

University of the West of Scotland

Module Descriptor

Session: 2022/23

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Status: Published

Title of Module: MSc Dissertation (Mech Eng)

Code: ENGG11023	SCQF Level: 11 (Scottish Credit and Qualifications Framework)	Credit Points: 60	ECTS: 30 (European Credit Transfer Scheme)
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Bassam Rakhshani		

Summary of Module

This module requires the student to conduct research into an agreed topic within than area of relevance to Mechanical Engineering.

This will involve a review of academic literature, including books, journals and articles related to the area of study and will allow the student to set their project objectives in the context of the wider body of academic knowledge relating to the subject being researched. The student will then develop the initial research to a level commensurate to the award of a Master's degree.

Throughout the module the student will be supported by a member of academic staff who will advise on matters relating to the topic of research and completion of the written dissertation. The module will also include a variation of themes within civil engineering and will be either desk-based or involved laboratory or field work in relation to the acquisition of data.

The work undertaken during the project, the conclusions drawn and recommendations for future work will be presented in a written dissertation in the agreed format, Following submission of the completed dissertation the student will be required to present and defend their thesis as part of the overall module assessment requirements.

During the course of this module students will develop their UWS Graduate Attributes (<https://www.uws.ac.uk/current-students/your-graduate-attributes/>) in the following areas-

- Universal: Academic - Critical thinking, analytical & inquiring mind; Personal- Ethical; Professional- Research Minded
- Work-Ready: Academic - Knowledgeable, Digitally Literate, Problem Solver; Personal - Effective Communicator; Professional - Ambitious
- Successful : Academic - Autonomous; Personal - Resilient; Professional- Driven
- This module has been reviewed and updated, taking cognisance of the University's Curriculum Framework principles. Examples of this are found within the module such as active and engaging practical testing laboratories, module assessment which reflects industry design activities development of digital intelligence meta-skills, learning synergies across modules and levels of study, self-direction of curriculum, one-one supervision providing concurrent weekly feedback on progress and the use of real-world practical student generated data.

Module Delivery Method

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
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✓	✓				
<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. Execute and successfully complete a substantial piece of advanced independent work relative to the theories, practical issues and problems in an area of Mechanical Engineering
L2. Develop the ability to critically review and consolidate knowledge in a number of areas of study relating to Mechanical Engineering;
L3. Critically assess and evaluate the relevant empirical evidence to refine or refute any current theories relating to the problem or issue under investigation
L4. Communicate the findings of the investigation in an orderly, reasoned and analytical manner

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. Develop extensive, detailed and critical knowledge and understanding in one or more of the specialisms of Mechanical Engineering which is informed by current research and development within each specialism

Practice: Applied Knowledge and Understanding	<p>SCQF Level 11.</p> <p>Define, plan and execute a research project within the area of Mechanical Engineering.</p> <p>Planning and executing a significant project of Mechanical Engineering research, investigation or development.</p> <p>Develop expertise in a range of specialised Mechanical Engineering skills, techniques, practices and associated materials that are at the forefront of, and are informed by recent developments/research.</p>
Generic Cognitive skills	<p>SCQF Level 11.</p> <p>Critically review and consolidate knowledge, skills, practices and thinking involving Mechanical Engineering.</p> <p>Assessing critical information or data and making informed judgments.</p> <p>Critically review information and existing theories/practices from a variety of sources and applying it as part of a research investigation.</p>
Communication, ICT and Numeracy Skills	<p>SCQF Level 11.</p> <p>Ability to perform, interpret and evaluate engineering data in problem solving.</p> <p>Communicate effectively, orally and in writing with peers and superiors using data analysis where appropriate.</p> <p>Use a wide range of computer software and associated ICT equipment to enhance methods of communication.</p> <p>Effectively demonstrate the application of Mechanical Engineering software to improve the performance of the engineering function.</p>
Autonomy, Accountability and Working with others	<p>SCQF Level 11.</p> <p>Identifying and addressing their own learning needs in support of research activity.</p> <p>Identifying solutions and strategies in solving research problems.</p> <p>Demonstrate high motivational skills when working individually.</p> <p>Display appropriate time management skills when undertaking research activities.</p>

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>Learning Activities</p> <p>During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:</p>	<p>Student Learning Hours</p> <p>(Normally totalling 200 hours):</p> <p>(Note: Learning hours include both contact hours and hours spent on other learning activities)</p>
Lecture/Core Content Delivery	12

Asynchronous Class Activity	588
	600 Hours Total

**Indicative Resources: (eg. Core text, journals, internet access)

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

Design Research: Methods and Perspectives, Edited by Brenda Laurel, Cambridge: MIT Press, (2003).

Leady, PD (2004) Practical Research: Planning & Design (8th Edition). Prentice Hall.

Mitchell, M. Jolly, J. (1996) Research Design explained. (5th Edition) Thompson.

(**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)

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](#)

Supplemental Information

Programme Board	Engineering
Assessment Results (Pass/Fail)	No
Subject Panel	Engineering
Moderator	Tony Leslie
External Examiner	F Inam
Accreditation Details	
Changes/Version Number	<p>1.09 Module summary updated to reflect Curriculum Framework principles.</p> <p>v1.05 Graduate Attributes reference added.</p> <p>1.1 Post validation updates 1.2 Remove "include a series of lectures" in summary this learning and teaching is part of Research and Design Methods Module. PDP Level descriptors updated to L11 was L7 in error. Assessment grids updated to reflect three elements, dissertation, continuous assessment and presentation/defence. Added T1 and T2 to existing T3 delivery to allow flexible intake. Moderator changed to Tugrul Comlekci from Bob Bailey.</p>

Assessment: (also refer to Assessment Outcomes Grids below)

Dissertation - 60%

Presentation and defence - 20%

Continuous Assessment award from supervisor- 20%

All elements are compulsory, A minimum overall grade of 50% is required to achieve a pass in this module

(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
Dissertation/ Project report/ Thesis	✓	✓	✓	✓	60	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
Presentation	✓	✓	✓	✓	20	0

Component 3

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Performance/ Studio work/ Placement/ WBL/ WRL assessment	✓	✓	✓	✓	20	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

[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)