

**MODULE SPECIFICATION**

| Part 1: Information | | | |
|---------------------------|---|--------------------|------------------|
| Module Title | Environmental Impacts and Mitigation | | |
| Module Code | USSKN8-15-2 | Level | 2 |
| For implementation from | September 2018 | | |
| UWE Credit Rating | 15 | ECTS Credit Rating | 7.5 |
| Faculty | Health & Applied Sciences | Field | Applied Sciences |
| Department | Applied Sciences | | |
| Contributes towards | BSc (Hons) Environmental Science, MSci Environmental Science | | |
| Module type: | Standard | | |
| Pre-requisites | None | | |
| Excluded Combinations | None | | |
| Co- requisites | None | | |
| Module Entry requirements | N/A | | |

| Part 2: Description |
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| <p>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).</p> <p>Students will study:</p> <ul style="list-style-type: none"> • Important concepts including Planetary Boundaries, definition and controversy regarding the Anthropocene, resilience thinking • Sustainability and the Sustainable Development Goals – history, concepts, legislation and greenwash • Energy Technologies – An introduction to impacts due to fossil fuels, nuclear and renewable energy • Freshwater Use – Human impacts and mitigation • Oceans – Human impacts such as acidification, microplastics and legislation • Land Use impacts – Land-use change, food and farming, biodiversity loss, deforestation, urbanisation, remediation and restoration • Climate change – Human impacts and mitigation |

Students will learn:

- Practical techniques for measuring important environmental pollutants such as radioactivity, nitrogen pollution or microplastics.
- Analysis and interpretation of environmental data collated from online data sets and from laboratory/field practicals

Part 3: Assessment

The Assessment Strategy has been designed to support and enhance the development of both subject-based and generic key skills as described in the Learning Outcomes. The focus is on assessment strategies that underpin and inform employability skills in the areas described in the syllabus outline (Part 2).

Component A.

This will be assessed via a written examination (2 hours). 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).

Component B

Element 1

This coursework will develop analytical, data handling, sampling and analysis skills and will involve the analysis of scientific data collected in the field and/or analysed in the laboratory. This coursework 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.

| | | | |
|---|-------------|-------------------|--|
| Identify final timetabled piece of assessment (component and element) | Component A | | |
| % weighting between components A and B (Standard modules only) | A: | B: | |
| | 50% | 50% | |
| | | | |
| First Sit | | | |
| Component A (controlled conditions) Description of each element | | Element weighting | |
| 1. 2 hour written exam | | 100% | |
| Component B Description of each element | | Element weighting | |
| 1. Data collection and analysis (1500 words) | | 100% | |
| Resit (further attendance at taught classes is not required) | | | |
| Component A (controlled conditions) Description of each element | | Element weighting | |
| 1. 2 hour written exam | | 100% | |
| Component B Description of each element | | Element weighting | |
| 1. Data analysis (2500 words) | | 100% | |

| Part 4: Teaching and Learning Methods | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-------------------------|-----------------------|-----------------|---|-----------------------------------|--|------------------------------------|-----|----------------------------------|-----------------------------------|--------------------------------------|----|------|--|--|--|--|--|----|-----------------------|---|-------------------------|-----------------------|-----------------|--|-----|----|-----|---|-----|---|
| Learning Outcomes | On successful completion of this module students will be able to: - Describe and discuss the impact that human activities have on the environment (including land, water and atmosphere) and living organisms (Component A). - Describe and discuss the impact that local, regional and global environmental change is having on human society (Component A). - Describe and discuss strategies and technologies for mitigating local, regional and global environmental change (Component A). - Gain practical experience in analytical data analysis and laboratory techniques for understanding the presence and/or movement of pollutants in the environment (Component B). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Key Information Sets Information (KIS) | Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Contact Hours | <table><tr><th colspan="5">Key Information Set - Module data</th></tr><tr><td colspan="5">Number of credits for this module</td></tr><tr><td colspan="4"></td><td>15</td></tr><tr><td>Hours to be allocated</td><td>Scheduled learning and teaching study hours</td><td>Independent study hours</td><td>Placement study hours</td><td>Allocated Hours</td><td></td></tr><tr><td>150</td><td>36</td><td>114</td><td>0</td><td>150</td><td>✓</td></tr></table> | | | | | Key Information Set - Module data | | | | | Number of credits for this module | | | | | | | | | 15 | Hours to be allocated | Scheduled learning and teaching study hours | Independent study hours | Placement study hours | Allocated Hours | | 150 | 36 | 114 | 0 | 150 | ✓ |
| | Key Information Set - Module data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of credits for this module | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hours to be allocated | Scheduled learning and teaching study hours | Independent study hours | Placement study hours | Allocated Hours | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150 | 36 | 114 | 0 | 150 | ✓ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Assessment | <p>The table below indicates as a percentage the total assessment of the module which constitutes a;</p> <p>Written Exam: Unseen written exam Coursework: Written report Practical Exam: Not applicable</p> <p>Please note that this is the total of various types of assessment and will probably not reflect the component and module weightings in the Assessment section of this module description:</p> <table><tr><td colspan="2">Total assessment of the module:</td></tr><tr><td>Written exam assessment percentage</td><td>50%</td></tr><tr><td>Coursework assessment percentage</td><td>50%</td></tr><tr><td>Practical exam assessment percentage</td><td>0%</td></tr><tr><td colspan="2">100%</td></tr></table> | | | | | Total assessment of the module: | | Written exam assessment percentage | 50% | Coursework assessment percentage | 50% | Practical exam assessment percentage | 0% | 100% | | | | | | | | | | | | | | | | | | |
| | Total assessment of the module: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Written exam assessment percentage | 50% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Coursework assessment percentage | 50% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Practical exam assessment percentage | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reading List | All students will be encouraged to make full use of the print and electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject relevant resources and services, and to the library catalogue. Many resources can be | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

accessed remotely. Students will be presented with opportunities within the curriculum to develop their information retrieval and evaluation skills in order to identify such resources effectively.

Any **essential reading** will be indicated clearly, along with the method for accessing it, e.g. students may be expected to purchase a set research article or watch a research webinar. Guidance will be available via the module handbook and Blackboard or through any other vehicle deemed appropriate by the module/programme leaders.

Further reading is expected and this will be indicated clearly, in advance. If specific texts are listed, a clear indication will be given regarding how to access them and, if appropriate, students will be given guidance on how to identify relevant sources for themselves, e.g. through use of bibliographical databases.

A detailed reading list will be made available through relevant channels, e.g. module handbooks, Blackboard, etc.

Books

Kemp, D. (2012) *Exploring Environmental Issues*. London: Routledge

Goudie, A. (2013) *The Human Impact on the Natural Environment*, 7th Edition, Oxford: Wiley-Blackwell

Hill, M. (2004) *Understanding Environmental Pollution* Cambridge: CUP

Online Resources

The following journal resources are available via the UWE library webpages (ejournals A-Z link), and students will be referred to these as part of the research informing teaching and learning culture of this module. This will provide students with the opportunity to engage in and to appreciate the importance of research.

Environmental Pollution

Water Research

Science of the Total Environment

Nature Climate Change

Web resources – students will be referred to the following web resources throughout the module as part of the independent learning philosophy adopted within the module

United Nation's Sustainable Development Goals

<https://sustainabledevelopment.un.org/?menu=1300>

Intergovernmental Panel on Climate Change, IPCC

(<http://www.ipcc.ch/>)

Environment Agency

(<http://www.environment-agency.gov.uk/>)

European Commission on Climate Change

(http://ec.europa.eu/environment/climat/home_en.htm)

Hadley Centre for Climate Prediction and Research

(www.metoffice.gov.uk/research/hadleycentre/)

Horizon 2020 – European Commission (ec.europa.eu/programmes/horizon2020)

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|---|-----------|---------|---|---------------------------|
| First CAP Approval Date | 31/5/2017 | | | |
| Revision CAP Approval Date <i>Update this row each time a change goes to CAP</i> | | Version | 1 | RIA 12112 |