Module Descriptor

Title	Proteins: Form & Function		
Session	2025/26	**Status**	Published
Code	BIOL09006	**SCQF Level**	9
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Health and Life Sciences**		
Module Co-ordinator	Gary Boyd		

Summary of Module

This module covers the structures and properties of proteins from basic amino acid structure up to quaternary structure and allosteric proteins. A significant part of the module relates to the properties of enzymes including enzyme specificity, the influence of pH and temperature on enzyme reaction rates, enzyme kinetics and enzyme inhibitors. An introduction to enzyme mechanism is dealt with by examining the serine proteases. This is expanded to look at nonenzyme proteins by discussion of immunoassay techniques. The theoretical work is backed up by appropriate laboratory exercises.

This module will work to develop a number of the key "I am UWS" Graduate Attributes to make those who complete the module; Universal (Analytical, inquiring, collaborative), Work Ready (Knowledgeable, digitally literate, effective communicator) and Successful (Autonomous).

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	Describe in detail the key aspects of protein structure
L2	Explain the principal properties of proteins in relation to their structure
L3	Describe the applications of immunoassays and develop the ability to identify and analyse routine professional problems
L4	Carry out, and produce appropriate reports on, laboratory experiments on enzymes and other proteins.
L5	Demonstrate practical competence in spectrophotometric assays.

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 9** Developing understanding of the relationship between structure and properties in proteins. Understanding the use and importance of immunoassay techniques
Practice: Applied Knowledge and Understanding	**SCQF 9** Advancing laboratory skills in areas of protein chemistry, enzymology and immunoassay techniques
Generic Cognitive skills	**SCQF 9** Increasing the understanding of experimental design in the areas covered by the module Critical evaluation of the results of such experimentation
Communication, ICT and Numeracy Skills	**SCQF 9** Computer based data analysis and tabular and graphic representation of experimental data as part of the laboratory report structure.
Autonomy, Accountability and Working with Others	**SCQF 9** Working effectively in groups in a laboratory situation.

Prerequisites	**Module Code**	**Module Title**
	Other Students are recommended to have undertaken Cells and Sugars, BIOL08005, prior to taking this module.	
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.

Teaching will involve a blend of lectures, laboratories, practical demonstrations and tutorials.

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	33
Tutorial / Synchronous Support Activity	9
Laboratory / Practical Demonstration / Workshop	6
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:

Biochemistry – Berg, Tymoczko & Stryer, (2023) 10th. Ed. Freeman

Proteins: Structure & Function – Whitford (2005) Wiley (This is the current edition)

Punt, J., Stranford, S.A., Jones, P.P., Owen, J.A. Kuby Immunology (8th Edition) MacMillan Education (2019)

Basic Immunology by Abul K. Abbas and Andrew H. Lichtman; Saunders Publisher, 7th Ed, 2024.

Website resources produced within University of the West of Scotland

(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:

Attendance at all synchronous sessions (lectures, tutorials and practicals), completion of asynchronous activities, and submission of assessments to meet the learning outcomes of the module. This module has a practical element as part of the Royal Society of Biology accreditation which must be attended.

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	Fiona Menzies
External Examiner	A Tsaousis
Accreditation Details	IBMS/ RSB
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2.18

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Exam 60% of final mark
Assessment 2
Coursework 40% of final mark
Assessment 3
Practical competence 0% of final mark (pass/fail)
(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 closed book (standard)	☒	☒	☒	☐	☐	60	2

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Report of practical/ field/ clinical work	☐	☐	☐	☒	☐	40	0

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Clinical/ Fieldwork/ Practical skills assessment/ Debate/ Interview/ Viva voce/ Oral	☐	☐	☐	☐	☒	0	0
Combined total for all components						100%	2 hours

Change Control

What	When	Who
Indicative Resources	July 2025	F Menzies