



## Module Descriptor

Title	Bioanalysis		
Session	2024/25	Status	Published
Code	BIOL11001	SCQF Level	11
Credit Points	20	ECTS (European Credit Transfer Scheme)	10
School	Health and Life Sciences		
Module Co-ordinator	D Thompson		
<b>Summary of Module</b>			
<p>This module provides experience of analytical techniques used to analyse biological molecules, and includes the analysis and presentation of a variety of different data.</p> <p>Topics covered will include:</p> <ul style="list-style-type: none"><li>(i) spectroscopic analysis; uv/vis, ir, fluorescence</li><li>(ii) chromatography; hplc, gc-ms, lc-ms, affinity, size exclusion, mass spectrometry</li><li>(iv) immunological techniques; ELISA</li><li>(v) bioassays; cytotoxicity testing, biosensors</li></ul> <p>Students will gain an understanding of the theory underpinning these topics as well as hands on practical experience. In addition, to reinforce the importance of working to quality standards, the techniques will be performed with an awareness of quality standards and the accuracy of the result obtained will be assessed.</p> <p>The module will be delivered by lectures and practical work. The practical work will be set in a wider context by the use of extended laboratory reports.</p> <p>This module is designed to create analytical, inquiring, knowledgeable graduates. They will be effective communicators, motivated and research-minded.</p>			

<b>Module Delivery Method</b>	<b>On-Campus<sup>1</sup></b>	<b>Hybrid<sup>2</sup></b>	<b>Online<sup>3</sup></b>	<b>Work -Based Learning<sup>4</sup></b>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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

<b>Campuses for Module Delivery</b>	<input type="checkbox"/> Ayr		<input checked="" type="checkbox"/> Lanarkshire		<input type="checkbox"/> Online / Distance Learning	
	<input type="checkbox"/> Dumfries		<input type="checkbox"/> London		<input type="checkbox"/> Other (specify)	
			<input type="checkbox"/> Paisley			
<b>Terms for Module Delivery</b>	Term 1	<input checked="" type="checkbox"/>	Term 2	<input type="checkbox"/>	Term 3	<input type="checkbox"/>
<b>Long-thin Delivery over more than one Term</b>	Term 1 – Term 2	<input type="checkbox"/>	Term 2 – Term 3	<input type="checkbox"/>	Term 3 – Term 1	<input checked="" type="checkbox"/>

Learning Outcomes	
L1	Demonstrate critical understanding of a range of analytical techniques.
L2	Show proficiency in carrying out a range of analytical techniques and assays.
L3	Demonstrate critical understanding of the ICH guidelines on method validation.
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)	<b>SCQF 11</b> A critical understanding of the principal theories, principles and concepts of a range of analytical techniques.
Practice: Applied Knowledge and Understanding	<b>SCQF 11</b> Use a range of skills techniques and practices associated with analysing biomolecules.
Generic Cognitive skills	<b>SCQF 11</b> Apply critical analysis, evaluation and synthesis to a range of analytical techniques.
Communication, ICT and Numeracy Skills	<b>SCQF 11</b> Undertake critical evaluation of a wide range of numerical and graphical data.
Autonomy, Accountability and Working with Others	<b>SCQF 11</b> Take responsibility for own work and/or significant responsibility for work of others.

Prerequisites	Module Code	Module Title
	Other	
Co-requisites	Module Code	Module Title

Learning and Teaching
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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.

<b>Learning Activities</b>	<b>Student Learning Hours</b>
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
Practice-based Learning	12
Independent Study	152
Please select	
Please select	
<b>TOTAL</b>	<b>200</b>

#### **Indicative Resources**

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

Principles and Practice of Bioanalysis, R F Venn (2008) CRC Press ISBN-10: 0849338573

A Handbook of Bioanalysis and Drug Metabolism, G. Evans (Ed) (2004) CRC Press ISBN-13: 9780-41527194

**(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

<b>Divisional Programme Board</b>	<b>Biological Sciences Health</b>
<b>Overall Assessment Results</b>	<input type="checkbox"/> Pass / Fail <input checked="" type="checkbox"/> Graded
<b>Module Eligible for Compensation</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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.
<b>School Assessment Board</b>	Biology
<b>Moderator</b>	S. Kelly
<b>External Examiner</b>	A. Tsauosis
<b>Accreditation Details</b>	
<b>Module Appears in CPD catalogue</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>Changes / Version Number</b>	2.17

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

#### Assessment 1

Portfolio of Practical Work (80%)

#### Assessment 2

Presentation (20%)

#### 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 Practical Work	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	80	12

#### Component 2

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
Presentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20	4

#### Component 3

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<b>Combined total for all components</b>						100%	hours

#### Change Control

What	When	Who