Module Descriptor

Title	Engineering Mechanics		
Session	2025/26	**Status**	Published
Code	ENGG07001	**SCQF Level**	7
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	O Obeid		

Summary of Module

• 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.

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).

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.

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)	

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	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.
L4	Plan and record self-learning and development as the foundation for lifelong learning/CPD.
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 7** Knowledge and understanding of the principles underpinning engineering mechanics. Knowledge and understanding of the analytical techniques applied to simple problems within statics and dynamics..
Practice: Applied Knowledge and Understanding	**SCQF 7** Use some routine skills and practices within the area of engineering mechanics. Develop knowledge, understanding and practical engineering skills acquired through work carried out in problem-based learning.

[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

	Select and critically evaluate technical literature and other sources of information to solve complex problems. Use practical laboratory and workshop skills to investigate complex problems.
Generic Cognitive skills	**SCQF 7** Be able to apply appropriate quantitative tools to basic engineering mechanics problems.
Communication, ICT and Numeracy Skills	**SCQF 7** Develop transferable skills in numeracy.
Autonomy, Accountability and Working with Others	**SCQF 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.

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. The learning and teaching for this module comprises a series of lectures, laboratories (practical and software) and tutorials.	
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	24
Tutorial / Synchronous Support Activity	12
Laboratory / Practical Demonstration / Workshop	2
Independent Study	162
n/a	0
n/a	0
TOTAL	200

Indicative Resources
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 edn, in SI Units. Harlow : Pearson. Hibbeler, R. C. (2007) Engineering Mechanics, Dynamics. 11th edn, 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:** The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. Students will scan their attendance, via the attendance scanners, each time they are on-campus, they will have their attendance recorded in class and they will be expected to login to the VLE several times per week. Students who are unable to attend a timetabled session, due to illness or other circumstance, should notify their Programme Leader. Across the School an 80% attendance threshold is set. Students who fall below this, will be referred to the Student Success Team to see how they can be best supported in their 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. This module has lab-based teaching and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, 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	**Engineering Physical Sciences**
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	Design
Moderator	T 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 MEng/BEng (Hons) in Mechanical Engineering, and the MEng/BEng (Hons) in Aircraft Engineering.
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2.21 Module Descriptor copied to 2025/26 template, Attendance and Engagement and EDI statements updated. Changed MC to O Obeid from Alrazi Earij and delivery Term changed to T1 from T2.

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Assessment Category 1: Class Test (Unseen, Closed Book), Weight – 50%
Assessment 2
Assessment Category 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.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Unseen Closed Book (Class Test)	☒	☒	☒	☐	☐	50	2

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Laboratory/ Practical Demonstration/Workshop	☒	☒	☒	☐	☐	40	2

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Workbook/ Laboratory notebook/ Diary/Training log/ Learning log	☐	☐	☐	☒	☐	10	
Combined total for all components						100%	4 hours

Change Control

What	When	Who
Module Descriptor copied to 2025/26 template, Attendance and Engagement and EDI statements updated. Changed MC to Asraf Uzzaman from Alrazi Earij and delivery Term changed to T1 from T2.	March 2025	A. Uzzaman