Module Specification

Earth Sciences

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Contents

Part 1: Information

Module title: Earth Sciences

Module code: UZVSL3-30-1

Level: Level 4

For implementation from: 2023-24

UWE credit rating: 30

ECTS credit rating: 15

Faculty: Faculty of Health & Applied Sciences

Department: HAS Dept of Social Sciences

Partner institutions: None

Field: Health, Community and Policy Studies

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: In addition to Learning Outcomes, the educational experience may explore, develop, and practise but not formally discretely assess the following:

Working as a team member

Research and study skills

Referencing skills

Outline syllabus: SCIENTIFIC INVESTIGATION TECHNIQUES: hypotheses and testing with t-test and chi-squared, decisions, use of standards. Modelling mathematical systems; relationships using equations and formulae, mathematics in science, linear relationships, exponential and logarithmic functions. Science variability; experimental uncertainty, normal distributions, Binomial and Poisson distributions, Spearman Rank Correlation.

THE EARTH AS A SYSTEM: The processes operating within and between these spheres and their interconnectivity.

EARTH PROCESSES: The study of the earth's structures, materials and processes. The chemical and physical composition of the lithosphere, hydrosphere, atmosphere and biosphere. The role of the Earth's systems in supporting life and human activities.

ENVIRONMENTAL ISSUES: The impacts on the environment of resource exploitation and waste disposal. Introduction to the major environmental issues facing the Earth system: limits to growth and sustainability.

Part 3: Teaching and learning methods

Teaching and learning methods: 300 hours total study time

102 hours scheduled learning

Scheduled learning will typically include lectures, seminars, case studies, external visits and an interactive forum. All students are expected to attend a series of tutorials.

Introductory lectures are supported by case studies, visits and practical workshops:

300 hours study time of which 102 hours will represent scheduled learning. Scheduled learning includes lectures, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; external visits; work based learning; supervised time in studio/workshop.

Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion. Student study time will be organised each week with a series of both essential and further readings and preparation for practical workshops. It is suggested that preparation for lectures, practical workshops and seminars will take 4 hours per week with a further expectation of 24 hours preparation for Poster defence, 24 hours used in essay assignment planning and completion and 30 hours study in preparation for the written examination.

This module will be taught across both semesters on one day per week allowing both full and part time routes to be timetabled effectively.

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

MO1 Demonstrate mathematical and statistical rules and appreciate the uncertainties of statistics in science

MO2 Identify the role of chemistry, physics and biology that form the basis of our understanding of the Earth's processes and current environmental issues

MO3 Comprehend the earth as a dynamic system

MO4 Understand the importance of human impact upon Earth's systems

MO5 Explain the cycling of matter and the flows of energy into, between and within the lithosphere, hydrosphere, atmosphere and biosphere relevant to Environmental Health

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 198 hours

Face-to-face learning = 102 hours

Total = 300

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/index.html

Part 4: Assessment

Assessment strategy: A range of assessment techniques will be employed to ensure that learners can meet the breadth of learning outcomes presented in this module alongside the ability to demonstrate transferable skills e.g. communication skills.

Practical Techniques Portfolio: A range of practical chemical techniques and investigations will be undertaken to explore underlying scientific principles. This will include chemical analysis and interpretation of data.

Assessed Practical: One laboratory technique and data analysis exercise is assessed under examination conditions.

Investigative Report: Students will investigate earth systems within their local area and present their findings in a report format to cover the key areas of lithosphere, hydrosphere, atmosphere and biosphere.

Scientific Investigation Techniques Portfolio: A series of mathematical and data analysis techniques relevant to public and environmental health including statistical analysis. The approach to this assessment takes the form of weekly exercises undertaken by the student to build a portfolio of evidence.

Weekly submission is encouraged by allocation of marks as part of the assessment scheme.

Assessment tasks:

Practical Skills Assessment (First Sit)
Description: 1 hour assessed practical
Weighting: 10 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2, MO5

In-class test (First Sit)
Description: Scientific investigation techniques portfolio: in class written test (mathematical calculations)
Weighting: 30 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2

Portfolio (First Sit)
Description: Practical Techniques Portfolio (short answers in chemistry and maths)
Weighting: 30 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2

Report (First Sit)
Description: 1500 word investigative report
Weighting: 30 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Practical Skills Assessment (Resit)
Description: 1 hour assessed practical
Weighting: 10 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2, MO5

In-class test (Resit)
Description: Scientific investigation techniques portfolios: in class written test (mathematical calculations)
Weighting: 30 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2

Portfolio (Resit)
Description: Practical techniques portfolio (short answers in chemistry and maths)
Weighting: 30 %
Final assessment: No
Group work: No
Learning outcomes tested: MO2

Report (Resit)
Description: 1500 word investigative report
Weighting: 30 %
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: