

**University of the West of Scotland  
Module Descriptor**

Session: 2022/23

<b>Title of Module: MSc Science Research Project</b>			
<b>Code: CHEM11004</b>	<b>SCQF Level: 11</b> (Scottish Credit and Qualifications Framework)	<b>Credit Points: 60</b>	<b>ECTS: 30</b> (European Credit Transfer Scheme)
<b>School:</b>	School of Computing, Engineering and Physical Sciences		
<b>Module Co-ordinator:</b>	Mohammed Yaseen		
<b>Summary of Module</b>			
<p>This is the project module for the MSc Formulation Science programme. It is worth 60 credit points, students will be allocated a project which will involve;</p> <ol style="list-style-type: none"> <li>1. Accumulation and critical assessment of relevant literature from primary research sources (journals, government reports, technical books etc) demonstrated through an initial project outline report covering current, relevant literature existing on the research topic as well as the various key methods and techniques to be employed in the project.</li> <li>2. Detailed planning of targeted project goals, appropriate COSHH documentation produced and demonstrating a thorough understanding of the technical requirements of the proposed research. Equipment and technical needs to be clearly identified, booked in advance, technical staff notified.</li> <li>3. Carrying out the relevant, critical research.</li> <li>4. Producing a final, appropriately structured research report which details the aims of the research, the relevant state of knowledge in the particular research area, the need for the current research project, the research methods used, their advantages and drawbacks, a critical analysis and assessment of results, appropriate methods of presentation (graphs, charts, tables), appropriate methods for the critical analysis of the results obtained (statistical analysis). Critical discussion of and conclusions drawn from the research carried out in light of current theoretical and practical understanding of the research area, suggestions for future work and relevant reference included.</li> </ol> <p>Graduate Attribute include; Analytical, problem solver, critical, communication, motivation, reflective, innovative Formative feedback will be given by the supervisory team in the form of regular meetings and critical examination of the report before summative assessment.</p>			

<b>Module Delivery Method</b>					
<b>Face-To-Face</b>	<b>Blended</b>	<b>Fully Online</b>	<b>HybridC</b>	<b>HybridO</b>	<b>Work-based Learning</b>
	✓				
<p><b>Face-To-Face</b> 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><b>Blended</b> 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</p>					

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. To critically evaluate and summarise current understanding of key scientific research in the form of a written report.
- L2. To design and carry out appropriate research in order to rigorously test a scientific hypothesis, or revise current understanding.
- L3. To critically evaluate scientific results using appropriate statistical methods and to draw conclusions as to their relevance to current understanding of the field.
- L4. To generate a formatted, structured, critical report detailing the background of the research, research aims, methods and analysis and a critical assessment of the research in terms of current understanding of that research area.

**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. Critical and integrated understanding of current scientific literature, available research techniques and practice, applicability of appropriate statistical approach and methodology to the relevant research project.
Practice: Applied Knowledge and Understanding	SCQF Level 11. Application of advanced laboratory techniques, safety and calculation protocols.
Generic Cognitive skills	SCQF Level 11. Critically review current literature of relevance to the research topic. Make judgements where information comes from a number of sources.

	Demonstrate a high degree of originality in dealing with professional level issues relating to the research project.	
Communication, ICT and Numeracy Skills	SCQF Level 11. Interpret, use and evaluate a unique range of numerical or graphical data. Presentation of scientific knowledge through report writing and oral communication skills.	
Autonomy, Accountability and Working with others	SCQF Level 11. Designing a unique work profile, meeting deadlines for reports and presentations. Integrating their project requirements with technical support staff responsible for laboratories and specialist equipment.	
<b>Pre-requisites:</b>	Before undertaking this module the student should have undertaken the following:	
	<b>Module Code:</b>	<b>Module Title:</b>
	<b>Other:</b>	Students should have completed PGDip level course and shown a PDP covering their previous work.
<b>Co-requisites</b>	<b>Module Code:</b>	<b>Module Title:</b>

\* Indicates that module descriptor is not published.

<b>Learning and Teaching</b>	
This module is student-led in so far as they are responsible for the planning and implementation of the project work (in consultation with relevant staff members). The agreed individual or group research programme producing a structured written research report.	
<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)
Laboratory/Practical Demonstration/Workshop	140
Independent Study	460
	600 Hours Total
<b>**Indicative Resources: (eg. Core text, journals, internet access)</b>	
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Access to library; electronic journals, advanced textbooks, appropriate techniques and labs (computer, chemical).	
(**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)	
<b>Engagement Requirements</b>	
Students are academically engaged if they are regularly engaged with timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning	

resources, and complete assessments and submit these on time. Please refer to the Academic Engagement and Attendance Procedure at the following link: [Academic Engagement and Attendance Procedure](#)

### Supplemental Information

<b>Programme Board</b>	Physical Sciences
<b>Assessment Results (Pass/Fail)</b>	No
<b>Subject Panel</b>	Physical Sciences
<b>Moderator</b>	Dr Callum McHugh
<b>External Examiner</b>	M Symes
<b>Accreditation Details</b>	
<b>Changes/Version Number</b>	2.15 V1.3-Subject Panel title updated V1.4-XX details updated V1.5-KIS updates V1.6 - change to module co-ordinator

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

The assessment in this module is based on continuous assessment only, and consists of the following elements: (i) Production of a project title and research plan worth 10%, (ii) project work and lab book(planning and implementation) worth 10%  
(iii) a dissertation based on the research carried out worth 80% of the 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.)

<b>Component 1</b>						
<b>Assessment Type (Footnote B.)</b>	<b>Learning Outcome (1)</b>	<b>Learning Outcome (2)</b>	<b>Learning Outcome (3)</b>	<b>Learning Outcome (4)</b>	<b>Weighting (%) of Assessment Element</b>	<b>Timetabled Contact Hours</b>
Dissertation/ Project report/ Thesis	✓		✓	✓	80	0
Review/ Article/ Critique/ Paper	✓	✓			10	0
Workbook/ Laboratory notebook/ Diary/		✓	✓		10	0

Training log/ Learning log						
<b>Combined Total For All Components</b>					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**

This module is suitable for any student with appropriate chemistry/biochemistry/molecular biology background, however it should be noted that, for laboratory based projects, in order for you to complete this module the laboratory element of coursework will require to be undertaken, special support can be provided where necessary, consequently, if special support is needed to complete this part of the module, then the University's Health and Safety Officer should be consulted to make sure that safety in the laboratory is not compromised.

Current University Policy on Equality and Diversity applies.

[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)