Module Descriptor

Title	Environmental Pollutants and Health Risk		
Session	2026/27	**Status**	Published
Code	BIOL09038	**SCQF Level**	8
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Health and Life Sciences**		
Module Co-ordinator	Morgan Hetherington		

Summary of Module

This module aims to give students a deep understanding of environmental hazards from a variety of pollutants; natural and manmade. We explore the primary pollutant sources and their respective toxicity, degradation, persistence, accumulation, and behaviour in air, water and land. This will include assessing the health risk caused by biological systems and their effects in humans. In addition, students will explore how these factors affect the UN SDG's and what is required to enhance future sustainability.

Through a series of lectures and workshops, students will develop an understanding of the general mechanisms of toxicity, the basis of setting environmental quality standards and legislative controls on contaminants. Students will also have the opportunity to explore pre-existing and different pollutant data sets from a global perspective.

By undertaking this module students will develop a range of 'I am UWS' Graduate Attributes.

Universal – development of critical thinking, ethically and research minded.

Work Ready – an effective problem solver, communicator and ambitious. This includes an ability to work with a range of people, receptive to others' views and working well with others to reach shared goals. Being a good communicator, open-minded, flexible, empathetic, a good listener, and pro-active.

Successful – by being autonomous, resilient, and driven, which includes having the ability to weather challenges and setbacks, utilising adversity to build new skills and support others in the future. Being determined, motivated, self-confident and demonstrating will-power. Not fearing failure.

Module Delivery Method	On-Campus[1] ☐	Hybrid[2] ☒	Online[3] ☐	Work -Based Learning[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☒ Lanarkshire ☐ London ☐ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☒	Term 2	☐	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Demonstrate a critical understanding of different geographical hazard processes and mitigation effects.
L2	Demonstrate an ability to critically evaluate the impact of climate change and future hazard risks, including its impact on policy making.
L3	Describe the field of toxicology and its application when assessing health effects associated with toxic agents commonly found in aquatic and terrestrial environments.
L4	Understand how information on pollutant transportation can be drawn together to assess the risks of chemicals to the environment and human health.
L5	Assess various case studies worldwide to demonstrate an understanding of environmental toxicology and health implications.

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 9** Have in depth knowledge of different chemical and biological toxicological levels and how these impact environmental and human health.
Practice: Applied Knowledge and Understanding	**SCQF 9** Use knowledge and skills to evaluate and critique current research in hazard assessments

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

Generic Cognitive skills	**SCQF 9** Identify and analyse the various factors that influence health risks to humans as a result of environmental pollutants.
Communication, ICT and Numeracy Skills	**SCQF 9** Interpret and evaluate numerical data using basic statistical techniques and present in appropriate scientific/academic forms to solve specific toxicological and analytical problems.
Autonomy, Accountability and Working with Others	**SCQF 9** Working effectively with others in an active-learning and professional context focusing on group work and collaboration.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching

In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.

This module covers a wide variety of theoretical, conceptual and practical areas, which require a range ofknowledge and skills to be displayed and exercised. Delivery of its syllabus content therefore involves adiversity of teaching and assessment methods suitable to the learning outcomes of the module; these includelectures, structured tutorials (work closely integrated with the lecture material), laboratory exercises to developpractical skills and familiarisation with equipment and experimental techniques, completion and submission ofwritten coursework making use of appropriate forms of IT and VLE, and independent study.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	12
Tutorial / Synchronous Support Activity	12
Laboratory / Practical Demonstration / Workshop	12
Independent Study	164
n/a	
n/a	
TOTAL	200

Indicative Resources

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

Shaw, I. and Chadwick, J (2018). Principles of Environmental Toxicology. CRC Press.

D'mello, F. (2020). A Handbook of Environmental Toxicology: Human Disorders and Ecotoxicology. Wallingford Cabi
(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are attending and participating in all timetabled programme activities including on-campus and online teaching sessions, asynchronous online learning activities, placement, work-based elements, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** Attendance to all online, on-campus classes and laboratory sessions.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. In line with current legislation (Equality Act, 2010) and the UWS Equality, Diversity, and Human Rights Code, our modules are accessible and inclusive, with reasonable adjustment for different needs where appropriate. Module materials comply with University guidance on inclusive learning and teaching, and specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations. Where modules require practical and/or laboratory based learning or assessment required to meet accrediting body requirements the University will make reasonable adjustment such as adjustable height benches or assistance of a 'buddy' or helper.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Biological Sciences Health**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☒ **Yes** ☐ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Biology
Moderator	David Thompson
External Examiner	T Temple
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Class test (40%)
Assessment 2
Case Study (60%)
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Class test (written)	☒	☐	☒	☒	☐	40	2

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Case study	☐	☒	☐	☐	☒	60	0

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	2 hours

Change Control

What	**When**	**Who**
Change of MC	Jan 2026	R Freeburn