

University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Scientific Investigation			
Code: CHEM07009	SCQF Level: 7 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Mostafa Rateb		
Summary of Module			
<p>This module adopts a student-centred learning approach to the general introduction of scientific investigation with a focus in authentic topic areas appropriate to the degree programme being followed. The development of information retrieval and presentation skills play a key role in this module. Both generic and cohort specific delivery and assessment of the module will undertaken be through a selection of activities such as lectures, case studies, lab-based exercises, reports and presentations.</p> <p>Authentic information retrieval tasks are set throughout the module, with support provided to enable the production of the required outputs. The context within which the material is delivered will vary according to the student's degree programme and area of interest. The general areas covered and assessed are as follows:</p> <ol style="list-style-type: none"> 1. The importance of scientific investigation and methodology. 2. Practical skills in scientific investigation, including (but not limited to) data recording, report writing and presentation skills both oral and written. 3. Personal Development Planning and reflective practice appropriate to each student's scientific discipline. <p>Activities underpinning Personal Development Planning (PDP) are integrated throughout the module and students are required to consider their own reflective practice. The graduate attributes relevant to this module are given below:</p> <ul style="list-style-type: none"> • Academic: Critical thinker, analytical, enquiring, knowledgeable, digitally literate, problem solver, autonomous, incisive, innovative • Personal: Effective communicator, influential, motivated, team player • Professional: Collaborative, research-minded, enterprising, ambitious, driven 			

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	Hybrid 0	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	<input type="checkbox"/>	Term 2	<input checked="" type="checkbox"/>	Term 3	<input 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	Display knowledge of the basic principles, techniques and applications of scientific investigation methodology.
L2	Demonstrate the development of skills in researching, assembling and presenting information relevant to a specific scientific discipline.
L3	Present information gathered from studies based on specific topics appropriate to the student's interests.
L4	Demonstrate reflective practice in the evaluation and planning of personal development.

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 7 Developing a basic understanding of the role of scientific methodology. Developing an appreciation of the various scientific techniques and disciplines involved in investigative scientific procedures in a range of contexts, including forensic science, chemistry, biology, physics, psychology, environmental and health-related disciplines. Developing an understanding of what is required in scientific report writing and the quality, use and accurate citation of reference materials.
Practice: Applied Knowledge and Understanding	SCQF Level 7 An appreciation of the use of scientific techniques (such as chromatography, DNA fingerprinting, trace analysis in forensic science). A basic understanding of how they work in routine and non routine contexts.

	An understanding of the basic requirements and structure of a scientific report.	
Generic Cognitive skills	SCQF Level 7 Gathering, evaluating and presenting information, formulating arguments based on evidence, use of word processing in structured report writing, use and citation of references.	
Communication, ICT and Numeracy Skills	SCQF Level 7 Information retrieval from a variety of sources, its assessment and integration. Structured report writing. Presentation of information in a variety of formats using a range of methods.	
Autonomy, Accountability and Working with others	SCQF Level 7 Working to deadlines and working with others to achieve outcomes within a defined context and timescale. Developing a student centered approach to learning and the application of reflective practice in PDP.	
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 This module covers a variety of theoretical and conceptual areas, which require a range of knowledge and skills to be displayed and exercised. Delivery of its syllabus content therefore involves a diversity of teaching and assessment methods suitable to the learning outcomes of the module; these include formal lectures, structured tutorials (work closely integrated with the lecture material), practical work where appropriate, completion and submission of written coursework making use of appropriate forms of IT and VLE, and independent study. Teaching materials will be available on Aula to support delivery of the module.	
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.	
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
Tutorial/Synchronous Support Activity	24
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:</p> <p>Access to library materials (internet, e-journals, books) relevant to individual projects</p> <p>Access to internet sources relevant to individual projects.</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>	
Attendance and Engagement Requirements	
<p>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.</p> <p>For the purposes of this module, academic engagement equates to the following:</p> <p>Students should attend all face-to-face lectures, and workshops. They should submit their assignments in the allocated links online before the specified deadline.</p>	
Equality and Diversity	
<p>The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code.</p> <p>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..</p> <p>This module is suitable for any student with appropriate chemistry background, however it should be noted that 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</p>	
<p>(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)</p>	

Supplemental Information

Divisional Programme Board	Physical Sciences
Assessment Results (Pass/Fail)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
School Assessment Board	Physical Sciences
Moderator	Callum McHugh
External Examiner	I Turner
Accreditation Details	This module is accredited by IBMS as part of BSc (Hons) Biomedical Science; accredited by IBMS and approved by HPC as part of BSc (Hons) Advanced Biomedical Science; accredited by REHIS as part of BSc (Hons) Environmental Health; accredited by IOSH as part of BSc Occupational Safety and Health. Accredited by Royal Society of Chemistry (RSC) as part of BSc (Hons) Chemistry programme.
Changes/Version Number	Module Coordinator and Moderator updated (16/03/2023)

Assessment: (also refer to Assessment Outcomes Grids below)

Continuous Assessment – 100%

(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 Module Handbook.)

Assessment Outcome Grids (See Guidance Note)

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
Case studies	X	X	X	X	X	75	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

Demonstrations/ Poster presentations/ Exhibitions	X	X	X	X	X	25	0
Combined Total for All Components						100%	0 hours