

University of the West of Scotland

Module Descriptor

Session: 2023/24

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Status: Published

Title of Module: Introductory Microbiology

Code: BIOL08004	SCQF Level: 8 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of Health and Life Sciences		
Module Co-ordinator:	Steven Kelly		

Summary of Module

In this module, students will be introduced through lectures, tutorials and practicals to the basic structural, biochemical, physiological and genetic properties of bacteria, viruses and fungi.

Emphasis will be placed on:

- (a) Microbial diversity
- (b) Microbial structure in respect of classification and identification of all these microbial groups
- (c) Principles of microbial metabolism
- (d) Factors affecting microbial growth
- (e) Horizontal gene transfer in microorganisms
- (f) Classification of bacteria, viruses and fungi using names of international standing
- (g) Use of standard microbiological protocols to stain, culture and count microorganisms

During this module, there will be the opportunity to develop a range of technical skills including the handling of microbial cultures in a safe and aseptic manner using standard microbiological techniques, observational skills using the light microscope, recording of data in a logical and accurate manner including estimation of microbial population densities and correct use of scientific convention for tabulation of results.

The module will be assessed by a critical essay, a laboratory logbook and a practical skills test.

This module will work to develop a number of the key "I am UWS" Graduate Attributes to make those who complete the module (e.g.) Universal Work Ready Successful. These will include students who complete the module being; Analytical, Inquiring, Digitally literate, Autonomous, Effective communicator, Collaborative, Research-minded and Driven.

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
	✓	

Learning Outcomes: (maximum of 5 statements)

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

- L1. Describe the structure of the different types of microorganisms and their importance to man
- L2. Outline the major microbial metabolic processes and describe how these influence growth and survival
- L3. Describe factors which influence growth and survival in microorganisms
- L4. Describe the mechanisms of horizontal gene transfer in microorganisms
- L5. Demonstrate ability to carry out standard microbiological techniques according to protocols to minimise infection in accordance with local microbiological safety regulations

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 Level 8. Demonstrate knowledge and understanding of essential facts and principles in respect of basic structural, biochemical, physiological and genetic properties of bacteria, viruses and fungi
Practice: Applied Knowledge and Understanding	SCQF Level 8. Use this knowledge gained to develop solutions to practical problems in a routine but unfamiliar context
Generic Cognitive skills	SCQF Level 8. Link together different content strands when writing standard laboratory reports
Communication, ICT and Numeracy Skills	SCQF Level 8. Be able to communicate effectively in writing scientific reports using data analysis; and be able to communicate orally

Autonomy, Accountability and Working with others	SCQF Level 8. Be able to work individually or in teams as appropriate, demonstrate an ability to organise time management and negotiating skills
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Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	Module Title:
	Other:	
Co-requisites	Module Code:	Module Title:

* Indicates that module descriptor is not published.

Learning and Teaching

The module will be delivered using a blended approach with lectures, tutorials and practical sessions. Students will be required to access lecture content, links to reference sources and other support materials on the VLE. This will provide students with core material which forms the basis of the syllabus and extensive supplementary material to broaden their reading within the subject.

Practical sessions are extremely important in this module and groups will be created within the cohort in order to accommodate laboratory learning. Research skills, academic writing, presentation and practical skills will be enhanced during this module.

Learning Activities	Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	
Lecture/Core Content Delivery	6
Laboratory/Practical Demonstration/Workshop	15
Tutorial/Synchronous Support Activity	18
Asynchronous Class Activity	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:

OpenStax Microbiology available at <https://openstax.org/details/books/microbiology>

Introductory Microbiology VLE Site

(**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, practicals and tutorials), completion of asynchronous activities, and submission of assessments to meet the learning outcomes of the module

Supplemental Information

Programme Board	Biological Sciences and Health
Assessment Results (Pass/Fail)	No
Subject Panel	Biology L7-11
Moderator	Anne Crilly
External Examiner	D Stobo
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). This module is part of the BSc (Hons) Environmental Health with Professional Practice programme; accredited by The Royal Environmental Health Institute of Scotland (REHIS).
Changes/Version Number	2.16 Changed delivery method to HybridC

Assessment: (also refer to Assessment Outcomes Grids below)
Essay (60%)
Practical Log book(30%)
Practical skills test (10%)
(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)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Essay	✓	✓	✓	✓		60	0

Component 2							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Laboratory/ Clinical/ Field notebook					✓	30	0

Component 3							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (practical)					✓	10	2
Combined Total For All Components						100%	2 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)