Module Specification

Environmental Impacts and Mitigation

Version: 2025-26, v3.0, Approved

Contents

Part 1: Information

Module title: Environmental Impacts and Mitigation

Module code: USSKN8-15-2

Level: Level 5

For implementation from: 2025-26

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 evaluates global environmental challenges from a social-ecological perspective, aligning closely with the United Nation's Sustainable Development Goals (SDGs). Students will develop an interdisciplinary perspective on mitigation and adaptation strategies for solving global environmental impacts.

Features: Not applicable

Educational aims: This module aims to:
- enable graduates to evaluate environmental impacts and associated mitigation and/or adaptation strategies
-enable graduates to critically evaluate environmental solutions and introduce Life Cycle Assessment skills.

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 4 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 (Indicative):

Planetary Boundaries and the Anthropocene
Introduction to the module and important concepts, definitions etc

Sustainable Development Goals, Millennium Development Goals and the Millennium 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.

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: This module will be delivered using lectures, online videos/resources and workshops/tutorials. Lectures will be used to introduce main concepts and to guide and inform student centred learning while tutorials and workshops will provide students the opportunity to discuss and apply active learning to specific computer based skills.

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

MO1 Describe and discuss the impact that economic and social activities have on the environment (including land, water and atmosphere) and feedback to human society.

MO2 Describe and discuss strategies and technologies for mitigating local, regional and global global environmental change.

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 via the following link https://rl.talis.com/3/uwe/lists/7AF60511-2EB4-C8B5-2B0A-86E063077CF8.html?lang=en-GB&login=1

Part 4: Assessment

Assessment strategy: Assessment: Portfolio (2500 words)
Impact and mitigation portfolio.
This assessment will involve five written tasks designed to encourage students to critically evaluate the complexities of environmental impacts related to political, social and economic issues (1000 words total) and a review of Life Cycle Assessments from the peer reviewed literature (1500 words) . Students will chose a

subject of interest such as personal transport, search the literature for Life Cycle Assessments of relevance and evaluate the findings. Life Cycle Assessment evaluates overall environmental impacts of specific technologies permitting development of policy for mitigating environmental impacts via regulation.

Each teaching session will be directly linked to an assessment question (200 words) or review (1500 words). This allows staff to directly support student learning by teaching for the assessment ensuring appropriate student engagement.

Assessment tasks:

Portfolio (First Sit)
Description: Portfolio (2500 words)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2

Portfolio (Resit)
Description: Portfolio (2500 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:

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

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

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