

University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Engineering Mechanics			
Code: ENGG07001	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:	Alrazi Earij		
Summary of Module			
<ul style="list-style-type: none"> • Introduction to equilibrium of forces and force resolution. • Introduction to relevant section properties for simple shapes, including the parallel axis theorem. • Shear force, bending moment, torque diagrams. • Analysis of pin-jointed (truss) structures. • Introduction to dynamics, particle kinematics, kinetics and rotational kinematics. • A series of experimental laboratory exercises will be run in parallel with the main lecture delivery to reinforce the learning. <p>During the course of this module, students will develop their UWS Graduate Attributes, namely: Universal: Academic (critical thinking and analytical & inquiring mind); Work-Ready: Academic (knowledgeable of the principles of engineering mechanics and relevant theories; problem solver); Personal (motivated); Successful: (autonomous), Personal (imaginative and resilient), Professional (Driven).</p> <p>This module has been reviewed and updated, taking cognisance of the UWS Curriculum Framework principles. Examples of this are found within the module such as active and engaging laboratory and tutorial activity, weekly formative tutorial groups scaffolding towards end of module summative assessment, recorded lecture content supporting students to organise their own study time and assessment of Continuing Professional Development allowing students to focus on and document their personal professional development utilising a PSRB template.</p>			

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	To summarise and apply the basic principles of statics, on which a deeper and wider understanding can be subsequently built.
L2	To apply specific analytical techniques to problems within statics.
L3	To summarise and apply the principles of dynamics.
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)	<p>SCQF Level 7</p> <p>Knowledge and understanding of the principles underpinning engineering mechanics.</p> <p>Knowledge and understanding of the analytical techniques applied to simple problems within statics and dynamics.</p>
Practice: Applied Knowledge and Understanding	<p>SCQF Level 7</p> <p>Use some routine skills and practices within the area of engineering mechanics.</p> <p>Develop knowledge, understanding and practical engineering skills acquired through work carried out in problem-based learning.</p> <p>Select and critically evaluate technical literature and other sources of information to solve complex problems.</p>

	Use practical laboratory and workshop skills to investigate complex problems	
Generic Cognitive skills	SCQF Level 7 Be able to apply appropriate quantitative tools to basic engineering mechanics problems.	
Communication, ICT and Numeracy Skills	SCQF Level 7 Develop transferable skills in numeracy.	
Autonomy, Accountability and Working with others	SCQF Level 7 Exercise autonomy and initiative in carrying out the defined activities at a professional level. Develop inclusivity awareness through exercises undertaken in group activity. Plan and record self-learning and development as the foundation for lifelong learning/CPD.	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	Module Title:
	Other:	Adequate knowledge of mathematics and fundamentals of structural mechanics.
Co-requisites	Module Code:	Module Title:

*Indicates that module descriptor is not published.

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.	
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	24
Tutorial/Synchronous Support Activity	12
Laboratory/Practical Demonstration/Workshop	12

Independent Study	152
	200 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:

Hibbeler, R.C. and Lee, Jun Hwa (2023) "Engineering mechanics. Statics" 15th Ed. in SI Units, Hockham Way, Harlow : Pearson.

Hibbeler, R. C. (2007). "Engineering Mechanics Dynamics" 11th Ed. in SI Units, Singapore: Pearson/Prentice Hall.

(*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:

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..

The programme leaders have considered how the programme meets the requirements of potential students from minority groups, including students from ethnic minorities, disabled students, students of different ages and students from under-represented groups. Students with special needs (including additional learning needs) would be assessed/accommodated and any identified barriers to particular groups of students discussed with the Enabling Support Unit and reasonable adjustments would be made for classes and site visits.

(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	Engineering
Assessment Results (Pass/Fail)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
School Assessment Board	Engineering
Moderator	Tony Murmu
External Examiner	M Ghaleeh
Accreditation Details	This module is accredited by the Joint Board of Moderators (JBM) as part of the BEng (Hons) Civil Engineering, and BEng GA (Hons) in Civil Engineering. This module is also accredited by the IMechE as part of the BEng (Hons) in Mechanical Engineering, and the BEng (Hons) in Aircraft Engineering and by the IChemE as part of the BEng (Hons) Chemical in Engineering programme.
Changes/Version Number	V2.20: Changed MC to Alrazi Earij from Asraf Uzzaman. Updated 'Module Delivery Method' to 'Face-to-Face' only. Minor update to "Accreditation Details".

Assessment: (also refer to Assessment Outcomes Grids below)
Assessment 1: Closed-Book Class Test - 50%
Assessment 2: Laboratory - 40%
Assessment 3: Continuous Professional Development Log - 10%
(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)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Closed-Book Class Test	√	√	√	50	2

Component 2					
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Laboratory/ Practical Demonstration/ Workshop	√	√	√	40	12

Component 3					
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Workbook/ Laboratory notebook/ Diary/Training log/ Learning log	√	√	√	10	0
Combined Total for All Components				100%	14 hours