Module Descriptor

Title	Fundamentals of Life		
Session	2024/25	**Status**	
Code	BIOL07023	**SCQF Level**	7
Credit Points	40	**ECTS (European Credit Transfer Scheme)**	20
School	**Health and Life Sciences**		
Module Co-ordinator	F Menzies		

Summary of Module

This module is designed as part of a common Level 7 year for all programmes in the Life Science portfolio. As such, it introduces the basic concepts of life and provides underpinning for future study in any area of life sciences including Biosciences, Biomedical Science, Environmental or Occupational Health science.

Topics will include;

- An introduction to the nature and scope of biology, and to the scientific method.

- Cell structure and function including the chemical composition and role of macromolecules (carbohydrates, lipids, proteins and nucleic acids) in the cell.

- Energy acquisition and use will be considered in photosynthesis and respiration, along with the role of enzymes and metabolic pathways.

- The processes of DNA replication, transcription and translation at an introductory level.

- Cell division processes will be investigated by describing the importance of the cell cycle, and the processes of mitosis and meiosis.

An introduction to the range of cells, both prokaryotic and eukaryotic, will serve to introduce students to the concept of diversity at the cellular level, and the role of cells as components of multicellular organisms will be outlined.

The teaching and learning of skills and graduate attributes will be an integral part of this module with laboratory classes incorporating planning, H&S, data analysis, and laboratory skills a key theme. Additionally blended learning, group work and student-led sessions will be at the centre of the student experience.

- To build a background knowledge and understanding of the basics of cellular life.

- To teach basic skills in a biosicence laboratory.

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)	

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	Outline the features of biological systems at the biochemical and cellular levels.
L2	Demonstrate the development of skills in researching, assembling and presenting information relevant to a specific scientific discipline.
L3	Design, Perform and report on fundamental laboratory procedures and demonstrate practical skills in performing basic laboratory procedures and assays.
L4	Demonstrate reflective practice in the evaluation and planning of personal development.
L5	Use a range of techniques, including appropriate computer software, to analyse and display scientific data.

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** Demonstrate knowledge of cell structure and function, the importance of energy and metabolic pathways, and the central role of cell division in the continuity of life.
Practice: Applied Knowledge and Understanding	**SCQF 7** Develop an appreciation of the role of the biosciences in society, and the importance of cell and molecular biology in the context of basic science, and in medical and biotechnological applications.

[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

Generic Cognitive skills	**SCQF 7** Use a range of approaches to develop analytical skills in theoretical and practical aspects of cell and molecular biology.
Communication, ICT and Numeracy Skills	**SCQF 7** Develop skills in gathering and analysing information in the biosciences, from a range of sources, using IT skills as appropriate.
Autonomy, Accountability and Working with Others	**SCQF 7** Work with others in the investigation of laboratory-based exercises in a range of topics in cellular and molecular aspects of the biosciences. Plan and implement scientific practice in a laboratory setting including all health & safety, technical and data analysis steps.

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. On-campus learning events focus on providing active and interactive learning, supported by readings, resources and other activities for students to prepare (pre-learning event) and consolidate learning (post-learning event) . Asynchronous activities will be provided and designed as supplementary activities to support on campus learning events. These should be associated with learning event preparation or post learning event consolidation.	
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	36
Tutorial / Synchronous Support Activity	25
Laboratory / Practical Demonstration / Workshop	35
Independent Study	304
n/a	
n/a	
TOTAL	400

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Textbook: Biology (Openstax - Free online textbook) (https://openstax.org/details/books/biology).

Alternative Textbook: Raven, Johnson, Mason, Losos and Stinger. (2018) Biology (11th edition). McGraw-Hill education (ISBN 978-1-259-25476-5).

VLE: Lecture summaries, seminar and other module information will be available in the Virtual Learning Environment. VLE material based on Biology (Openstax) will be provided.

Laboratory manual / Guidance.

(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.

This module has a practical element as part of the Royal Society of Biology accreditation which must be attended.

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	F Craig
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

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Laboratory based work will be assessed using competency-based testing which will be scheduled into the lab sessions. Practice sessions and multiple opportunities to practice techniques and skills will be provided before summative examination Pass/Fail outcome which must be passed to complete the module assessment.
Assessment 2
Structured learning aimed at completing a series of tasks. This will be as part of timetabled sessions using a range of teaching spaces (Computer lab, technology-enabled learning-suites, Collaborative zones) that will enable students to amass a portfolio of written work (Presentations, Essay, workbooks, case studies) both individually and as part of group working. This will demonstrate both knowledge and skill acquisition commensurate with their level and programme of study. Laboratory skills will also be included through a Workbook/portfolio of completed techniques and skills.
Assessment 3
A series of short focused tests aimed at building basic biological knowledge. These tests will be completed asynchronously within blocks of the module with the opportunity for formative practice tests also provided to students.
(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**
Clinical/ Fieldwork/ Practical skills assessment/ Debate/ Interview/ Viva voce/ Oral	☐	☐	☒	☐	☐	0	12

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Portfolio of written work	☒	☒	☐	☒	☒	70	3

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Class test (written)	☒	☒	☐	☐	☒	30	0
Combined total for all components						100%	15 hours

Change Control

What	When	Who