GEOARCHAEOLOGY: METHODS AND CONCEPTS
ARCLG104
Term I, 2016-7,
Masters Option, 15 credits
Turnitin Class ID: 3225939
Turnitin Password: IoA1617
Assessment deadlines: 12 December 2016, 26 January 2017

Co-ordinator: Dr Manuel Arroyo-Kalin
E-mail: m.arroyo-kalin@ucl.ac.uk - Room 401, Tel 02076797523 (Internal 27523)

1. OVERVIEW

Short description

This course provides a broad overview of the discipline of geoarchaeology and its application in a range of different environmental settings and archaeological contexts. Specifically, the course illustrate how geoarchaeology draws on earth-scientific thinking, approaches, and techniques to tackle archaeological questions.

Week-by-week summary

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<tr>
<th>Week (starts on)</th>
<th>Wednesday</th>
<th>Thursday</th>
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<tr>
<td>I (3 Oct)</td>
<td>NO LECTURES</td>
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<tr>
<td>II (10 Oct)</td>
<td>1-2pm L1 Course Introduction * 2-3pm S1 Approaches to geoarchaeology *</td>
<td>1-3pm L2 Soils and geoarchaeology</td>
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<tr>
<td>III (17 Oct)</td>
<td>1-3pm P1 Soil micromorphology I **</td>
<td>1-2pm L3 Landforms and processes 1 2-3pm S2 Geoarchaeology of glacial and periglacial processes</td>
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<tr>
<td>IV (24 Oct)</td>
<td>1-4pm P2 Self-directed study time on soil micromorphology</td>
<td>1-2pm L4 Landforms and processes 2 2-3pm S3 Geoarchaeology of coastal processes</td>
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<tr>
<td>V (31 Oct)</td>
<td>1-4pm P3 Soil micromorphology II **</td>
<td>1-2pm L5 Sediments and palaeosols 2-3pm S4 Geoarchaeology and stratigraphy</td>
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<tr>
<td>VI (14 Nov)</td>
<td>1-4pm P4 Introduction to bulk sample analyses</td>
<td>1-2pm L6 Occupation deposits 2-3pm S5 Geoarchaeology and soils</td>
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<td>VII (21 Nov)</td>
<td>1-3pm P5 Soil micromorphology III **</td>
<td>1-2pm L7 Human Impact and agrarian landscapes 2-3pm L8 The Anthropocene</td>
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<tr>
<td>VIII (28 Nov)</td>
<td>1-2pm S6 Experimental and ethno-geoarchaeology *</td>
<td>1-2pm S7 Geoarchaeology of Caves 2-3pm S8 Geoarchaeology of Tells</td>
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<tr>
<td>IX (5 Dec)</td>
<td>1-5pm P6 Geo-archaeology project</td>
<td>1-2pm S9 Human Impact and agrarian landscapes 2-3pm S10 Anthrosols</td>
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<tr>
<td>X (12 Dec)</td>
<td>1-5pm P7 Geo-archaeology project</td>
<td>1-3pm S11 Synthesis: The Geoarchaeological Café</td>
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L=Lecture (Room 410, IoA); S=Seminar (Room 410, IoA); P=Practical (Room B50, IoA).
* L1, S1 and S6 will take place at Gordon Square (26) G09; ** South Wing Room 42

Assessments: SCIENTIFIC BLOG due on 12 December 2016 LAB REPORT DUE on 26 January 2017
Basic texts


Methods of assessment: this course will be assessed as follows:
   a) A max. 2000-word scientific blog, contributing 40% of the course grade, and
   b) A max. 2000-laboratory report, contributing 60% of the course grade.

Please see Assessment Tasks (below) for further details about individual assessments

Teaching methods: The course is organised as a series of lectures, seminars, and laboratory sessions. All meetings are compulsory and most have recommended readings. Lectures provide general overviews of key geoarchaeological themes: the more you read beforehand, the better you will understand the subject matter. The finer details of specific themes are expanded and discussed during seminars, where students are expected to have undertaken at least two thirds of the readings for each session (sometimes reading may be assigned to groups of students – this means that students are expected to have read at least all of the specifically assigned readings). Seminars are a crucial part of the course and students should ensure the pay attention to specific inferential pathways employed in different case studies. Laboratory practicals – which include work with bulk sediment samples and an introduction to the use of soil and sediment micromorphology in geoarchaeological research – provide demonstrations of how specific techniques are used. These demonstrations are essential for students to understand how geoarchaeology develops and analyses its basic data. Lessons and insights from all three types of meetings (lectures, seminars and practicals) will be used when producing assessed coursework.

Workload: There will be 8 hours of lectures, 9 hours of seminars, and 18 hours of laboratory practicals. Students can be expected to undertake around 63 hours of reading for lectures, seminars and laboratory tutorials, as well as additional 55 hours producing assessed work. This adds up to a total workload of 150 hours for the course.

Prerequisites: This course does not have a prerequisite and does not demand a strong a priori background in science.

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1 Word counts exclude the title page, the table of contents, any lists of figures and tables, abstract, preface, acknowledgements, bibliography, lists of references, captions, contents of tables and figures, and appendices.
2. AIMS, OBJECTIVES AND ASSESSMENT

Aims and Objectives: This course introduced Geoarchaeology at the Masters Level. The aim of the course is to provide students with the knowledge base and practical tools necessary to critically evaluate geoarchaeological research, formulate geoarchaeological research questions, and undertake entry-level geoarchaeological investigations.

On successful completion of this course, students will

- Understand the main concepts, themes, and approaches that make up the discipline of geoarchaeology, including how it relates to broader archaeological and earth science concerns.
- Understand how a geoarchaeological perspective can be employed to formulate and tackle archaeological research questions in different landscape contexts.
- Acquire a comprehensive overview of the practical approaches that can be employed to study sediments and soils in the course of geoarchaeological research.
- Acquire practical laboratory skills to implement some of these approaches, specifically with a view to undertaking geoarchaeological research during and after the postgraduate course.

Learning Outcomes: A range of generic skills will be sharpened or developed during the course, including summarising scientific papers, the manipulation of data with spreadsheets, and technical report writing based on laboratory work. In addition, those students who did not possess a background in science will find that they now do!

Assessment tasks:

A. The Assessed Scientific Blog (deadline: 12 December 2016) is an incremental (week-by-week) critical digest of scientific news (typically current or recently published papers) on a specific topic. To start your blog, follow the relevant link on the Moodle webpage of the course.

Rather than simply a collection of summaries of papers, blogs need to be thematically coherent, use and reference illustrations as appropriate, link to other scientific online resources, and be a personal account of what is being learned. The blog should be approached incrementally by adding approximately 250 words and discussing at least one published paper per week. A number of themes can be chosen but they must be geoarchaeological in nature and their treatment should distil critically to primary observations. Themes may include particular depositional archaeological environment (e.g. “alluvial geoarchaeology in southern England”), or site formation cases (e.g. “Tell geoarchaeology: only in the Middle East?”), “the geoarchaeology of shell middens in comparative perspective”, “ethnogeoarchaeology of xxxx”), exposing the main current research problems, challenges, and methods. Themes may also be a critical review of a specific methodology used in geoarchaeology (e.g. “geoarchaeological studies of past human impact”, “soil micromorphology in periglacial archaeology”).

Students should register a blog title with the course coordinator (by email) no later than Monday 24 October 2016. Formative feedback will be offered to students starting the week following reading week provided that by then each blog has expanded to a minimum of 1000 words.

B. The Assessed Laboratory Report (deadline: 26 January 2017) will consist of sediment descriptions, data from laboratory analyses and micromorphological observations, and a summary discussion of results. Other aspects of both assignments, as well as possible approaches to them, will be discussed in class in advance of the submission deadline.
3. SCHEDULE and SYLLABUS

Week I.  (starts on 3 October)

No laboratory, no lectures.

Week II.  (starts on 10 October)

**Wednesday 12 October**

1-2pm **L1. Course briefing and Introduction**

Following a briefing that outlines the structure of ARCGL104, the initial lecture will discuss the broad scope of geoarchaeology in interdisciplinary perspective, including some of the methodological and technical approaches that characterise its practice.

*Readings*


On how archaeology and geology developed together:


The following books contain important position statements about what geoarchaeology is. Over the course of the next weeks, students should familiarise themselves with these positions:


2-3pm **S1. Approaches to Geoarchaeology**

*Seminar readings*


Thursday 13 October

Week III.  (starts on 17 October)

1-3pm L2. Soils

This lecture sets out the contrast between soils and sediments and reviews key types of soil forming dynamics, providing a background to assess the integrity of environmental archives lodged in soils and sediments.

Required readings:


Other reference works on soils:


Wednesday 19 October

1-3pm P1. Soil micromorphology I

This tutorial will introduce the main features of soil and sediment micromorphological analysis as employed within geoarchaeological research. The readings below are important for this and other micromorphology tutorials.

Required readings:


Note the following important reference texts:


Thursday 20 October

1-2pm L3. Landforms and surface processes I

In this lecture we examine a broad range of earth surface processes and the landforms they produce and modify.

Required readings:


Additional readings:

2-3pm S2. Geoarchaeology of glacial and periglacial processes


Week IV. (starts on 24 October)

Wednesday 26 October

1-4:30pm P2. Self-directed study time on soil micromorphology

Students will be provided with materials to study and describe on their own.

Thursday 27 October

1-2pm L4. Landforms and surface processes 2


**2-3pm S3. Geoarchaeology of coastal processes**

**Required readings:**


**Week V.  (starts on 31 October)**

**Wednesday 2 November**

**1-3pm P3. Micromorphology practical II**

Dr Patrick Quinn will introduce minerals and rocks and their study in thin section. Students will apply these to soil and sediment micromorphological analysis.

**Required readings:**


Important reference texts:


Thursday 3 November

1-2pm L5. Sediments and palaeosols


2-3pm S5. Geoarchaeology and stratigraphy

Seminar readings


Week VI. (starts on 14 Nov)

**Wednesday 16 November**

*1-4pm P4. Introduction to bulk sample analyses*

In this tutorial the procedures to undertake basic physical and chemical characterisation of sediments in the laboratory will be demonstrated. Students will have to return to the lab after the practical in order to do time-sensitive measurements on samples.

*Required readings.*


**Thursday 17 November**
1-2pm L6. Occupation deposits

Required readings:

2-3pm S5. Geoarchaeology and soils

Soils in geoarchaeology
Week VII.  (starts on 21 Nov)

Wednesday 23 November

1-3pm P5. Soil micromorphology practical III

This tutorial will continue demonstrating the main features of soil and sediment micromorphological analysis as employed within geoarchaeological research. See previous tutorials for readings.

Thursday 24 November

1-2pm L7. Human Impact on the landscape


2-3pm L8. The Anthropocene

The Anthropocene has attracted the significant attention of earth scientists, climate modelers, and archaeologists. In this lecture we examine the central tenets of the Anthropocene hypothesis.

Essential Reading:


Week VIII.  (starts on 28 November)

Wednesday 30 November

1-2pm S6: Experimental and Ethno-Geoarchaeology

Students with odd student ID number please tackle Experimental Archaeology readings; those with even student ID number please focus on Ethno-Geoarchaeology readings

Experimental Geoarchaeology


**Ethnogeoaarchaeology**


**Thursday 31 November**

**1-2pm S7. Cave Geoarchaeology**


Case studies:


### 2-3pm S8. Tells and Mounds


**Case Studies:**


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**Week IX.** (starts on 5 December)

**Wednesday 7 December**

1-5 pm P6. Assessed Geoarchaeology project

*During this session students will work on their assessed laboratory project.*

**Thursday 8 December**
1-2pm S9. Human Impact and agrarian landscapes


Various Authors (2005) Geoarchaeology Special Issue: Landscape and Land Use—Geoarchaeological Approaches to Human Impact, 20(2):


2-3pm S10. Anthrosols


**Week X.  (starts on 12 December)**

**Wednesday 14 December**

*P7. 1-5 pm Assessed Geoarchaeology project*

*During this session students will continue to work on their assessed laboratory projects.*

**Thursday 15 December**

*1-3pm S11. Synthesis: The Geoarchaeological Café*

*Coffee/tea and biscuits are on the house: during this meeting we will discuss the principal lessons gleaned from the course and clarify any doubts related to the assessed laboratory project.*
4. ADDITIONAL INFORMATION

LIBRARIES AND OTHER RESOURCES:
Use UCL Explore to identify where readings are found. Most of them are located in either the Archaeology or Science libraries. Students are asked to organise themselves in order to share in the loan of books of which only few copies are available. Please contact the course coordinator if a specific item cannot be found in UCL.

INFORMATION FOR INTERCOLLEGIATE AND INTERDEPARTMENTAL STUDENTS: Students enrolled in Departments outside the Institute should obtain the Institute’s coursework guidelines from Tina Paphitis (email t.paphitis@ucl.ac.uk), which will also be available on the IoA website.

HEALTH AND SAFETY: The Institute has a Health and Safety policy and code of practice which provides guidance on laboratory work. This code of practice is revised annually and the new edition can be consulted online. All work undertaken in the Institute is governed by these guidelines and students have a duty to be aware of them and to adhere to them at all times. This is particularly important in the context of the laboratory undertaken as part of this course.

INSTITUTE OF ARCHAEOLOGY COURSEWORK PROCEDURES
General policies and procedures concerning courses and coursework, including submission procedures, assessment criteria, and general resources, are available on the IoA website. It is essential that you read and comply with these. Note that some of the policies and procedures will be different depending on your status (e.g. undergraduate, postgraduate taught, affiliate, graduate diploma, intercollegiate, interdepartmental). If in doubt, please consult your course coordinator.

GRANTING OF EXTENSIONS: Note that there are strict UCL-wide regulations with regard to the granting of extensions for coursework. Note that Course Coordinators are not permitted to grant extensions. All requests for extensions must be submitted on a the appropriate UCL form, together with supporting documentation, via Judy Medrington’s office and will then be referred on for consideration. Please be aware that the grounds that are acceptable are limited. Those with long-term difficulties should contact UCL Student Disability Services to make special arrangements. Please see the IoA website for further information. Additional information is given here http://www.ucl.ac.uk/srs/academic-manual/c4/extenuating-circumstances/