

# University of the West of Scotland

## Module Descriptor

**Session: 2022/23**

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Status: Published

**Title of Module: Cells & Sugars**

<b>Code: BIOL08005</b>	<b>SCQF Level: 8</b> (Scottish Credit and Qualifications Framework)	<b>Credit Points: 20</b>	<b>ECTS: 10</b> (European Credit Transfer Scheme)
<b>School:</b>	School of Health and Life Sciences		
<b>Module Co-ordinator:</b>	Gary Boyd		

### Summary of Module

Assessment methods may be subject to change, pending outcome of professional body review.

This module begins with revision of basic chemical ideas and an introduction to sugars and macromolecules. It covers the energy metabolism of the cell, particularly with regard to carbohydrates: glycolysis and fermentation of glucose; the tricarboxylic acid cycle; gluconeogenesis; glycogen metabolism, including an introduction to metabolic control mechanisms. Aspects of cell structure are studied with particular relationship to energy metabolism, including the role of mitochondria in oxidative phosphorylation. Non-carbohydrate energy sources (triacylglycerols and amino acids) are introduced. The module is taught using lectures, tutorials and practical work related to the lecture material.

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, collaborative), Work Ready (Knowledgeable, digitally literate, effective communicator) and Successful (Autonomous).

### Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
✓					

#### Face-To-Face

Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

#### Blended

A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

#### Fully Online

Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

#### HybridC

Online with mandatory face-to-face learning on Campus

#### HybridO

Online with optional face-to-face learning on Campus

#### Work-based Learning

Learning activities where the main location for the learning experience is in the workplace.

### Campus(es) for Module Delivery

The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
			✓			

### Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1		Term 2	✓	Term 3	
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### Learning Outcomes: (maximum of 5 statements)

On successful completion of this module the student will be able to:

- L1. Describe the key pathways of carbohydrate metabolism and their control
- L2. Explain cellular structures in relation to energy metabolism.
- L3. Perform and report on laboratory procedures in cell biology and biochemistry

### Employability Skills and Personal Development Planning (PDP) Skills

<b>SCQF Headings</b>	During completion of this module, there will be an opportunity to achieve core skills in:	
Knowledge and Understanding (K and U)	SCQF Level 8. A broad knowledge of metabolic processes and cell structure  Detailed knowledge and understanding of pathways of carbohydrate metabolism	
Practice: Applied Knowledge and Understanding	SCQF Level 8. Use of laboratory techniques in biochemistry and cell structure	
Generic Cognitive skills	SCQF Level 8. Collate and evaluate material from lectures and literature to develop an understanding of areas of biochemistry and cell structure.  Analyse and evaluate material gained from practical sessions.	
Communication, ICT and Numeracy Skills	SCQF Level 8. Communicating information in laboratory reports using word processing and spreadsheet skills for text, tabular information, calculations and graphs	
Autonomy, Accountability and Working with others	SCQF Level 8. Work effectively in groups in laboratory situations.  Contribute to and lead in group discussions in tutorials	
<b>Pre-requisites:</b>	Before undertaking this module the student should have undertaken the following:	
	<b>Module Code:</b> BIOL07023 BIOL07022.	<b>Module Title:</b> Fundamentals of Life Chemistry with Environmental and Biosciences

	<b>Other:</b>	
<b>Co-requisites</b>	<b>Module Code:</b>	<b>Module Title:</b>

\* Indicates that module descriptor is not published.

## Learning and Teaching

<b>Learning Activities</b> During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	<b>Student Learning Hours</b> (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	31
Tutorial/Synchronous Support Activity	8
Laboratory/Practical Demonstration/Workshop	9
Independent Study	152
	200 Hours Total

### \*\*Indicative Resources: (eg. Core text, journals, internet access)

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

Biochemistry – Berg, Tymoczko & Stryer, (2011) 7th. Ed. Freeman

Raven P.H. et al (Eds) 2005 Biology, 7th Edition. McGraw Hill.

Laboratory handbook, UWS.

Online resources (delivered via Moodle) 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)

### Engagement Requirements

In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: [Academic engagement procedure](#)

Where a module has Professional, Statutory or Regulatory Body requirements these will be listed here: Attendance at 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 which must be attended.

### Supplemental Information

<b>Programme Board</b>	Biological Sciences and Health	
<b>Assessment (Pass/Fail)</b>	<b>Results</b>	No

<b>Subject Panel</b>	Biology L7-11
<b>Moderator</b>	Robin Freeburn
<b>External Examiner</b>	A Tsaousis
<b>Accreditation Details</b>	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 programme; accredited by Royal Society of Biology (RSB).
<b>Changes/Version Number</b>	2.15  Changed assessment from unseen exam to online class test (returned to exam as required by PSRB). Changed reference to moodle in indicative resources to VLE. Added standard text to E+D and attendance sections.

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

Exam 60% of final mark

Coursework 40% of final mark

(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 Handbook.)

### Assessment Outcome Grids (Footnote A.)

#### Component 1

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Unseen closed book (standard)	✓	✓		60	2

#### Component 2

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (written)	✓	✓		20	3
Report of practical/ field/ clinical work			✓	20	0
<b>Combined Total For All Components</b>				100%	5 hours

#### Footnotes

A. Referred to within Assessment Section above

B. Identified in the Learning Outcome Section above

**Note(s):**

1. More than one assessment method can be used to assess individual learning outcomes.
2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note). This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

**Equality and Diversity**

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.

Please refer to the UWS Equality and Diversity Policy at the following link: [UWS Equality and Diversity Policy](#)

**[UWS Equality and Diversity Policy](#)**

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)