



Module Specification

Environmental Impacts and Mitigation

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Contents

Module Specification	1
Part 1: Information	2
Part 2: Description	2
Part 3: Teaching and learning methods	4
Part 4: Assessment.....	5
Part 5: Contributes towards	7

Part 1: Information

Module title: Environmental Impacts and Mitigation

Module code: USSKN8-15-2

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: 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: See learning outcomes.

Outline syllabus: We are currently entering a period of time representing dramatic global environmental change. This period of time or epoch has been termed the Anthropocene to emphasize the impact that humans have had on local and regional

environments as well as the Earth System as a whole. On a planetary scale, we are losing biodiversity due to land use change, polluting ecosystems with artificial fertilizers, and altering our climate that will all affect food and water supplies. This module builds on introductory material from Level 1 modules to further develop the students understanding of these complex issues. Specifically students will describe and discuss the impact and interaction between human society and the environment as well as potential mitigation strategies that involves knowledge of environmental science, social-economics and political ideology. In particular this module will align closely with the United Nation's Sustainable Development Goals (SDGs).

Students will study:

Planetary Boundaries and the Anthropocene

Introduction to the module and important concepts, definitions etc

Sustainable Development Goals, Millenium Development Goals and the Millenium Ecosystem Assessment

Concepts and reports that have defined recent thinking in Sustainability

Economics and the SDs

Sebastian Berger will discuss work and sustained economic growth

Clean Energy

Current technologies such as fossil fuels require rapid phase out with a swtich to zero carbon renewable energy such as solar, wind, hydropower and nuclear fission and fusion.

Life Cycle Assessment (workshop)

A Life Cycle Assessment is defined as the systematic analysis of the environmental impact of products during their entire life cycle.

Water and Sanitation

Water scarcity, flooding and lack of proper wastewater management hinder social and economic development. Increasing water efficiency and improving water

management are critical to balancing the competing and growing water demands from various sectors and users

Climate Mitigation and Adaptation

The year 2019 was the second warmest on record and the devastating fires in Australia were predicted in 2009. This calls for urgent and accelerated action by countries as they implement their commitments to the Paris Agreement on Climate Change.

AFOLU (Agriculture, Forestry and Other LandUse)

The complex and interaction impacts of intensive agriculture, livestock practices and other landuses on deforestation, biodiversity loss and sustainability – discussing the recent IPBES and IPCC land reports

Responsible Consumption and Production

Decoupling economic growth from resource use is one of the most critical and complex challenges facing humanity today. Doing so effectively will require policies that create a conducive environment for such change, social and physical infrastructure and markets, and a profound transformation of business practices along global value chains.

Sustainable Cities

Many cities around the world are facing acute challenges in managing rapid urbanization— from ensuring adequate housing and infrastructure to support growing populations, to confronting the environmental impact of urban sprawl, to reducing vulnerability to disasters.

Policy and the SDs

Laura De Vito will discuss the SDGs in relation to national and international policy

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 Describe and discuss the impact that human activities have on the environment (including land, water and atmosphere) and living organisms

MO2 Describe and discuss the impact that local, regional and global environmental change is having on human society

MO3 Describe and discuss strategies and technologies for mitigating local, regional and global global environmental change

MO4 Gain practical experience in analytical data analysis and laboratory techniques for understanding the presence and/or movement of pollutants in the environment

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](https://uwe.rl.talis.com/modules/usskn8-15-2.html) via the following link <https://uwe.rl.talis.com/modules/usskn8-15-2.html>

Part 4: Assessment

Assessment strategy: Assessment 1 is a report. The report will develop analytical, data handling and analysis skills and will involve the analysis of scientific data. This assessment is designed to develop analytical skills and to encourage students to critically evaluate and interpret environmental change data and further their understanding and appreciation of the technical and scientific challenges of measuring environmental change through time and space.

Assessment 2 is a 24 hour online written examination (equivalent to a 2 hour exam).

The written examination will be used to assess the student's key knowledge and understanding of the Sustainable Development Goals in relation to impacts and mitigation of global environmental change. In addition to this, students will be assessed on their understanding on contemporary environmental techniques for measuring and monitoring environmental change (e.g. air, water or land).

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

Description: Report based on the analysis of scientific data (1500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4

Examination (Online) (First Sit)

Description: Online examination (24 hours)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Report (Resit)

Description: Report based on the analysis of scientific data (1500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO4

Examination (Online) (Resit)

Description: Online examination (24 hours)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

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