

University of the West of Scotland

Module Descriptor

Session: 2023/24

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Status: Published

Title of Module: Practical Skills in Biomed. and Env. Health

Code: BIOL08002	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:	Richard Thacker		

Summary of Module

This module provides basic training for students in laboratory techniques, data collection, data analysis, data presentation and introduces basic concepts in epidemiology that are relevant to the fields of biomedical and environmental health. The module begins with a simple consideration of the notion of variability. Students are introduced to the concept of error terms and their presentation and interpretation using confidence limits. Practical laboratory work introduces students to the use of basic laboratory equipment, including the use of spectrophotometers, dilutions and, behaviour and safety in the laboratory. Comparisons of data sets are introduced through the use of t-tests while associations between variables are introduced with correlation and regression analysis. Emphasis is given here to pathogens of biomedical and environmental importance and to their epidemiological characteristics. Practical laboratory work progresses until students complete a two-week experiment during which they calculate the sugar content of a children's cereal. The purpose here is to stress issues associated with a diet high in sugar content. The module concludes with students constructing and presenting a poster that is associated with their practical laboratory work. The module is taught using a blend of lectures, computer laboratories, and practical laboratories within the biological sciences.

- 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, Problem-solver, Research-minded, effective communicator, Collaborative, Resilient 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. Analyse and interpret basic data sets using simple descriptive statistics (mean, standard deviation, standard error, confidence limits, t-tests) and epidemiological approaches in the fields of Biomedical and Environmental Health.
L2. Describe and interpret simple statistical associations between variables using regression and correlation analysis.
L3. Use basic practical laboratory equipment including spectrophotometers and understand the process and principles associated with the dilution of chemical compounds.
L4. Construct a poster associated with biological data and deliver a 5 minute presentation to a class of peers on the poster's content.
L5. Demonstrate competency in a range of technical laboratory skills

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. Understand the key feature of variability in both biological and physical data sets
Practice: Applied Knowledge and Understanding	SCQF Level 8. Use basic statistical techniques to analyse scientific data sets Use basic laboratory equipment in the conduct of scientific experiments
Generic Cognitive skills	SCQF Level 8. Use of basic scientific principles in approaches towards data collection
Communication, ICT and Numeracy Skills	SCQF Level 8. Analysis and presentation of scientific data, both orally and visually
Autonomy, Accountability and Working with others	SCQF Level 8. Basic laboratory safety and behaviour Working with others in a practical laboratory environment

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	
During completion of this module, the learning activities undertaken to achieve the module learning outcomes will include formal lectures, computer laboratories, practical laboratories and independent study. VLE-based support materials will be available to support the module	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	12
Laboratory/Practical Demonstration/Workshop	36
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: Jones et al. (2007). Practical Skills in Biology, 4th Edition, Pearson
(**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 (workshops, practical), 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.

Supplemental Information

Programme Board	Biological Sciences and Health
Assessment Results (Pass/Fail)	No
Subject Panel	Biology L7-11
Moderator	Gary Boyd
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). 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	2.12 Update to attendance and Equality Statements, update to hybridC delivery

Assessment: (also refer to Assessment Outcomes Grids below)

Practical laboratories (40%), Computer Laboratories (40%, Oral Presentation (20%)

Competency in technical laboratory skills will be assessed as 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 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
Report of practical/ field/ clinical work	✓	✓	✓			80	36
Presentation	✓	✓		✓		20	12

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
Clinical/ Fieldwork/ Practical skills assessment/ Debate/ Interview/ Viva voce/ Oral					✓	0	0
Combined Total For All Components						100%	48 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)