University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Foundation Chemistry			
Code: CHEM06001	**SCQF Level: 6 (Scottish Credit and Qualifications Framework)**	**Credit Points: 10**	**ECTS: (European Credit Transfer Scheme)**
School:	School of Computing Engineering and Physical Sciences		
Module Co-ordinator:	Callum J. McHugh		

Summary of Module

This module provides a pathway for students wishing to take degree courses in chemistry-based programmes where they do not possess an SQA Higher Chemistry qualification. The module covers the essential topics required to equip students with the skills needed to begin to study chemistry at the level of an incoming university student.

The module covers the main elements of the SQA Higher Chemistry curriculum, focusing on themes aligned to Chemical Changes and Structure, Nature's Chemistry, Chemistry in Society and Researching Chemistry.

The module introduces fundamental topics including periodicity; the periodic table, trends and properties; structure and bonding, forces and interactions; oxidising and reducing agents, redox reactions and the electrochemical series; the chemistry of carbon, nomenclature and functional groups; thermodynamics, balancing reactions, the mole and concentrations, equilibria, acids and bases, titrations and the determination of reaction yields; common practical apparatus and techniques, health and safety, chemical analysis and the reporting of experimental work.

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	Recognise basic trends in the periodic table and their influence on structure and bonding, forces and interactions.
L2	Understand the concepts of oxidation and reduction and how to construct a balanced equation for a redox reaction.
L3	Demonstrate a rudimentary knowledge of carbon chemistry, basic nomenclature and recognition of simple functional groups.
L4	Display an elementary understanding of stoichiometry, the mole and concentration and how to apply them in titrimetric analysis and the determination of reaction yields.
L5	Demonstrate a simple understanding of reaction rates, chemical energy and equilibria.

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 **6** Students will obtain essential foundation knowledge for studying chemistry a university level.
Practice: Applied Knowledge and Understanding	SCQF Level **6** Using the knowledge and understanding gained from lecture material to tackle set problems and tasks in tutorials and short tests.

Generic Cognitive skills	SCQF Level **6** Using a range of approaches to addressing problems and exercises, students will enhance numeracy and logic abilities, as well as their overall preparedness for university study.	
Communication, ICT and Numeracy Skills	SCQF Level **6** Collaborative group working at the whiteboard during tutorial sessions will be encouraged. Peer teaching will happen naturally during these interactions. Communication with others within a team environment and the application of numerical skills in tackling set problems will be encouraged.	
Autonomy, Accountability and Working with others	SCQF Level **6** Those choosing to attend this summer school module will have already displayed ownership of their own learning. These qualities will be further developed, with students being encouraged to identify and address their own knowledge gaps, thereby solidifying their chemistry foundations in preparation for future study. The importance of academic honesty will be instilled throughout the module.	
Pre-requisites:	Before undertaking this module, the student should have undertaken the following:	
	Module Code:	**Module Title: N/A**
	Other:	
Co-requisites	**Module Code:**	**Module Title: N/A**

*Indicates that module descriptor is not published.

Learning and Teaching	
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	10
Tutorial/Synchronous Support Activity	10

Independent Study	20
	40 Hours Total

****Indicative Resources: (e.g. Core text, journals, internet access)**
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Module materials will be sufficient and self-contained, however any textbook in introductory level university chemistry will make a suitable alternative resource. D D Ebbing and S D Gammon, General Chemistry, Houghton Miffin, 11th Edition, 2016 G L Patrick, Beginning Organic Chemistry 1, Oxford University Press, 1997 Hart, Craine, Hart Hadad, Organic Chemistry – A Short Course, Houghton Miffin, 12th Edition, 2007
(**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 teaching sessions, course-related learning resources, and they complete assessments and submit these on time.

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.
(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	Engineering and Physical Sciences
Assessment Results (Pass/Fail)	No – graded
School Assessment Board	Physical Sciences
Moderator	Dr Alastair Marr
External Examiner	Prof M. Paterson

Accreditation Details	N/A
Changes/Version Number	V 1.0

Assessment: (also refer to Assessment Outcomes Grids below)
Assessment 1 – Open Book Class Test (100 %)
(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.

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**
Class Test	✓	✓	✓	✓	✓	100	1

Change Control:

What	**When**	**Who**
Further guidance on aggregate regulation and application when completing template	16/01/2020	H McLean
Updated contact hours	14/09/21	H McLean
Updated Student Attendance and Engagement Procedure	19/10/2023	C Winter
Updated UWS Equality, Diversity and Human Rights Code	19/10/2023	C Winter
Guidance Note 23-24 provided	12/12/23	D Taylor
General housekeeping to text across sections. .	12/12/23	D Taylor

Version Number: MD Template 1 (2023-24)