Module Specification

Environmental Forensics

Version: 2022-23, v3.0, 27 Jul 2022

Contents

Part 1: Information

Module title: Environmental Forensics

Module code: USSKCD-15-3

Level: Level 6

For implementation from: 2022-23

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Health & Applied Sciences

Department: HAS Dept of Applied Sciences

Partner institutions: None

Delivery locations: Frenchay Campus

Field: Applied Sciences

Module type: Standard

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: Environmental Forensics is an extremely broad topic and this module aims to give students knowledge across several themes.

Outline syllabus:

Environmental Toxicology:

The approaches used to monitor and assess environmental contamination and the implications this has for ecotoxicology. The environmental fate and impact of contaminants, particularly with regard to industrial chemicals, drugs, xenoestrogens and particulate matter.

The physical, chemical and biological processes that influence their environmental cycling and natural absorption, retention, degradation and toxicity.

The Use of Isotopes in Environmental Investigations and Nuclear Forensics:

Natural and artificial formation of radionuclides. The use of stable and radiogenic isotopes in tracing and dating pollution events. Radiation release case studies. The use of isotopes in geographical provenancing of plant derived drugs, foods, human remains, animal derivatives and monitoring the release of fuels, explosives and nuclear materials.

Forensic Archaeology:

Detection of clandestine burials using geophysical and non-geophysical techniques. Excavation of single and mass burials to include examination and analysis of the grave fill. Analysis of human remains to establish ante and peri-mortem activity.

Wildlife Crime:

An overview of the scale and nature of wildlife crime to include examples of both national and international wildlife crimes.

Part 3: Teaching and learning methods

Teaching and learning methods: The theoretical underpinning of the module is delivered through interactive lectures and workshops with additional resources made available electronically.

It is expected that students will spend a significant proportion of the study time for this module engaging with relevant scientific literature, as directed by academic staff. Preparation for the coursework assessments will require significant research into relevant case studies and the ability to critically evaluate realistic forensic casework data.

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

MO1 Review and critically analyse case studies in environmental forensics

MO2 Illustrate important examples of chemical, physical and biological processes that influence cycling, contamination and analysis of pollutants and pharmaceuticals in the environment

MO3 Discuss the role of stable and radiogenic isotopes in environmental investigations and their application in the geolocation and analysis of human, animal, plant or energetic materials

MO4 Understand the role of specialists such as Forensic Archaeologists, Geologists and wildlife crime experts in environmental forensic investigation

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

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/usskcd-15-3.html

Part 4: Assessment

Assessment strategy: The module can be selected by students from a diverse range of programmes and must contain enough of interest and relevance for each. Topics for the coursework element will be selected by the student from a range to reflect this broad spectrum of interest. It is expected that students will spend a significant proportion of the study time for this module engaging with relevant scientific literature, as directed by academic staff. Preparation for the coursework assessments will require significant research into relevant case studies and original critical evaluation of realistic forensic casework data. Feedback on the coursework assessment will feed forward to the examination.

Assessment components:

Examination (Online) - Component A (First Sit)
Description: Online Examination (24 hours)
Weighting: 60 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Written Assignment - Component B (First Sit)
Description: Essay (1500 words)
Weighting: 40 %
Final assessment: No
Group work: No
Learning outcomes tested: MO1

Examination (Online) - Component A (Resit)
Description: Online Examination (24 hours)
Weighting: 60 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3, MO4

Written Assignment - Component B (Resit)

Description: Essay (1500 words)

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Integrated Wildlife Conservation {Top-Up} [Sep][FT][Frenchay][1yr] BSc (Hons) 2022-23

Forensic Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Biological Sciences [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Biological Sciences [Sep][FT][Frenchay][4yrs] MSci 2020-21

Forensic Science [Sep][FT][Frenchay][4yrs] MSci 2020-21

Environmental Science [Sep][FT][Frenchay][3yrs] BSc (Hons) 2020-21

Environmental Science [Sep][FT][Frenchay][4yrs] MSci 2020-21

Forensic Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20

Biological Sciences {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20

Forensic Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2019-20

Biological Sciences [Sep][SW][Frenchay][4yrs] BSc (Hons) 2019-20

Biological Sciences [Sep][SW][Frenchay][5yrs] MSci 2019-20

Biological Sciences {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2019-20

Forensic Science [Sep][SW][Frenchay][5yrs] MSci 2019-20

Forensic Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2019-20

Environmental Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2019-20

Environmental Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2019-20

Environmental Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2019-20

Environmental Science [Sep][SW][Frenchay][5yrs] MSci 2019-20

Environmental Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19

Biological Sciences {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19

Environmental Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2018-19

Biological Sciences {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2018-19

Forensic Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2018-19

Forensic Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19