



Module Specification

Environmental Forensics

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Part 1: Information

Module title: Environmental Forensics

Module code: USSKCD-15-3

Level: Level 6

For implementation from: 2024-25

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Health, Science & Society

School: CHSS School of Applied Sciences

Partner institutions: None

Field: Applied Sciences

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: This module illustrates the role of forensic and analytical science in tracing and detecting pollutants and hidden burials, and in the analysis of evidence associated with wildlife crime.

Features: Not applicable

Educational aims: Environmental Forensics uses case studies to illustrate the role of forensic science in the investigation of a broad range of environmental crimes and contamination events.

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 microplastics, nanoparticles, industrial chemicals and drugs.

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

The Use of Stable or Radioactive Isotopes in Environmental Investigations:

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 determining the geographical provenance of human remains or animal derivatives and in monitoring the release of fuels, explosives or 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 examination 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 Utilise case studies to critically analyse the role of forensic science in the investigation of environmental contamination and crime.

MO2 Discuss important chemical, physical and biological processes that influence cycling, contamination and analysis of pollutants and pharmaceuticals in the environment, using examples from the scientific literature.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/usskcd-15-3.html) via the following link <https://uwe.rl.talis.com/modules/usskcd-15-3.html>

Part 4: Assessment

Assessment strategy: Assessment: Examination (Online; 24 hours; 3000 words).

The assessment task for this module is an examination.

The module can be selected by students from three diverse programmes and topics

for the examination questions will be selected to allow students to reflect this broad spectrum of interest.

In addition to allowing students to select exam questions which reflect their interests students will receive significant support in preparation for the examination:

- Students will spend a significant proportion of the study time for this module engaging with relevant scientific literature, supported by academic staff.
- In-class preparation for the assessment includes research into relevant case studies and critical evaluation of realistic forensic casework data.
- Students will be expected to use their knowledge and understanding of the lecture materials, and of their own independent learning, to collate appropriate references that will enable them to construct a detailed, critical discussion of the topic.

These support strategies help to mitigate against assessment offences in the examination.

Assessment tasks:

Examination (Online) (First Sit)

Description: Online Examination (24 hours; 3000 words)

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Examination (Online) (Resit)

Description: Online Examination (24 hours; 3000 words)

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Integrated Wildlife Conservation {Top-Up} [Frenchay] BSc (Hons) 2024-25

Forensic Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2020-21

Forensic Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2021-22

Forensic Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2020-21

Forensic Science [Sep][SW][Frenchay][5yrs] MSci 2021-22

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

Environmental Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2020-21

Environmental Science [Sep][SW][Frenchay][4yrs] BSc (Hons) 2021-22

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

Environmental Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2020-21

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

Environmental Science [Sep][SW][Frenchay][5yrs] MSci 2021-22

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

Forensic Science [Frenchay] MSci 2022-23

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

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

Environmental Science [Frenchay] MSci 2022-23