Module Descriptor

Title	Research Methods in Computing		
Session	2025/26	**Status**	Published
Code	COMP09092	**SCQF Level**	9
Credit Points	10	**ECTS (European Credit Transfer Scheme)**	5
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Santiago Matalonga		

Summary of Module

This module is designed to provide undergraduate students with the necessary skills and knowledge to undertake a substantial computing-related research project. The module will focus on the nature of research in the area of computing, examining the skills and knowledge necessary in order to specify and design an appropriate research study, as well as justifying the choice of suitable research methods. The module is aimed at allowing students to develop their research and writing skills within the context of undertaking a computing-related research project of their choice.

The skills and knowledge are intended to provide a firm foundation for students who will go on to undertake a computing-related Honours Project, as well as being relevant to research and investigation activities commonly undertaken within many organisations for those student who do not wish to proceed to Honours level.

Students will be introduced to:

- evaluating secondary sources in gathering, synthesising and evaluating information in undertaking a literature review or technical review in their chosen computing-related research area;
- different research methods used for undertaking research in Computing - such as quantitative, qualitative and mixed methods research;
- specific research tools and techniques such as interviews, questionnaires, surveys, observation, case studies, focus groups, simulations, statistical analysis;
- writing a research proposal and recognising the importance of addressing issues relating to research ethics.

Module Delivery Method	On-Campus[1] ☒	Hybrid[2] ☒	Online[3] ☐	Work -Based Learning[4] ☐
Campuses for Module Delivery	☒ Ayr ☒ Dumfries	☒ Lanarkshire ☐ London ☒ Paisley	☒ Online / Distance Learning ☐ Other (specify) Online Delivery / Distance Learning applies to delivery in the BSc (Hons) Data, AI and Software Engineering programme only	

Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☒
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Identify, gather and critique relevant information, evidence and arguments from relevant literature and credible sources.
L2	Critically review and evaluate appropriate research methodologies, approaches and techniques relevant to their proposed area of research taking into account theoretical, practical and ethical considerations.
L3	Develop and construct a suitable research proposal and strategy that is justifiable, and is of an appropriate level for Honours research.
L4	N/A
L5	N/A

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 9** Gathering, synthesising and evaluating relevant information and data in identifying and justifying clearly stated research question(s),

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

	establishing a relevant research methodology that is ethically sound and appropriate to the proposed area of research.
Practice: Applied Knowledge and Understanding	**SCQF 9** Building upon already acquired skills and knowledge in undertaking a critical analysis of the proposed area of research, identifying and applying relevant research design strategies and methods, identifying appropriate data collection and analysis techniques
Generic Cognitive skills	**SCQF 9** Building upon already acquired skills and knowledge in undertaking a critical analysis of the proposed area of research, identifying and applying relevant research design strategies and methods, identifying appropriate data collection and analysis techniques.
Communication, ICT and Numeracy Skills	**SCQF 9** Identifying and discussing relevant software and ICT platforms to support research in the proposed area of research in relation to data collection and data analysis in order to support the stated research aims and objectives
Autonomy, Accountability and Working with Others	**SCQF 9** Developing the ability to work independently, time manage and show initiative in identifying a relevant and significant area of research which must be justified using appropriate evidence.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching	
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. Lectures and tutorial exercises will be used to explore important concepts and issues relating to this module. Exercises may be undertaken on an individual and/or group basis. Completing the module is likely to involve students engaging in significant independent study of relevant methods and techniques. Where appropriate guest lectures will be used to provide expert insight into particular research areas and specialist techniques/technologies (e.g. computer simulations, statistical analysis techniques).	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	8
Tutorial / Synchronous Support Activity	10
Personal Development Plan	1
Independent Study	81

Please select	
Please select	
TOTAL	100

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Oates, B. J. (2012) Researching Information Systems and Computing. Sage Creswell, J.W. (2014) Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th Edition). Sage Dawson, C. (2015) Projects in Computing and Information Systems: A Student's Guide. Pearson Cornford, T. and Smithson, S. (2006) Project Research in Information Systems: A Student's Guide. (2md Edition) Palgrave MacMillan. Lazar, J., Feng, J.H. and Hochheiser, H. (2009) Research Methods in Human-Computer Interaction. Wiley & Sons.
(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:** The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. You will scan your attendance via the scanners each time you are on-campus and you will login to the VLE several times per week. Where you are unable to attend a timetabled learning session due to illness or other circumstance, you should notify the Programme Leader that you cannot attend. Across the School an 80% attendance threshold is set. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

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. Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. Specialist assistive equipment, support provision and adjustment to assessment practice in accordance with the University's policies and regulations.
(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

Divisional Programme Board	**Computing**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Business and Applied Computing
Moderator	TBC
External Examiner	V Sharma
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1.21

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Research Proposal Report (100%) - containing a literature/technical review and research design proposal
Assessment 2
Assessment 3
(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.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Report of practical/field/clinical work	☒	☒	☒	☐	☐	100	

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	hours

Change Control

What	When	Who
Attendance and Engagement and Equality and Diversity Statements	20/01/25	R Moffat