Module Descriptor

Title	Foundation Chemistry		
Session	2025/26	**Status**	Published
Code	CHEM06001	**SCQF Level**	6
Credit Points	10	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Callum 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	**On-Campus[1]** ☒	**Hybrid[2]** ☐	**Online[3]** ☐	**Work -Based Learning[4]** ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☐ London	☐ Online / Distance Learning	

[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

			☒ Paisley		☐ 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	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 6** Students will obtain essential foundation knowledge for studying chemistry a university level
Practice: Applied Knowledge and Understanding	**SCQF 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 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 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 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

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.	
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	10
Tutorial / Synchronous Support Activity	10
Independent Study	20
Please select	
Please select	
Please select	
TOTAL	40

Indicative Resources
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 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:**

The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. You will scan your attendance via the scanners each time you are on-campus and you will login to the VLE several times per week. Where you are unable to attend a timetabled learning session due to illness or other circumstance, you should notify the Programme Leader that you cannot attend. Across the School an 80% attendance threshold is set. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

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. Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. Specialist assistive equipment, support provision and adjustment to assessment practice in accordance with the University's policies and regulations
(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 Physical Sciences**
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	Physical Sciences
Moderator	Alastair Marr
External Examiner	Martin Paterson
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1.1 Attendance and Engagement statements updated Equality statement updated

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Open book class test (100 %)
Assessment 2

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**
Open book class test	☒	☒	☒	☒	☒	100	1

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

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	1 hours

Change Control

What	**When**	**Who**
Attendance and engagement statements updated	March 2025	C. McHugh
Equality statement updated	March 2025	C. McHugh