Module Descriptor

Title	Chemistry for Environmental and Biosciences		
Session	2025/26	**Status**	Published
Code	BIOL07022	**SCQF Level**	7
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Health and Life Sciences**		
Module Co-ordinator	David Thompson		

Summary of Module

This module serves as an introduction to the fundamentals of chemistry within the biosciences. Chemistry underpins all biology and students will be introduced to the basics of atomic structure, bonding, the periodic table and chemical reactions. As the course progresses more bioscience-specific aspects such as amino acids and pH will be taught as well as an introduction to the analysis of biological molecules through spectroscopy.

This module will also help prepare students for further coursework in their degree by covering transferable skills through an excel workbook and a data formatting submission.

This is a long-thin module and is taught in terms 1 & 2.

This module will help to create graduates who are critical thinkers, analytical and knowledgeable whilst also being literate, autonomous problem solvers. They will be influential, motivated effective communicators.

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 an outline knowledge of the fundamental concepts and language of chemistry.
L2	Display an ability to apply basic chemical knowledge to a range of bioscientific problems.
L3	Demonstrate an ability to communicate chemical knowledge and information both qualitatively and quantitatively.
L4	Demonstrate an appreciation of work in a laboratory environment and chemical reactions, tasks and methods
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 7** Demonstrating a broad knowledge of some of the main theories, concepts and principles involved in chemistry within the biosciences.
Practice: Applied Knowledge and Understanding	**SCQF 7** Developing a knowledge of fundamental laboratory techniques and safe practice and the interpretation and presentation of results in laboratory report. Using the knowledge and understanding gained from lecture material in order to tackle set problems and tasks provided in quizzes and workshops. The use of basic calculations in developing a quantitative understanding of basic chemical systems.
Generic Cognitive skills	**SCQF 7** Accurate record keeping and report writing. Using a range of approaches to addressing problems and exercises issued during the module.
Communication, ICT and Numeracy Skills	**SCQF 7** The ability to compile, evaluate, interpret and present information from a wide variety of sources. The use of basic numerical and graph skills. The ability to produce written reports using word and excel.
Autonomy, Accountability and Working with	**SCQF 7** Exercising some initiative and independence in carrying out

Others	independent learning through workshops and quizzes. Appreciating and applying a professional attitude to individual safety and to the safety of others within a laboratory environment.

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 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	18
Tutorial / Synchronous Support Activity	18
Laboratory / Practical Demonstration / Workshop	12
Independent Study	152
n/a	
n/a	
TOTAL	200

Indicative Resources

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

Chemistry 2e

(Openstax - Free online textbook)

https://openstax.org/details/books/chemistry-2e

Chemistry: Atoms First 2e

(Openstax - Free online textbook)

https://openstax.org/details/books/chemistry-atoms-first-2e

(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 university is committed to providing a supportive learning environment that actively facilitates student success. In this module, there is a high degree of student-led flexibility. You are academically engaged if you are regularly engaged with scheduled live sessions on-campus and online, including engaging with online learning activities in your own time, course-related learning resources, and with timely completion and submission of assessments. Whilst we understand that there may be times when conflicting priorities make participation challenging, for you to gain the most from this module it is recommended that you participate in all scheduled live classes and complete your self-directed learning activities in a timely manner. It may be difficult to pass the assessment associated with this module if you are not regularly engaging with the module work and live classes. We may reach out to check how things are going and offer support if we observe that you have not been attending sessions or completing online activities

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	Kiri Rodgers
External Examiner	A Tsaousis

Accreditation Details	IBMS/ HCPC/ RSB
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1.03

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Portfolio of Written work. Students will complete four workshops spread evenly throughout the module (two of each in term 1 and two in term 2) and and end of module test. Workshops. Four workshops will assess the student's learning and will cover the use of Microsoft Excel, Data Formatting, maths and chemistry. Test. The end of module test twenty questions and be designed to ensure the student has understood the fundamental chemistry knowledge. The test will be closed book, hosted on campus. 60% weighting
Assessment 2
Report of practical/ field/ clinical work. Students will undertake four laboratory sessions and complete proformas and reports based on those sessions. Two labs will be taken in term 1 and two in term 2. 40% weighting
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**
Portfolio of written work	☒	☒	☒	☐	☐	60	18

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Portfolio of practical work	☐	☒	☒	☒	☐	40	12

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment**	**Timetabled Contact**

						Element (%)	Hours
	☐	☐	☐	☐	☐		
Combined total for all components						100%	30 hours

Change Control

What	When	Who
Change from four open book online synchronous quizzes to single closed book, on campus test,	22/11/2024	David Thompson