



Module Specification

Earth Science

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Part 1: Information

Module title: Earth Science

Module code: USSKN5-15-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Health & Applied Sciences

Department: HAS Dept of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: The Earth 2023-24

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Planet Earth is a complex, interconnected system. In this module students will focus on studying the structure and dynamics of the Earth and the Earth's surface.

Features: Not applicable

Educational aims: See learning outcomes.

Outline syllabus: Specifically students will study:

Earth Materials

The make-up, natural characteristics and structure of the solid Earth.

Earth Dynamics

The dynamic geosphere, plate tectonics, weathering processes, erosional landforms and element release.

Soil Geoscience

Soil structure and function. The Biogeochemical Cycling of elements through the Earth system, the influence of these cycles on the wider dynamics of the Earth system and how these processes are linked with global change.

Natural Hazards (Prediction and Risk)

Volcanic, seismic, and future hazards arising from the dynamic Earth and global environmental change.

Environmental Analysis

Background and considerations for environmental sampling, sample storage, sample processing, sample extraction, sample analysis, spectroscopy, calibrations.

Experiential learning of the Earth system will be achieved through fieldwork, practical study and hands-on analysis. This will incorporate a comprehensive introduction to environmental analytical Instrumentation.

Specifically students will learn:

Techniques for measuring the physical, chemical, and biological parameters of soils and sediments. Laboratory analysis of field samples using a range of environmental analytical techniques.

Analysis and interpretation of environmental data.

The limitations and sources of error associated with the analysis of environmental samples (natural and perturbed) and analytical measurement techniques.

Part 3: Teaching and learning methods

Teaching and learning methods: See assessment strategy.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Discuss the physical, chemical and biological characteristics of rocks, soils and sediments

MO2 Explain the biogeochemical functioning of the Earth system and the dynamic processes that shape the Earth's surface, in particular soils and sediments

MO3 Understand the key processes linked with natural hazards

MO4 Describe and compare the use of contemporary analytical techniques utilised in the study of the Earth System and Environmental Science

MO5 Gain practical experience in a range of environmental analytical techniques

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 117 hours

Face-to-face learning = 33 hours

Total = 150

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/usskn5-15-2.html) via the following link <https://uwe.rl.talis.com/modules/usskn5-15-2.html>

Part 4: Assessment

Assessment strategy: Assessment 1 – Practical Report

A feature of the module will be a focus on analytical methodologies for studying the Earth system. Students will gain hands-on experience and skills using a range of scientific equipment and methods. To ensure the learning outcomes are met in this area the practical report will combine the results from a number of experimental studies that the students will undertake during the module. Students will be required to synthesise this new data to complete their final laboratory report. Whilst some of the data will be collected in groups the written assessment will be based upon individual work.

Assessment 2– Online Examination (24 hour submission window)

This module represents a core scientific module for those students who will be undertaking the Environmental Science programme and focussing on the solid Earth. As such the best way to assess a diverse range of scientific theory and knowledge will be through a written examination at the end of the module. Tutorial sessions (run at the end of lecture sessions) will focus on preparing students for the written examination.

Assessment tasks:**Report (First Sit)**

Description: Experimental report (2000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4, MO5

Examination (Online) (First Sit)

Description: Online exam (24 hour submission window)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Report (Resit)

Description: Experimental report (2000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4, MO5

Examination (Online) (Resit)

Description: Online exam (24 hour submission window)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Environmental Science [Frenchay] BSc (Hons) 2022-23

Environmental Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2022-23

Environmental Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2022-23

Environmental Science [Frenchay] MSci 2022-23

Environmental Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2021-22

Environmental Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2021-22

Environmental Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2021-22

Environmental Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2021-22