient environments*. U of Arizona Press.
3. Cordova, C. 2007. *Millennial landscape change in Jordan: Geoarchaeology and Cultural Ecology*. U. of Arizona Press.

4. Additional readings provided in class by the instructor

## Undergraduate course grading

	Percent of final grade
Mid-term exam (take-home)	30
Research paper	70
Total	100

### Grading scale

Letter grades will be assigned on the following basis:

A	≥90%
B	80%
C	70%
D	60%
F	<60%

### Mid-Term exam

Take home exam. The student will be given a topic and a series of questions to answer based on the contents of class and readings.

### Research paper

This paper should include an original research topic related to the class. Graduate students are encouraged to write papers on topics for their theses or dissertations if they relate to the course topics. The paper should include a clear problem statement, objectives, and methodology. The paper should be between 4000 and 6000 words. See undergraduate research paper above for rules on style and references.

## Topics and Weekly Schedule

\* Asterisk means that the instructor will be absent

### Week 1

**Tue** An introduction to geoarchaeology. Review of textbooks and readings

**Th** Interpreting the landscape: geoarchaeology as a forensic science (Briggs)

### Week 2

**Tue** Measuring time and interpreting landscape change.

**Th** The peopling of the Americas: Theories, controversies and recent research

### Week 3

**Tue** The meteor theory and the extinctions at the end of the Pleistocene (Firestone)

**Th** Dr. Alex Simms (geology) presentation\*

### Week 4

**Tue Th** The meteor theory and the extinctions at the end of the Pleistocene (NGS video)\*

### Week 5

**Tue** No class.

**Th** Introductory concepts in geoarchaeology: sediments, stratigraphy, and soils (Goldberg and MacPhail)

### Week 6

**Tue** Soils in geoarchaeology (Goldberg and MacPhail)

**Th** Geoarchaeology in the Great Plains I (Holliday)

### Week 7

**Tue** Slopes and slope deposits: and the meaning of 'stability' (Goldberg and MacPhail)

**Th** The Arroyo Problem in the American Southwest (TBA)

### Week 8

**Tue** Rivers, lakes, swamps and marine coasts: coping with rapidly changing environments I (Goldberg and MacPhail).

**Th** Rivers, lakes, swamps and marine coasts: coping with rapidly changing environments II (Goldberg and MacPhail).

### Week 9

**Tue** Aeolian environments: windblown sand and dust and what it means to humans (Goldberg and MacPhail).

**Th** Climatic and human impacts on the landscape (Goldberg and MacPhail).

### Week 10

**Tue** Geoarchaeology of cave deposits (Goldberg and MacPhail).

**Th** A look into Hall's Cave (Toomey and others).

**Week 11**

**Tue** Geoarchaeological fieldwork.

**Th** Geoarchaeology and civilizations of Mesoamerica: Central Mexico (A. Borejsza).

**Week 12**

**Tue** Geoarchaeological labwork (Goldberg and MacPhail).

**Th** Geoarchaeology and civilizations of Mesoamerica: The Maya Region (Beach)

**Week 13**

**Tue** The Aztec and Early Colonial transformation of Central Mexico (Cordova and Parsons)

**Th** The Geoarchaeology in the American Southwest (Sandor)

**Take-home exam given on Thursday**

**Week 14**

**Tue** Geoarchaeology and volcanism (TBA)

**Th** Environmental crisis at the end of the 3<sup>rd</sup> Millennium BC (Cordova)

**Take home exam due**

**Week 15**

**Tue** The Azraq Oasis Project (Cordova et al.)

**No class on Thursday. Fall Break-Thanksgiving Holiday**

**Week 16**

**Tue** On becoming a geoarchaeologist  
**Research papers due**

**Field trip:** Date to be determined. Possible destinations: Council Grove, KS/Western OK and NE New Mexico.