

## University of the West of Scotland

## Module Descriptor

Session: 2024/25

<b>Title of Module: Science Project</b>			
<b>Code: CHEM10001</b>	<b>SCQF Level: 9 (Scottish Credit and Qualifications Framework)</b>	<b>Credit Points: 40</b>	<b>ECTS: 10 (European Credit Transfer Scheme)</b>
<b>School:</b>	School of Computing, Engineering and Physical Sciences		
<b>Module Co-ordinator:</b>	Dr Alastair Marr		
<b>Summary of Module</b>			
<p>The projects may be; field based, modelling studies, laboratory based, or be a 'desk based' assessment of an area of science. CHEM10001 runs over trimesters 1 and 2 attracting <b>40</b> credit points.</p> <p>Induction week - students assess the offered projects with allocation according to preference <u>and</u> availability.</p> <p>Module structure:</p> <ol style="list-style-type: none"> <li>1. Literature Review - Relevant literature from primary research sources.</li> <li>2. Poster presentation summarising literature, methods and techniques relevant to project objectives.</li> <li>3. Carrying out research.</li> <li>4. Production of a research report, including a rationale, research aims, state of knowledge (literature review above), data derived, experimental methods, analysis of results including statistical &amp; error analysis, appropriate layout of graphs, tables etc, conclusions, future work and relevant references (UWS Harvard referencing system).</li> <li>5. A short oral presentation of results and conclusions.</li> </ol> <p>Ongoing formative feedback will be given by the supervisor and at poster / oral presentations.</p> <p>A critical assessment of results and methods is required at this level. Research and statistical method lectures will be presented in weeks 1 - 6.</p> <p>These cover research methods viz; peer-reviewed literature, technical books, government reports, library resources, referencing, essential statistical methods and error measurements.</p>			

Examples are presented for illustration covering both straight line and fitting curves. Assessment of these skills will take the form of assessed coursework.

Graduate Attributes: Academic research / literature review competency, scientific thinker, problem solver, practical skills, calculation numeracy, referencing. Personal / Professional - Team working, written & verbal communicator, motivated in science, presentation / poster skills, lab EHS competency, awareness of current research

### Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	Hybrid0	Work-Based Learning
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

See Guidance Note for details.

### 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) (tick as appropriate)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Add name

### Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1	Term 2	Term 3
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Learning Outcomes: (maximum of 5 statements)

These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.

At the end of this module the student will be able to:

L1	To design and use a spreadsheet to help with statistical calculations of standard laboratory data or data collected through modelling, or field research
L2	To critically evaluate and summarise current understanding of key scientific research in both written report and poster presentation

L3	To design and carry out appropriate research in order to rigorously test a scientific hypothesis, or revise current understanding.	
L4	To critically evaluate scientific results using appropriate statistical methods and to draw conclusions as to their relevance to current understanding of the field.	
L5	To present information both orally and in 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.	
<b>Employability Skills and Personal Development Planning (PDP) Skills</b>		
<b>SCQF Headings</b>	During completion of this module, there will be an opportunity to achieve core skills in:	
Knowledge and Understanding (K and U)	<p><b>SCQF Level 10</b></p> <p>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.</p>	
Practice: Applied Knowledge and Understanding	<p><b>SCQF Level 10</b></p> <p>Application of standard laboratory calculation protocols e.g. control charts and assessment of process capability. Knowledge of field data collection and analysis in the case of field research projects.</p>	
Generic Cognitive skills	<p><b>SCQF Level 10</b></p> <p>Ability to gather literature relevant to the research topic. Critically review current literature of relevance to the research topic. Make judgments where information comes from a number of sources. Demonstrate some originality in dealing with professional level issues relating to the research project.</p>	
Communication, ICT and Numeracy Skills	<p><b>SCQF Level 10</b></p> <p>Interpret, use and evaluate a range of numerical or graphical data. Presentation of scientific knowledge through report writing and oral presentation.</p>	
Autonomy, Accountability and Working with others	<p><b>SCQF Level 10</b></p> <p>Designing a unique work profile, meeting deadlines for reports and presentations.</p>	
<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>	
<b>Co-requisites</b>	<b>Module Code:</b>	<b>Module Title:</b>

\*Indicates that module descriptor is not published.

<b>Learning and Teaching</b>	
<b>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.</b>	
<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)
Lecture/Core Content Delivery	8
Tutorial/Synchronous Support Activity	12
Laboratory/Practical Demonstration/Workshop	10
Independent Study	370
	400 Hours Total
<b>**Indicative Resources: (eg. Core text, journals, internet access)</b>	
<p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes:</p> <p>Access to library; electronic journals, textbooks, appropriate techniques and labs (computer, chemical).</p> <p>Click or tap here to enter text.</p> <p>Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE.</p>	

Resources should be listed in Harvard Cite Them Rite referencing style or agreed professional body deviation and in alphabetical order.

(\*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:

Academic Engagement procedure

**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](#).

Please ensure any specific requirements are detailed in this section. Module Co-ordinators should consider the accessibility of their module for groups with protected characteristics..

(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>	Physical Sciences
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<b>Assessment Results (Pass/Fail)</b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>School Assessment Board</b>	Physical Sciences
<b>Moderator</b>	Dr Callum McHugh
<b>External Examiner</b>	M Paterson
<b>Accreditation Details</b>	This module is accredited by the royal Society of Chemistry(RSC) as part of the BSc(Hons) Chemistry programme
<b>Changes/Version Number</b>	2.16

<b>Assessment: (also refer to Assessment Outcomes Grids below)</b>
<p>This section should make transparent what assessment categories form part of this module (stating what % contributes to the final mark). Maximum of 3 main assessment categories can be identified (which may comprise smaller elements of assessment). <b>NB: The 30% aggregate regulation (Reg. 3.9) (40% for PG) for each main category must be taken into account. When using PSMD, if all assessments are recorded in the one box, only one assessment grid will show and the 30% (40% at PG) aggregate regulation will not stand. For the aggregate regulation to stand, each component of assessment must be captured in a separate box.</b> Please provide brief information about the overall approach to assessment that is taken within the module. In order to be flexible with assessment delivery, be brief, but do state assessment type (e.g. written assignment rather than “essay” / presentation, etc ) and keep the detail for the module handbook. <a href="#">Click or tap here to enter text.</a></p>
<p>Assessment 1 – Coursework, Poster, Presentation and Conduct of Study</p>
<p>Assessment 2 - Dissertation</p>
<p>(N.B. (i) <b>Assessment Outcomes Grids</b> 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 <b>indicative schedule</b> listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)</p>

**Assessment Outcome Grids (See Guidance Note)**

<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>Learning Outcome (5)</b>	<b>Weighting (%) of Assessment Element</b>	<b>Timetabled Contact Hours</b>
Coursework, Poster, Presentation and Conduct of Study	X	X		X	X	40	12

<b>Component 2</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	X	X	X	X		60	0

<b>Combined Total for All Components</b>						<b>100%</b>	<b>12 hours</b>
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**Change Control:**

<b>What</b>	<b>When</b>	<b>Who</b>

Version Number: MD Template 1 (2023-24)