



## Module Descriptor

<b>Title</b>	Cells & Sugars		
<b>Session</b>	2024/25	<b>Status</b>	Published
<b>Code</b>	BIOL08005	<b>SCQF Level</b>	8
<b>Credit Points</b>	20	<b>ECTS (European Credit Transfer Scheme)</b>	10
<b>School</b>	Health and Life Sciences		
<b>Module Co-ordinator</b>	Gary Boyd		
<b>Summary of Module</b>			
<p>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.</p> <p>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).</p>			

<b>Module Delivery Method</b>	<b>On-Campus<sup>1</sup></b> <input checked="" type="checkbox"/>	<b>Hybrid<sup>2</sup></b> <input type="checkbox"/>	<b>Online<sup>3</sup></b> <input type="checkbox"/>	<b>Work -Based Learning<sup>4</sup></b> <input type="checkbox"/>
<b>Campuses for Module Delivery</b>	<input type="checkbox"/> Ayr <input type="checkbox"/> Dumfries	<input checked="" type="checkbox"/> Lanarkshire <input type="checkbox"/> London <input type="checkbox"/> Paisley	<input type="checkbox"/> Online / Distance Learning <input type="checkbox"/> Other (specify)	

<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>Terms for Module Delivery</b>	Term 1	<input type="checkbox"/>	Term 2	<input checked="" 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 type="checkbox"/>

<b>Learning Outcomes</b>	
<b>L1</b>	Describe the key pathways of carbohydrate metabolism and their control
<b>L2</b>	Explain cellular structures in relation to energy metabolism.
<b>L3</b>	Perform and report on laboratory procedures in cell biology and biochemistry
<b>L4</b>	NA
<b>L5</b>	NA

<b>Employability Skills and Personal Development Planning (PDP) Skills</b>	
<b>SCQF Headings</b>	<b>During completion of this module, there will be an opportunity to achieve core skills in:</b>
<b>Knowledge and Understanding (K and U)</b>	<p><b>SCQF 8</b></p> <p>A broad knowledge of metabolic processes and cell structure</p> <p>Detailed knowledge and understanding of pathways of carbohydrate metabolism</p>
<b>Practice: Applied Knowledge and Understanding</b>	<p><b>SCQF 8</b></p> <p>Use of laboratory techniques in biochemistry and cell structure</p>
<b>Generic Cognitive skills</b>	<p><b>SCQF 8</b></p> <p>Collate and evaluate material from lectures and literature to develop an understanding of areas of biochemistry and cell structure.</p> <p>Analyse and evaluate material gained from practical sessions.</p>
<b>Communication, ICT and Numeracy Skills</b>	<p><b>SCQF 8</b></p> <p>Communicating information in laboratory reports using word processing and spreadsheet skills for text, tabular information, calculations and graphs</p>
<b>Autonomy, Accountability and Working with Others</b>	<p><b>SCQF 8</b></p> <p>Work effectively in groups in laboratory situations.</p> <p>Contribute to and lead in group discussions in tutorials</p>

<b>Prerequisites</b>	<b>Module Code</b> BIOL07023	<b>Module Title</b> Fundamentals of Life
	<b>Other</b> BIOL07022. Chemistry with Environmental and Biosciences	
<b>Co-requisites</b>	<b>Module Code</b>	<b>Module Title</b>

## 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.

### 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

31

Tutorial / Synchronous Support Activity

8

Laboratory / Practical Demonstration / Workshop

9

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, (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)**

## 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 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.

Please refer to the UWS Equality and Diversity Policy at the following link: 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)**

**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 <b>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>
<b>School Assessment Board</b>	BSH L7-11
<b>Moderator</b>	R 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>Module Appears in CPD catalogue</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Changes / Version Number</b>	2.16

**Assessment (also refer to Assessment Outcomes Grids below)****Assessment 1**

Exam 60% of final mark

**Assessment 2**

Coursework 40% of final mark

**Assessment 3**

NA

(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
Exam - Unseen, closed book (standard)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	60	2

**Component 2**

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
Class test (written) Report of practical/field/clinical work	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20 (class test) and 20 (Report of practical/field/clinical work)	3 (class test)

**Component 3**

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
NA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<b>Combined total for all components</b>						100%	5 hours

**Change Control**

What	When	Who