Module Specification

Environmental and Field Techniques

Version: 2025-26, v3.0, Approved

Contents

Part 1: Information

Module title: Environmental and Field Techniques

Module code: USSK5G-30-2

Level: Level 5

For implementation from: 2025-26

UWE credit rating: 30

ECTS credit rating: 15

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

Module type: Module

Pre-requisites: Field Skills 2025-26

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module allows students to develop practical skills in field research, field techniques and data analysis in addition to understanding the limitations of these approaches and being introduced to contemporary environmental technologies.

Pre-requisites: Students must have passed USSK5B-30-1 Field Skills before starting this module.

Features: The module includes a residential fieldtrip of 6-7 days duration.

Educational aims: This is a module about developing skills and so a variety of teaching and learning approaches will be employed that includes field work, laboratory work, computer practical tutorials and group research projects. Part of this module covers the further development of data analysis skills initiated at level four.

Outline syllabus: Indicative syllabus is as follows:

Experimental design, data analysis and interpretation :
Principles of scientific methodology.
Principles of experimental design.
Review and critical assessment of research methodologies including both quantitative and qualitative approaches.
Principles of temporal and spatial data and long-term monitoring.
Presentation of scientific data using Excel and Minitab.
Graphical presentation.
Data error bars.
Examining and recognizing trends and patterns in complex data.
Design and analysis of questionnaires and case studies.

Field techniques :
Principles of ecological surveying techniques.
Techniques in surveying terrestrial and aquatic fauna and flora, habitat and conservation management assessment techniques, habitat suitability and evaluation procedures.
Biological monitoring - using organisms to monitor the environment, diversity indices, bioaccumulation, and indicator species.
Principles of Environmental Impact Assessment (EIA).
Techniques and approaches in undertaking EIA.
Introduction to remote sensing: Geographical Information Systems (GIS); LIDAR (Light Detection and Ranging); Ground penetrating radar.

Statistics analysis of data:
Analysis of environmental data from first principles.

Data transformations, descriptive statistics, t-tests, Chi-square, ANOVA, ANCOVA, multiple regression, ordination and classification techniques.
Use of Minitab and SPSS.

International field course:
Experience of field work in habitats and environments outside of the UK.
Working as a team in the field.
Logistics, planning and implementation of field work.
The collection, recording and analysis of environmental data in the field.
Data organisation and field report writing.
The use of ecological surveying and environmental monitoring techniques in the field.
Understanding of the limitations and experimental constraints of working within the field.
Understanding of health and safety issues of working in the field.
Working safely, responsibly and effectively in the field.

Further development of Graduate and Science Communication skills:
Transition to level 5, expectations, requirements and support.
Further development of study skills such as literature and information searching, scientific writing, referencing, use of word processing packages, using data bases, using feedback.
Self evaluation of skills and planning personal development.
Science communication, presentations, media platforms, web pages, use of social media, new communication technologies.
Careers and current developments in their chosen discipline.

Part 3: Teaching and learning methods

Teaching and learning methods: The module will be delivered using a mixture of whole group interactive lectures, small tutorial group sessions, workshops, practical sessions and field visits. Students will be allocated to a Study Skills Tutor group where a member of staff will facilitate personal, group and peer assisted learning of

key skills. The module includes a residential fieldtrip of 6-7 days duration where emphasis will be placed on the understanding the theory behind fieldwork and developing practical hands on skills in field techniques. The field course will enable students to fully engage with the learning outcomes of the module, drawing upon their environmental skills to address specific environmental problems and undertake investigations independently. Team-working skills will be promoted through group work.

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

MO1 Discuss the sampling environmental systems and the critical selection of techniques in relation to specific objectives.

MO2 Design and undertake detailed environmental investigations drawing upon a diversity of environmental and field techniques.

MO3 Undertake statistical analysis of environmental data and be able to critically interpret and present these data.

MO4 Communicate their work to others by a variety of methods.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 180 hours

Face-to-face learning = 120 hours

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/modules/ussk5g-30-2.html

Part 4: Assessment

Assessment strategy: Assessment 1: Portfolio.
A portfolio of Environmental and Field Skills e.g. GIS; statistical data analysis and field survey techniques. This assessment has been selected to allow students to evidence the acquisition of key skills expected of an Environmental Science

graduate.

Assessment 2: Presentation (15 minutes)
A defended poster (10 minutes presentation; 5 minutes Q+A)
A poster based upon research undertaken on the residential field course. This assessment provides an opportunity for students to develop time management, data analyses and presentation skills.

Formative feedback is available to students throughout the module through group discussions particularly in tutor group sessions, during the practical sessions and during the field course. Students are provided with formative feed-forward for this assessment through a poster preparation session prior to the presentation.

Assessment tasks:

Portfolio (First Sit)
Description: Skills portfolio
Weighting: 50 %
Final assessment: No
Group work: No
Learning outcomes tested: MO3, MO4

Presentation (First Sit)
Description: Poster presentation with defence (15 minutes)
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO4

Portfolio (Resit)
Description: Skills portfolio
Weighting: 50 %
Final assessment: No
Group work: No

Learning outcomes tested: MO3, MO4

Presentation (Resit)
Description: Poster presentation with defence (15 minutes)
Weighting: 50 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Wildlife Ecology and Conservation Science {Foundation} [Frenchay] MSci 2023-24

Environmental Science {Foundation} [Frenchay] BSc (Hons) 2023-24

Environmental Science {Foundation} [Frenchay] MSci 2023-24

Wildlife Ecology and Conservation Science {Foundation} [Zoo] BSc (Hons) 2023-24

Environmental Science [Frenchay] BSc (Hons) 2024-25

Environmental Science [Frenchay] - WITHDRAWN MSci 2024-25

Wildlife Ecology and Conservation Science [Frenchay] - WITHDRAWN MSci 2024-25

Wildlife Ecology and Conservation Science [Frenchay] BSc (Hons) 2024-25