

## Liverpool John Moores University

Title: ENVIRONMENTAL CHANGE  
Status: Definitive  
Code: **6307NATSCI** (121182)  
Version Start Date: 01-08-2021

Owning School/Faculty: Biological and Environmental Sciences  
Teaching School/Faculty: Biological and Environmental Sciences

| Team        | Leader |
|-------------|--------|
| Chris Hunt  | Y      |
| Tim Lane    |        |
| Jason Kirby |        |

**Academic Level:** FHEQ6      **Credit Value:** 20      **Total Delivered Hours:** 45  
**Total Learning Hours:** 200      **Private Study:** 155

### Delivery Options

Course typically offered: Semester 1

| Component | Contact Hours |
|-----------|---------------|
| Lecture   | 19            |
| Off Site  | 4             |
| Practical | 16            |
| Workshop  | 6             |

**Grading Basis:** 40 %

### Assessment Details

| Category | Short Description | Description                              | Weighting (%) | Exam Duration |
|----------|-------------------|--|---------------|---------------|
| Report   | Report 1          | Report based on field and practical work | 50            |               |
| Report   | Report 2          | Report based on field and practical work | 50            |               |

### Aims

*To examine, interpret and evaluate the evidence for Quaternary environmental change using appropriate proxy techniques and dating methods.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Utilise relevant field and laboratory methods to acquire, interpret and critically evaluate records of environmental change.
- 2 Explain and critically discuss the scientific principles and application of a range of dating methods.
- 3 Critically evaluate scientific literature to establish the mechanisms driving environmental change during the Quaternary.

## Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

|                              |   |   |
|------------------------------|---|---|
| Field and Practical Report 1 | 1 | 3 |
| Field and Practical Report 2 | 2 | 3 |

## Outline Syllabus

*Temporal framework for environmental change during the Quaternary and glacial/interglacial context. Archives of environmental change in both interglacial and glacial landscapes. Techniques for reconstructing past environmental change including field data collection, biological and non-biological methods. Acquisition and interpretation of palaeoecological data. Dating methods appropriate various Quaternary timescales and different sediment types (organic/non-organic). Consideration of the natural and anthropogenic mechanisms driving environmental change.*

## Learning Activities

This module comprises mixed learning methods. Key concepts are delivered in lectures and these themes are closely connected to the practical work. Field trips and laboratory classes are integral to developing practical skills, enhancing learning and to generate data so that coursework is embedded as part of learning activity. Workshops are used to provide a forum for discussion and revision sessions. Informal formative feedback is provided regularly in practical classes. Students are provided an opportunity to present and discuss draft reports for formative feedback in a workshop in advance of the report submission.

## Notes

A module investigating the environment and climate of the recent past (Quaternary), using appropriate proxy methods and dating techniques. The Quaternary is the most recent (from 2.6 million years ago to present) geological period and includes

dramatic climate changes (glacial and interglacial cycles). These climate changes have fundamentally affected the global environment, but particularly those areas directly impacted by the presence of former ice sheets, such as the British Isles. Huge migrations of plants and animals occurred in response to the changing temperature, landscape and availability of food resources. The late Quaternary period is particularly important because of the emergence and spread of modern humans throughout the globe. We will explore the evidence for past climate change in a variety of geographical settings. We will also consider the role of humans as drivers of environmental change and the emergence of the 'Anthropocene'. Students will apply field and laboratory practical techniques to establish the pattern of environmental change in contrasting landscapes, and learn how to interpret this information critically. Formative feedback is provided throughout the module, particularly in practical classes as datasets are developed. Students receive formative feedback on draft work as part of a coursework workshop.