

Session: 2022/23

Title of Module: Research Design			
Code: BIOL11007	SCQF Level: 11 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of Health and Life Sciences		
Module Co-ordinator:	Roderick Williams		
Summary of Module			
<p>This module provides the foundation for the execution of good research. Well-planned research is the basis for increasing knowledge in the field of biomedical and life sciences and understanding of the processes involved is essential for the execution of a successful research project. These fundamentals include the ability to read and critically assess previous work, an understanding of the application and limitations of statistical techniques and the competence to describe and to write, following accepted scientific practice, a comprehensive research proposal.</p> <p>Topics to be covered in the module include academic writing, practical statistical analysis, ethics, risk assessment, COSHH, principles of experimental design – validity and efficiency of experiments, requirements of a rigorous research proposal, assessment of research proposals. The fully online/distance learning version of the module is available only to students currently employed by an appropriate UK-based healthcare provider (e.g. IBMS-approved training site). This module will work to develop a number of the key “I am UWS” Graduate Attributes to make those who complete the module, have Universal skills, that will make them Work Ready and Successful</p>			

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
	✓	✓			
<p>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.</p> <p>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</p> <p>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.</p> <p>HybridC Online with mandatory face-to-face learning on Campus</p> <p>HybridO Online with optional face-to-face learning on Campus</p> <p>Work-based Learning Learning activities where the main location for the learning experience is in the workplace.</p>					

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. Design and use a spreadsheet to help with statistical calculations to critically evaluate laboratory data.	
L2. Demonstrate a critical awareness of the Health and Safety issues involved in working in a life science laboratory.	
L3. Demonstrate critical understanding of the ethical considerations appropriate to the field of study.	
L4. Construct a rigorous research proposal.	
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 11. Evaluating and planning a research proposal, taking account of any ethical considerations.
Practice: Applied Knowledge and Understanding	SCQF Level 11. Recording, presenting and analysing data by means of modern statistical methods.
Generic Cognitive skills	SCQF Level 11. Carrying out detailed risk and COSHH assessments for work in the biomedical and life science industry.
Communication, ICT and Numeracy Skills	SCQF Level 11. Using IT (especially Microsoft Office, Excel and Word) for the preparation of a research proposal.
Autonomy, Accountability and Working with others	SCQF Level 11. Collaboratively planning work activities and deciding on individual responsibilities.

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	
<p>The module will be delivered by means of lectures, practical computing sessions and tutorials. Students will be required to access lecture notes, links to reference sources and other support materials on 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. Lectures will deliver fundamental information which will assist students in understanding key concepts relevant to research design, including ethics and health and safety considerations. Practical computing sessions will facilitate learning in statistical methods and experience of using statistical software.</p> <p>Assessment for the module will be based on a statistics assignment (30%) and a fully detailed research proposal and PowerPoint presentation (70%), to include introduction, scientific hypothesis to be tested, capabilities, information on sample preparation (including risk and COSHH assessments), a discussion of techniques to be used, analysis of costs and ethical requirements of proposed work.</p>	
<p>Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:</p>	<p>Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)</p>
Lecture/Core Content Delivery	24
Tutorial/Synchronous Support Activity	12
Independent Study	164
	200 Hours Total
**Indicative Resources: (eg. Core text, journals, internet access)	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Bioethics for Scientists, J. Bryant., L Baggott la Velle & J. Searle (Eds), Wiley (2002) ISBN-10: 0471495328</p> <p>Bioethics: An introduction for the Biosciences, B. Mephram, OUP Oxford (2008) ISBN-10: 0199214301</p>	
<p>(**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)</p>	

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. Attendance at synchronous sessions is not required for students undertaking the distance learning version of the module.

Supplemental Information

Programme Board	Biological Sciences and Health
Assessment Results (Pass/Fail)	No
Subject Panel	Biology L7-11
Moderator	Andrew MacKenzie
External Examiner	D Stobo
Accreditation Details	This module is part of the MSc Advanced Biomedical Science programme; accredited by Institute of Biomedical Science (IBMS).
Version Number	2.12

Assessment: (also refer to Assessment Outcomes Grids below)

Assessment for the module will be based on a statistics assignment (30%)

Fully detailed research proposal and PowerPoint presentation (70%), to include introduction, scientific hypothesis to be tested, capabilities, information on sample preparation (including risk and COSHH assessments), a discussion of techniques to be used, analysis of costs and ethical requirements of proposed work.

(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)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Portfolio of written work	✓				30	0
Component 2						
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Portfolio of written work		✓	✓	✓	70	0
Combined Total For All Components					100%	0 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:
<https://www.uws.ac.uk/about-uws/uws-commitments/equality-diversity-inclusion/>

[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)