Module Descriptor

Title	Physical Chemistry 2		
Session	2025/26	**Status**	Published
Code	CHEM08001	**SCQF Level**	8
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Dr A McLean		

Summary of Module

The lecture course will cover aspects of kinetics, spectroscopy, thermodynamics, electrochemistry and phase equilibria. The emphasis will be on the application of techniques and of theories to practical situations. This will involve both tutorial (workshop) activities and a laboratory programme designed to complement and illustrate the lecture materials.

The graduate attributes relevant to this module are;

Academic: Critical thinker, analytical, inquiring, knowledgeable, literate, problem solver, autonomous.

Personal: Effective communicator, influential, motivated, team-worker.

Professional: collaborative.

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)	

[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

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 familiarity with and application of basic principles and methodologies of kinetics, thermodynamics, electrochemistry, spectroscopy and phase behaviour
L2	Apply knowledge and understanding of principles and concepts of physical chemistry to investigation.
L3	Physical Chemistry problem solving including in an laboratory environment.
L4	
L5	

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 8** A broad knowledge of the main areas of physical chemistry, with a detailed knowledge of selected aspects of the subject.
Practice: Applied Knowledge and Understanding	**SCQF 8** Use a range of laboratory and numerical skills to explore the applications of theory. Carry out routine investigations into aspects of the subject and of relevant issues.
Generic Cognitive skills	**SCQF 8** Undertake critical analysis, evaluation and synthesis of ideas using concepts and information within relevant areas of physical chemistry. Use a range of approaches to tackle and solve routine problems in physical chemistry Critically evaluate information and approaches to the solution of problems in physical chemistry.
Communication, ICT and Numeracy Skills	**SCQF 8** Use a range of standard applications to the evaluation of numerical information Present complex information in a variety of forms
Autonomy, Accountability and Working with Others	**SCQF 8** Exercise autonomy and initiative in investigation and processing of relevant materials. Operate in group situations taking account of own and others' roles and contributions.

Prerequisites	Module Code	Module Title
	CHEM07011	Chemistry & Reactions
	Other Or suitable appropriate / eq background	
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 of knowledge and skills to be displayed and exercised. Delivery of its syllabus content therefore involves a diversity of teaching and assessment methods suitable to the learning outcomes of the module; these include formal lectures, structured tutorials (work closely integrated with the lecture material), laboratory exercises to develop practical skills and familiarisation with equipment and experimental techniques, completion and submission of written 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	22
Tutorial / Synchronous Support Activity	10
Laboratory / Practical Demonstration / Workshop	16
Independent Study	152
Please select	
Please select	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: P Atkins and J de Paula, Atkins' "Elements of Physical Chemistry" Oxford University Press, 7th Edition, 2016. Physical Chemistry II, Reference Booklet, University of the West of Scotland. 2025.
(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. This module has lab-based teaching and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, 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	**Please select**
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	Dr A Marr
External Examiner	Prof M Paterson
Accreditation Details	his module is accredited by the Royal Society of Chemistry (RSC) as part of the BSc (Hons) Chemistry programme and the Chartered Society of Forensic Sciences (CSFS) as part of the BSc (Hons) Forensic Science programme
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	4.0/ Updated Accred, Att & Eng, Eq & Div Reqs

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1

Unseen class test (50 %)
Assessment 2
Coursework and lab work (50%)
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**
Unseen Class Test	☒	☒	☐	☐	☐	50	2

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Courswork, inc Labs	☒	☒	☒	☐	☐	50	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**
LO3 to make mention of lab based problem solving	March 2025	Dr A McLean
Att & Eng Req updated	March 2025	Dr A McLean
Div & Eq updated	March 2025	Dr A McLean