

Module Descriptor

Title	Chemistry for Environmental and Biosciences		
Session	2024/25	Status	Published
Code	BIOL07022	SCQF Level	L7
Credit Points	20	ECTS (European Credit Transfer Scheme)	10
School	Health and Life Sciences		
Module Co-ordinator	D. 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-Campus¹ ☒	Hybrid² ☐	Online³ ☐	Work -Based Learning⁴ ☐
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 Others	SCQF 7 Exercising some initiative and independence in carrying out 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.
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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	Student Learning Hours
During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	(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
Please select	
Please select	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Chemistry for the biosciences: the essential concepts / Jonathan Crowe, Tony Bradshaw. New York : Oxford University Press, 2010. 2nd ed General chemistry / Darrell D. Ebbing, Steven D. Gammon. Boston, Mass. : Cengage Learning, c2017. 11th ed
(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
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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	K. Rodgers
External Examiner	A. Tsaousis
Accreditation Details	This module is part of the BSc (Hons) Biomedical Science programme; accredited by Institute of Biomedical Science (IBMS) and approved by Health & Care Professions Council (HCPC) as part of BSc (Hons) Applied Biomedical Science programme.

	This module is part of the BSc (Hons) Applied Bioscience, BSc (Hons) Applied Bioscience with Forensic Investigation and BSc (Hons) Applied Bioscience and Zoology programmes; accredited by Royal Society of Biology (RSB).
Module Appears in CPD catalogue	☐ Yes ☒ No
Changes / Version Number	1.02

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Portfolio of Written work. Students will complete four quizzes and four workshops spread evenly throughout the module (two of each in term 1 and two in term 2). Quizzes. The four quizzes will be five questions each and be designed to ensure the student is developing their fundamental chemistry knowledge. The quizzes will be open book tests, hosted online synchronously. Workshops. Four workshops will assess the student's learning and will cover the use of Microsoft Excel, Data Formatting, maths and chemistry. 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/A
(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 Element (%)	Timetabled Contact Hours
N/A	☐	☐	☐	☐	☐		
Combined total for all components						100%	30 hours

Change Control

What	When	Who