University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Safety, Health, & Environmental Protection			
Code: CHEM09005	**SCQF Level: 9 (Scottish Credit and Qualifications Framework)**	**Credit Points: 20**	**ECTS: 10 (European Credit Transfer Scheme)**
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Iain McLellan		

Summary of Module

This module adopts a holistic approach to, health and safety, the earth environment and human's impact upon that environment. It gives a broad introduction to earth systems to provide a contextual framework from which to explore the broader issues of human activity. It is concerned with the safe use and handling of toxic and hazardous substances, considering the potential impact on human health and the environment. The nature and evaluation of hazards, especially toxic hazards, will be discussed.

The behaviour of substances in the environment, their dispersal and ultimate environmental fate, will be exemplified. Consideration will be given to safety and safe handling of materials in the workplace. Procedures for the treatment and/or disposal of waste materials – discharges to atmosphere, liquid effluent and solid waste – will be discussed. All the topics covered within this module will be related to the principles of sustainability and the UN Sustainable Development Goals.

The legislative and regulatory frameworks covering aspects of safety and environmental management will be developed as appropriate. Case studies and laboratory programme are used to exemplify the theoretical aspects of this broad topic area.

The Graduate Attributes relevant to this module are:

- Academic: critical thinker, environmental problem solving, autonomy
- Personal: motivation, time keeping, effective written and oral communicator
- Vocational: collaboration, research, analytical techniques, COSHH risk assessments

Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	Hybrid 0	Work-Based Learning
☒	☐	☐	☐	☐	☐
See Guidance Note for details.					

Campus(es) for Module Delivery						
The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
☒	☐	☐	☐	☐	☐	Add name

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	☐	Term 2	☒	Term 3	☐

Learning Outcomes: (maximum of 5 statements) **These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.** At the end of this module the student will be able to:	
L1	Demonstrate a critical awareness of the interaction between human activity and wellbeing of lifeforms (including humans) in the environment and workplace, including safety and industrial hygiene.
L2	Identify and integrate the requirements for handling and disposal of representative solid, liquid, and airborne waste materials, including sampling, analysis, and treatment.
L3	Discuss critically the legal and regulatory framework for workplace and environmental protection.
L4	Carry out a variety of laboratory investigations related to a range of environmental, health and safety scenarios. Discussing results in an appropriate manner where possible referring to current legislation / control measures.
L5	Interpret, evaluate and present a range of numerical data and environmental topics through written reports and oral presentations.
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 Level **9** A broad integrated knowledge of the interactions between human activities, hazardous substances and the welfare of human and environmental systems. A critical understanding of the requirements of safe and acceptable handling of materials in the workplace and of their discharge into the environment. Appropriate familiarity with legal / regulatory frameworks.	
Practice: Applied Knowledge and Understanding	SCQF Level **9** Use a selection of skills, techniques and practices in identifying, analyzing and evaluating workplace and environmental hazards and appropriate procedures for the safe use and disposal of hazardous materials. Carry out routine and more open ended investigations and enquiries into qualitative and quantitative evaluation of potential workplace and environmental hazards.	
Generic Cognitive skills	SCQF Level **9** Undertake critical analysis, evaluation and synthesis of ideas, concepts and information related to workplace and environmental issues. Identify and analyse routine professional problems and issues related to workplace and environmental chemical hazards. Draw on a range of sources in making judgments on issues of workplace and environmental safety.	
Communication, ICT and Numeracy Skills	SCQF Level **9** Make formal and informal presentations on mainstream issues to a range of audiences (laboratory reports, assignments, oral presentation etc). Use a range of IT applications to research and present aspects of environmental concern. Interpret, use and evaluate numerical, graphical and non-numerical information to achieve goals.	
Autonomy, Accountability and Working with others	SCQF Level **9** Exercise autonomy and initiative in investigations and in information acquisition. Practice working with others taking account of roles and responsibilities. Deal with certain ethical and professional issues under appropriate guidance.	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	**Module Title:**
	Other:	There are no pre-requisites for this module, however students may find it helpful to have done chemistry at SCQF Level 7

Co-requisites	Module Code:	Module Title:

*Indicates that module descriptor is not published.

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.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	28
Laboratory/Practical Demonstration/Workshop	20
Independent Study	152
	Hours Total 200

****Indicative Resources: (eg. Core text, journals, internet access)**

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

Baird, C. and Cannon, M. "Environmental Chemistry" Palgrave MacMillan.

Health & Safety Executive website

vanLoon, G.W. and Duffy, S.J.(2017) "Environmental Chemistry: global perspective" Oxford University Press

Harrison, R.M., (ed) "Pollution: causes, effects and controls" 5th Edition RSc Publishing

Scottish air quality website

Scottish Environment Protection Agency (SEPA) website

Click or tap here to enter text.

Click or tap here to enter text.

Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE. Resources should be listed in Right Harvard referencing style or agreed professional body deviation and in alphabetical order.
(**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 regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, 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 of all on-campus sessions (classes and laboratories), and submission of assessments.

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. Please ensure any specific requirements are detailed in this section. Module Co-ordinators should consider the accessibility of their module for groups with protected characteristics..
(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	Physical Sciences

Assessment Results (Pass/Fail)	Yes ☐No ☒
School Assessment Board	Physical Sciences
Moderator	Alastair Marr
External Examiner	M Paterson
Accreditation Details	Royal Society of Chemistry
Changes/Version Number	2.19 Summary of Module: Removal of gendered terms, inclusion of principles of sustainability & UN SDGs. Module Delivery: From Hybrid-C to Face-to-Face Learning Outcomes: Inclusion of LO5 Learning Activities: Removal of 8 hours tutorial, which have been moved to the Lecture / Content Delivery. Accreditation Details: Removal of REHIS accreditation. Assessment: Change from 'unseen open book' to 'unseen closed book. Assessment Outcome Grids: Updated with new LO included for presentation.

Assessment: (also refer to Assessment Outcomes Grids below)
Assessment 1: Unseen class test (50%)
Assessment 2: Laboratory, written assessments, oral presentation (50%)
(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.)

Assessment Outcome Grids (See Guidance Note)

Component 1							
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Learning Outcome (5)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**

Unseen class test	X	X	X			50	2

Component 2							
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Learning Outcome (5)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Laboratory			X	X		20	0
Case Study	X	X				20	0
Presentation					X	10	0
Combined Total for All Components						**100%**	**XX hours**