Integrated Masters Programme Specification

Session	2025/26	**Last Modified**	23/03/2025
Named Award Title	MEng (Hons) Mechanical Engineering (Sandwich Available)		
Award Title for Each Award	MEng (Hons) Mechanical Engineering (Sandwich Available) BEng (Hons) Mechanical Engineering (Sandwich Available) BEng Mechanical Engineering (Sandwich Available) BSc (Hons) Mechanical Engineering (Sandwich Available) BSc Mechanical Engineering (Sandwich Available) Dip HE Engineering Cert HE Engineering Science		
Date of Approval	February 2025		
Details of Cohort Applies to	All students entering from September 2025		
Awarding Institution	University of the West of Scotland	**Teaching Institution(s)**	University of the West of Scotland
Language of Instruction & Examination		English	
Award Accredited by		Institution of Mechanical Engineers	
Maximum Period of Registration		Full-time 7 years (including optional Sandwich placement)	
Duration of Study			
Full-time	5 years 6 years- Sandwich	**Part-time**	10 years 11 years- Sandwich
Placement (compulsory)	For Sandwich Award only-Yes		
Mode of Study	☒ Full-time ☒ Part-time		
Campus	☐ Ayr ☐ Dumfries	☐ Lanarkshire ☐ London ☒ Paisley	☐ Online / Distance Learning ☐ Other (specify)
School	**Computing, Engineering and Physical Sciences**		

Divisional Programme Board	**Engineering Physical Sciences**
Programme Leader	T Leslie

Admissions Criteria
Candidates must be able to satisfy the general admission requirements of the University of the West of Scotland as specified in Chapter 2 of the University Regulatory Framework together with the following programme requirements:

SQA National Qualifications:

Standard Entry Requirements: ABBB (114 UCAS Tariff points) including Mathematics and Physics, plus SQA National (Grade B, or above) / Intermediate 2 (Grade B, or above) /Standard Grade (Credit) English

Or GCE
BBC (112 UCAS Tariff points) including Mathematics and Physics plus GCSEs in English Language or English Literature (Grade B / Grade 5 or 6)

Or SQA National Qualifications / Edexcel Foundation
An appropriate HNC/D award with the level of entry and/or credit awarded being subject to the content of the programme. All advanced entry will be considered on an individual basis.

Other Required Qualifications/Experience
Applicants may also be considered with other academic, vocational or professional qualifications deemed to be equivalent. We welcome applications from international students with equivalency of qualifications. Scholarships may be available on application.

Further desirable skills pre-application
N/A

General Overview
Graduates from the MEng (Hons) Mechanical Engineering Integrated Masters programme will have an ability to develop solutions for complex engineering problems using new or existing technologies, through innovation, creativity and change. It extends beyond the outcomes of the BEng (Hons)Mechanical Engineering to provide a greater range and depth of specialist comprehensive knowledge, within an authentic environment, as well as a broader and more general academic base. The programme provides a foundation for leadership and innovative engineering practice roles.

Graduates will possess the following defining characteristics. A broad and coherent body of knowledge including mathematics, natural science and engineering principles, and a proven ability to apply that knowledge to analyse and solve complex engineering problems. Much of the knowledge will be at the forefront of the particular subject of study. Graduates will be able to select and apply quantitative and computational analysis techniques in the absence of complete data, discussing the limitations of the methods employed. With an appreciation of professional engineering practice and ethics, graduates will be commercially aware and able to apply their knowledge and skills to design, deliver and evaluate innovative new products or services to meet defined needs using new or existing technologies.

The MEng (Hons) Mechanical Engineering programme is contextually aligned with the Engineering Council's AHEP4 Learning Outcomes as outlined below:
M1. Apply a comprehensive knowledge of mathematics, statistics, natural science and engineering principles to the solution of complex problems. Much of the knowledge will beat the forefront of the particular subject of study and informed by a critical awareness of new developments and the wider context of engineering.
M2. Formulate and analyse complex problems to reach substantiated conclusions. This will involve evaluating available data using first principles of mathematics, statistics, natural science and engineering principles, and using engineering judgment to work with information that may be uncertain or incomplete, discussing the limitations of the techniques employed.
M3. Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed.
M4. Select and critically evaluate technical literature and other sources of information to solve complex problems.
M5. Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.
M6. Apply an integrated or system s approach to the solution of complex problems.
M7. Evaluate the environmental and societal impact of solutions to complex problems (to include the entire life cycle of a product or process) and minimise adverse impacts.
M8. Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.
M9. Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.
M10. Adopt a holistic and proportionate approach to the mitigation of security risks.
M11. Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.
M12. Use practical laboratory and workshop skills to investigate complex problems.
M13. Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.
M14. Discuss the role of quality management systems and continuous improvement in the context of complex problems.
M15. Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.
M16. Function effectively as an individual, and as a member or leader of a team. Evaluate effectiveness of own and team performance.
M17. Communicate effectively on complex engineering matters with technical and non technical audiences, evaluating the effectiveness of the methods used.
M18. Plan and record self-learning and development as the foundation for lifelong learning/CPD.

The teaching and learning methods employed by staff in the delivery of the module portfolio covers a wide range of established as well as some novel approaches. Much of this is left to the professionalism of the staff delivering the material with traditional lectures and tutorials still forming the basis for much of the teaching and learning within the programme Extensive use is also made of laboratories, seminars, group work, independent learning and demonstrations. One of the main objectives in this area is to keep teaching materials as interesting and as relevant as possible to ensure student enthusiasm for the subjects being presented. Staff make full use of all technologies when delivering materials to students including use of multi-media presentations and extensive use of the internet/electronic technology or other appropriate e-learning strategies. The School has a policy of using small tutorial groups in the key subject areas and either sub-divides cohorts into small groups or

increases staff numbers in classroom or laboratory environments. All modules are taught by subject experts and for final year students staff make use of materials and topics raised through their professional activities whether research or consultancy based. Many case studies and examples of applications are taken from life industrial situations.
The School of Computing, Engineering and Physical Sciences has always taken a lead in the use of IT to either deliver material or to supplement and reinforce the traditional teaching and learning approaches. The School has its own extensive IT Networks to support all of the activities within the cognate area. These systems are dedicated for the School alone. Students currently have access to 100+ high specification workstations in state-of-the-art laboratories, some of which are air conditioned. Students and staff have personal accounts 5 for the School facilities and students are able to gain 24 hour access to the IT facilities seven days per week. Students are supplied with staff contact details (including e-mail addresses) in the Program Handbooks. There are examples within the School where staff make use of the VLE to perform additional teaching and learning activities such as on-line tests and assessments. A variety of assessment methods are used throughout the programmes. These range from class tests, laboratory reports, design assessments, individual and group presentations and formal examinations. Both group project work and individual project work are incorporated into the curriculum so that students develop the learning skills associated with group and independent working as well as giving presentations on their work. Formative feedback and constructive comments are given to the student on their work. Anonymous marking is undertaken, where possible. Honours projects and group projects are double marked. Mixtures of formative and summative methods are used in the assessment of student performance within the School. It is recognised that while most assessments are summative in nature, demands from students have indicated a desire for more assessment which delivers regular feedback. Where possible, this has been attempted but it is noted that this puts extreme demands on the available time that academics have for marking. There are a number of modules with PDP elements that are integrated within the module content.
The programme and programme specification has been reviewed and updated taking cognisance of the University's Curriculum Framework principles as discussed below.

Student Centred
Reflection on learning is inherent and credit bearing in all years of the programme. Advanced entry to the programme is available where RPL/CPD/informal learning is evidenced. Access to student support (programme team, peers and wider University student services) is promoted at induction, through personal tutoring/year/programme leader, group activity in all levels of the programme, SCQF Level appropriate employability and careers sessions and within modules evident in entry level of the programme. Engagement and progress is monitored by module coordinators, this takes the form of VLE analytics, assessment engagement, on-campus activity engagement and formative and summative assessment engagement. Monthly meetings with year leads and programme leads allows the programme teams to respond appropriately and quickly both from a student and programme learning, teaching and assessment perspective. Co-creation of curriculum is challenging due to the need to demonstrate that Engineering Council learning outcomes are met by all students. However, within a number of modules students can determine the direction of their learning with boundaries set to ensure the assessment is fit for purpose. [1] Delivery of the programme is on-campus lectures, tutorial, laboratory or group work activity. The timetables are produced to ensure on-campus learning time is efficiently maximised.
Simple and Coherent
The programme has multiple exit award points as demonstrated in the programme specification and students are supported/counselled appropriately by the programme leader after examiners' panels. Programme teams are aware of the programme learning outcomes through ongoing programme development meetings. The importance of the modular outcomes and assessment approaches on the overall programme outcomes and Engineering

Council's learning outcomes, student feedback and sustainability are core to the discussions at these meetings. Students are made aware of the programme learning outcomes at induction, module introductions and programme development workshops. A capstone module is present at L11- MEng Group Project. Assessment, wherever possible, follows real-world activities examination is required as part of the accreditation requirements however this follows an open-book approach providing time-bound, individually assessed, unfamiliar problems- assessing content and developing a number of important meta-skills. All modules have inherent tutorial activity with formative assessment providing concurrent feedback allowing implementable feed-forward. Academic accreditation is the mark of assurance that individual engineering programmes within higher education meet the required overall standards set by the engineering profession and defined by the Engineering Council (EngC). The programme prepares students for a career in engineering and the content is guided and evaluated by the Engineering Councils Standard for Professional Engineering Competence and Commitment. Meta-skills are embedded in the programme as is required by the Engineering Council and these include digital skills, creativity, critical thinking, innovation, and entrepreneurship and social enterprise. Students are assessed in a variety of ways and settings including, practical, written, oral, time-bound, group, real-world environment, creative, critical thinking and this broad approach to assessment provides a number of transferrable skills to be developed whilst assessing.

Inclusivity
The programme team have reviewed the content of the Advance HE Anti-Racist Curriculum Project [2] and are aware that in this regard 'curricular reform is a continual process rather than a final destination'. With this in mind further institutional guidance is welcomed to ensure that every effort has been made to ensure the curriculum is and continues to be anti racist and inclusive for all. Sustainability Wherever possible modules are shared with other engineering programmes to maximise efficiency with specific programme contextualised components of learning, teaching and assessment. All modules have been reviewed to ensure they meet the norms around contact hours.

[1] https://www.uws.ac.uk/media/qkenikto/assessment-handbook-2024-25
[2] https://www.advance-he.ac.uk/anti-racist-curriculum-project

Typical Delivery Method
On-campus lectures, tutorials and laboratories (practical and computer) with additonal independent activity.

Any additional costs
None

Graduate Attributes, Employability & Personal Development Planning
UWS' Graduate Attributes focus on academic, personal and professional skills and throughout the programmes that these skills develop graduates who are universally prepared, work-ready and successful. The Mechanical Engineering programme provides opportunities throughout the levels to enable these skills to be developed and focussed appropriately. Mechanical Engineering knowledge is assembled throughout the programme and wherever possible digital literacy skills and ability to provide effective solutions is enhanced utilising industry standard appropriate technologies such as MATLAB, MATHCAD, CAD, FEA and CFD software. Particularly, but not exclusively, in later years of the programme, critical analytical and inquiry skills are developed and used to solve industry related problems in modules such as Design, Prototyping and Testing and Design and Applications. Structural and Fluids design and analysis exercises are utilised where incisive and innovative solutions are required to be

effectively presented as part of collaborative groups or as individual autonomous learning activities. The programme promotes cultural awareness and emotional intelligence with a variety of group exercises developing resilient, ambitious and enterprising leadership qualities whilst ensuring that group members are emotionally and culturally aware and respectful communication and behaviours are the norm. Commercial awareness is linked to mechanical design activities during the programme ensuring that costs associated with staff, materials, manufacture, in-service and decommissioning are considered when developing transformational/innovative solutions with commercial potential. Ethical awareness and social responsibility is developed throughout and is formalised in final year project studies where School/University ethical approval is sought if required. Links to current University and programme research are promoted through the programme with opportunities for students to become involved in aspects of the research from the earliest opportunity either discretely or as part of an assessment.

UWS Graduate Attributes- https://www.uws.ac.uk/current-students/your-graduate-attributes/

PDP and Employability
The University's Mechanical Engineering graduates gain employment throughout the UK and overseas in engineering and manufacturing companies, consulting engineers, engineering contractors and also research activities. The program is also organised to allow part time entry allowing those in employment to undertake degree award on a day release manner and thereby supporting employers to increase qualification levels of their employees manageably. Across the programme of study, the Personal Development Planning (PDP) process gives the opportunity for engagement of students with a set of core activities, which include:
• reflection on prior experience, personal attributes and goals.
• audits of skills and feedback on their development.
• opportunities and guidance on the recording of achievements.
• the identification/development of learning goals.
• opportunities to reflect on this material and to gain feedback.
• opportunities (and guidance) on presentation of evidence for different audiences and planning of future.
• learning and career development (such as CVs).
• maintaining an effective PDP record.

Work Based Learning/Placement Details
The programme includes an optional year placement between second and third years or third and fourth years. If a student completes at least 36 weeks of this work placed learning the student is eligible for the 'Sandwich' award title.
The requirements for Workplace Learning are described in the Module Descriptor ENGG00001 Sandwich Placement:Engineering. Please refer to this module descriptor for further details. It is the students' responsibility to secure these placements and therefore it is not guaranteed. However, acadamic staff will provide help and support in this regard.

Attendance and Engagement
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 programme, academic engagement equates to the following:

Students are expected to attend all timetabled sessions and to engage with all formative and summative assessment elements of all the modules that are included in the programme specification as core modules as well as any optional module when applicable.

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 programme 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. The programme modules comply 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).

Programme structures and requirements, SCQF level, term, module name and code, credits and awards (Chapter 1, Regulatory Framework)

Learning Outcomes

SCQF LEVEL 7 Learning Outcomes	
Knowledge and Understanding	
A1	Demonstrate a broad knowledge and understanding of the key areas of mechanical and design engineering, and its underpinning science and mathematics, statistics and engineering principles with a critical awareness of new developments and the wider context of engineering.
A2	Demonstrate a basic knowledge and understanding of introductory principles and contexts with respect to multi-disciplinary aspects of engineering.
A3	Knowledge and understanding of the relevant materials, equipment and processes and technologies underpinning product design.
A4	Demonstrate an understanding of the commercial context and sustainability of engineering activities.
A5	Apply knowledge of engineering management principles, commercial context, project and change management and relevant legal matters including intellectual property rights.
Practice - Applied Knowledge and Understanding	
B1	Demonstrate the formulation and analysis of complex problems with substantiated conclusions related to complex engineering problems. This will include dealing with uncertain and incomplete data and being able to discuss the limitations of techniques employed. Evaluate the environmental and societal impact of solutions to complex problems (to include the entire life-cycle of a product or process) and minimise adverse impacts
B2	Apply acquired knowledge and understanding and practical engineering skills in appropriate laboratories, workshops and individual and group projects to investigate complex problems.
B3	Select and critically evaluate technical literature and other sources of information to solve complex problems. Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed.
B4	Apply a comprehensive knowledge of mathematics, statistics, natural science and engineering principles to the solution of complex problems. Much of the knowledge will be at the forefront of the particular subject of study and informed by a critical awareness of new developments and the wider context of engineering
B5	Evaluate the environmental and societal impact of solutions to complex problems and minimise adverse impacts. Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards
Communication, ICT and Numeracy Skills	

C1	Develop an appropriate range of transferable skills in communication, the use of IT facilities and information retrieval.
C2	Use computer software relevant to mechanical and design engineering
C3	Adopt a holistic and proportionate approach to the mitigation of security risks.
C4	Communicate effectively on complex engineering matters with technical and non-technical audiences.
C5	Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Apply appropriate quantitative science and engineering tools to basic problems.
D2	Develop an appropriate range of transferable skills and apply these in problem solving.
D3	Apply an integrated or systems approach to the solution of complex problems.
D4	N/A
D5	N/A
Autonomy, Accountability and Working with Others	
E1	Develop an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.
E2	Function effectively as an individual, and as a member or leader of a team. Evaluate effectiveness of own and team performance.
E3	Develop skills in planning self-learning and improving performance, as the foundation for PDP, lifelong learning and CPD.
E4	Demonstrate an understanding of the need for a high level of professional and ethical conduct in engineering.
E5	Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.

Level 7 Modules

CORE

SCQF Level	**Module Code**	**Module Title**	**Credit**	**Term**			**Footnotes**
				1	**2**	**3**	
7	APPD07001	ASPIRE	20	☒	☐	☐	
7	ENGG07001	Engineering Mechanics	20	☒	☐	☐	
7	MATH07011	Applied Mathematics	20	☒	☐	☐	
7	ENGG07007	Stress Strain Structural Design	20	☐	☒	☐	
7	ENGG07023	Introduction to Engineering	20	☐	☒	☐	
7	MATH07008	Python Fundamentals	20	☐	☒	☐	

Footnotes for Core Modules

NA

Level 7 Modules

OPTION

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
Footnotes for Option Modules							

Level 7
Criteria for Progression and Award
Please refer to UWS Regulatory Framework for related regulations

Progression

1. To progress from SCQF Level 7 to SCQF Level 8 on this programme, students are required to obtain 120 credits at SCQF Level 7 from the programme of modules identified above.
2. Regulation 3.13 refers to progression with credit deficit.
3. Students who fail one core module and have 'No further attempts' may be able to transfer and continue on the BSc (Hons) Mechanical Engineering programme.

Award

1. Students wishing to exit after SCQF Level 7 and who have achieved 120 credits at SCQF Level 7 or above, will be awarded a Certificate of Higher Education in Engineering Science.
2. Distinction will be awarded in line with University Regulations 3.25 and 3.26, no imported credit can be used.

SCQF LEVEL 8 Learning Outcomes	
Knowledge and Understanding	
A1	Demonstrate the role of quality management systems and continuous improvement in the context of complex problems.
A2	Demonstrate an extended knowledge of the different types and characteristics of engineering materials and manufacturing processes.
A3	Demonstrate an understanding of the environmental and societal impact of solutions to complex problems (to include the entire life cycle of a product or process) and minimise adverse impacts
A4	Demonstrate a knowledge and understanding of basic management theory and quality management systems and continuous improvement in the context of complex problems.
A5	Demonstrate a comprehensive knowledge and understanding of the key areas of mechanical engineering its underpinning natural science, mathematics, statistics and engineering principles with a critical awareness of new developments and the wider context of engineering.
Practice - Applied Knowledge and Understanding	
B1	Select appropriate materials and manufacturing methods for a range of consumer products. Discuss the role of quality management systems and continuous improvement in the context of complex problems.
B2	Evaluate the environmental and societal impact of engineering solutions (to include the entire lifecycle of product/process) and to minimise adverse impacts
B3	Apply an integrated or systems approach to the solution of complex problems. Use practical laboratory and workshop skills to investigate complex problems. Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.
B4	Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer needs. This will involve the consideration of H&S, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.
B5	Demonstrate the formulation and analysis of complex problems with substantiated conclusions related to mechanical engineering problems. This will include dealing with uncertain and incomplete data and being able to discuss the limitations of techniques employed.
Communication, ICT and Numeracy Skills	
C1	Select and critically evaluate technical literature and other sources of information to solve complex problems.
C2	Adopt a holistic and proportionate approach to the mitigation of security risks.
C3	Demonstrate the ability to communicate engineering ideas and concepts through the use of presentation and application software
C4	Communicate effectively on complex engineering matters with technical and non technical audiences, evaluating the effectiveness of the methods used.

C5	Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Use appropriate quantitative science and engineering tools to the analysis of basic engineering problems.
D2	Demonstrate the ability to monitor, interpret and apply the results of analysis and modelling.
D3	Demonstrate the ability to apply basic quantitative methods relevant to mechanical engineering design problems.
D4	Demonstrate the ability to define a problem and identify constraints
D5	Demonstrate the ability to use appropriate codes of practice and industry standards
Autonomy, Accountability and Working with Others	
E1	Develop an awareness of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk) issues.
E2	Develop an enhanced level of transferable skills that will be of value in working with others in more complex situations.
E3	Recognise the role and contribution of team members when carrying out and evaluating tasks.
E4	Understand the need for the consideration of Sustainability at the initial stage of product design.
E5	Plan and record self-learning and development as the foundation of lifelong learning/ CPD.

Level 8 Modules

CORE

SCQF Level	**Module Code**	**Module Title**	**Credit**	**Term**			**Footnotes**
				1	**2**	**3**	
8	ENGG08030	Introductory Management for Engineers	20	☒	☐	☐	
8	ENGG09056	Computer Aided Design 1	20	☐	☒	☐	
8	MATH08001	Mathematics For Design	20	☒	☐	☐	
8	ENGG08001	Materials and Contemporary Manufacturing	20	☒	☐	☐	
8	ENGG08017	Design Analysis 1	20	☐	☒	☐	
8	ENGG08021	Introduction to Thermo-Fluids	20	☐	☒	☐	

Footnotes for Core Modules

N/A

Level 8 Modules

OPTION

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
9	ENGG00001	Sandwich Placement: Engineering	40	☒	☒	☒	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	

Footnotes for Option Modules

All students undertaking the optional Industrial Placement year need to enrol on the module ENGG00001 (Sandwich Placement: Engineering).

Level 8
Criteria for Progression and Award
Please refer to UWS Regulatory Framework for related regulations

Progression

1. To progress from SCQF Level 8 to SCQF Level 9 on this programme,

students are required to obtain 120 credits at SCQF Level 8 from the programme of modules identified above and have achieved >=60% average in either SCQF Level 7 or 8. Students who have not achieved this progression criteria will be transferred to the BEng (Hons) Mechanical Engineering programme.

2. Regulation 3.13 refers to progression with credit deficit.

3. Students who fail one core module and have 'No further attempts' may be able to transfer and continue on the BSc (Hons) Mechanical Engineering programme.

Award

1. Students wishing to exit after SCQF Level 8 and who have achieved 240 credits, of which a minimum of 100 credits are at SCQF Level 8 or above, will be awarded a Diploma of Higher Education in Engineering.

2. Distinction will be awarded in line with University Regulations 3.25 and 3.26, no imported credit can be used.

SCQF LEVEL 9 Learning Outcomes (Maximum of 5 per heading)	
Knowledge and Understanding	
A1	Demonstrate an integrated knowledge and understanding of project organisation, management and execution.
A2	Demonstrate a comprehensive knowledge and understanding of the key areas of mechanical engineering its underpinning natural science, mathematics, statistics and engineering principles with a critical awareness of new developments and the wider context of engineering.
A3	Knowledge and understanding of the principles of IT and specialist software relevant to engineering and design, particularly CAE and the ability to use such software to the analysis and design of components and systems.
A4	Knowledge and understanding of mathematical principles and techniques necessary to underpin their education in mechanical engineering and to enable them to apply mathematical methods, tools and notation in the analysis and solution of mechanical engineering problems.
A5	Knowledge and understanding of the characteristics of engineering materials and components and the ability to apply them to the analysis of key engineering components.
Practice - Applied Knowledge and Understanding	
B1	Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed. Select and critically evaluate technical literature and other sources of information to solve complex problems. Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.
B2	Demonstrate the formulation and analysis of complex problems with substantiated conclusions related to complex engineering problems. This will include dealing with uncertain and incomplete data and being able to discuss the limitations of techniques employed.
B3	Apply an integrated or systems approach to the solution of complex problems. Evaluate the environmental and societal impact of solutions to complex problems (to include the entire life cycle of a product or process) and minimise adverse impacts.
B4	Ability to monitor, interpret and apply the results of analysis to develop, maintain processes or products in order to bring about continuous improvement. Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity. Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.
B5	Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer need as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards. Apply engineering, project, risk and quality management techniques and tools to an engineering problem.
Communication, ICT and Numeracy Skills	
C1	Adopt a holistic and proportionate approach to the mitigation of security risks.
C2	Use practical laboratory and workshop skills to investigate complex problem.

C3	Use project management software as a planning tool to improve the probability of completing project on time and within budget.
C4	Ability to apply a systems approach to engineering complex problems through know-how of the application of relevant technologies.
C5	Apply engineering, project, risk and quality management techniques and tools to an engineering problem.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Undertake a critical analyses of mechanical engineering designs and propose alterations to improve performance.
D2	Undertake a comparison between traditional and reverse engineering approaches to component or product design.
D3	Develop the effective use of information technology.
D4	Analyse design data as the basis of optimising product or component geometry.
D5	Demonstrate problem solving skills appropriate to a mechanical/design engineer.
Autonomy, Accountability and Working with Others	
E1	Function effectively as an individual, and as a member or leader of a team. Evaluate effectiveness of own and team performance. Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.
E2	Prepare, under supervision a risk assessment in line with current industry practice.
E3	Knowledge and understanding of project planning and time and resource management techniques.
E4	Plan and record self-learning and development as the foundation of lifelong learning/CPD.
E5	Recognise the need for professional and ethical conduct in engineering and awareness of environmental issues.

Level 9 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
9	ENGG09004	Project Management	20	☒	☐	☐	
9	ENGG09020	Design Analysis 2	20	☒	☐	☐	
9	ENGG09021	Design & Applications	20	☒	☐	☐	
9	ENGG09001	Design Prototypiing & Testing	20	☐	☒	☐	
9	ENGG09011	Analysis & Simulation 1	20	☐	☒	☐	
9	ENGG09057	Computer Aided Design 2	20	☐	☒	☐	

Footnotes for Core Modules

N/A

Level 9 Modules

OPTION

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
9	ENGG00001	Sandwich Placement: Engineering	40	☒	☒	☒	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	

Footnotes for Option Modules

All students undertaking the optional Industrial Placement (Sandwich) year need to enrol on the module ENGG00001 (Sandwich Placement: Engineering).

Level 9
Criteria for Progression and Award
Please refer to UWS Regulatory Framework for related regulations

Progression

1. To progress from SCQF Level 9 to SCQF Level 10 on this programme, students are required to obtain 120 credits at SCQF Level 9 from the programme of modules identified above and have achieved >=60% averages in SCQF Level 9 and either SCQF Level 7 or 8. Students who have not achieved this progression criteria will be transferred to the BEng (Hons) Mechanical Engineering programme.

2. Regulation 3.13 refers to progression with credit deficit.

3. Students who fail one core module and have 'No further attempts' may be able to transfer and continue on the BSc (Hons) Mechanical Engineering programme.

Award

1. Students wishing to exit after SCQF Level 9 and who have achieved 360 credits from the programme above will be awarded a BEng Mechanical Engineering.

2. Students who have not completed the programme of modules defined above, but who have achieved 360 credits including 100 credits at SCQF Level 9 from the above programme, will be awarded a BSc Mechanical Engineering.

3. Students who have satisfied the requirements for a Sandwich award will graduate with the addition of 'Sandwich' to their named award.

4. Distinction will be awarded in line with University Regulations 3.25 and 3.26, no imported credit can be used.

SCQF LEVEL 10 Learning Outcomes (Maximum of 5 per heading)	
Knowledge and Understanding	
A1	Demonstrate a detailed and innovative knowledge and understanding in the integration of a range of mechanical engineering techniques through project activity.
A2	Demonstrate a detailed knowledge and understanding of design principles and apply them to the development of an engineering design.
A3	Demonstrate a detailed knowledge and understanding of advanced engineering principles including creep, plasticity, fracture mechanic, vibrations and the key elements of sustainability and renewable energy systems.
A4	Demonstrate a detailed knowledge and understanding of the design, manufacture and testing of composite materials.
A5	Demonstrate a clear understanding of the scope, application and limitations of computational fluid dynamics and FEA.
Practice - Applied Knowledge and Understanding	
B1	Demonstrate the formulation and analysis of complex problems with substantiated conclusions related to mechanical engineering problems. This will include dealing with uncertain and incomplete data and being able to discuss the limitations of techniques employed.
B2	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.
B3	Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer need as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.
B4	Apply an integrated or systems approach to the solution of complex engineering problems. Evaluate the environmental and societal impact of solutions to complex problems (to include the entire life cycle of a product or process) and minimise adverse impacts.
B5	Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations. Discuss the role of quality management systems and continuous improvement in the context of complex problems. Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.
Communication, ICT and Numeracy Skills	
C1	Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed.
C2	Analyse and evaluate engineering data as a means of optimising a component or system.
C3	Adopt a holistic and proportionate approach to the mitigation of security risks.

C4	Ability to apply a systems approach to engineering problems through know how of the application of relevant technologies.
C5	Apply project management techniques and tools to an engineering problem; Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Demonstrate creative skills in preparing engineering design solutions.
D2	Demonstrate the ability to investigate and solve engineering problems through the use of computer simulation.
D3	Carry out individual and group projects in a professional, responsible and ethical manner.
D4	Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.
D5	N/A
Autonomy, Accountability and Working with Others	
E1	Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.
E2	Working with peers demonstrate a high level of ability to function effectively as a team member, demonstrating leadership when required.
E3	Plan and record self-learning and development as the foundation of lifelong learning/CPD.
E4	Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.
E5	Analyse the risk involved in the design and operation of a product or process.

Level 10 Modules

CORE

SCQF Level	**Module Code**	**Module Title**	**Credit**	**Term**			**Footnotes**
				1	**2**	**3**	
10	ENGG10001	Final Year Project	20	☒	☒	☐	
10	ENGG10019	Analysis & Simulation 2	40	☒	☐	☐	
10	ENGG10095	Mechanical Design Group Project	20	☒	☐	☐	
10	ENGG10021	Composite Structures	20	☐	☒	☐	
10	ENGG10084	Energy Systems Analysis and Design	20	☐	☒	☐	
				☐	☐	☐	
Footnotes for Core Modules N/A							

Level 10 Modules

OPTION

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	

Footnotes for Option Modules

Level 10
Criteria for Progression and Award
Please refer to UWS Regulatory Framework for related regulations

Progression

1. To progress from SCQF 10 to SCQF 11 in this programme, students are required to obtain 480 credits from the above programme and have achieved an average of >=60% at SCQF Level 10 and have achieved >=60% average in two of the first three SCQF levels of study, one of which must have been SQCF Level 9. Students who have not achieved this progression criteria will be considered for award as oulined below.

Award

1. Students obtaining 480 credits from the above programme who do not satisfy the requirements for progression are eligible for the award of BEng (Hons) Mechanical Engineering.

2. Students obtaining 480 credits, of which a minimum of 100 credits are at SCQF 10 from the above programme, are eligible for the award of BSc (Hons) Mechanical Engineering.

3. Students who have satisfied the requirements for a Sandwich award will graduate with the addition of 'Sandwich' to their named award.

4. The Classification of Honours will be determined by University Regulation 3.20-3.24.

SCQF LEVEL 11 – Integrated Masters Learning Outcomes (Maximum of 5 per heading)	
Knowledge and Understanding	
A1	Demonstrate a comprehensive knowledge and understanding of the key areas of mechanical engineering its underpinning natural science, mathematics, statistics and

	engineering principles with a critical awareness of new developments and the wider context of engineering.
A2	A critical understanding and embedment of the main theories, concepts and principles within Mechanical Engineering towards the practice of the profession.
A3	Comprehension, appreciation and critical understanding of a range of specialised theories applied to the dynamic nature of Mechanical Engineering knowledge towards understanding each individual project undertaken.
A4	Demonstrate a detailed knowledge and understanding of mechanical design and analysis.
A5	Extensive, detailed and critical knowledge and understanding of mechanical analysis with advanced materials and complex loading.
Practice - Applied Knowledge and Understanding	
B1	Demonstrate the formulation and analysis of complex problems with substantiated conclusions related to mechanical engineering problems. This will include dealing with uncertain and incomplete data and being able to discuss the limitations of techniques employed.
B2	Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer need as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards.
B3	Apply an integrated or systems approach to the solution of complex problems. Evaluate the environmental and societal impact of solutions to complex problems (to include the entire life cycle of a product or process) and minimise adverse impacts.
B4	Planning and executing a significant group project of Mechanical Engineering investigation or development. Use practical laboratory and workshop skills to investigate complex problems. Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.
B5	Discuss the role of quality management systems and continuous improvement in the context of complex problems. Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity. Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.
Communication, ICT and Numeracy Skills	
C1	Communicate, using appropriate methods, to a range of audiences with different levels of knowledge/expertise.
C2	Communicate, using appropriate Mechanical Engineering methods, to a range of audiences with different levels of knowledge/expertise.
C3	Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed.
C4	Adopt a holistic and proportionate approach to the mitigation of security risks.
C5	Select and critically evaluate technical literature and other sources of information to solve complex problems.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	

D1	Identify, conceptualise and define specific problems and issues in Mechanical Engineering Design and Development.
D2	Develop original and creative responses to problems and issues within an Mechanical Engineering context.
D3	The application of critical analysis, evaluation and synthesis to current issues, or issues that are informed by current developments in Mechanical Engineering.
D4	Handle complex issues and make informed judgements in situations in the absence of complete or consistent data/information.
D5	N/A
Autonomy, Accountability and Working with Others	
E1	Take responsibility for own work and also take significant responsibility for the work of others within a team environment Evaluate effectiveness of own and team performance.
E2	Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.
E3	Manage complex ethical and professional issues and make informed judgements on issues not addressed by current professional and/or ethical codes or practices.
E4	Plan and record self learning and development as the foundation of lifelong learning/CPD.
E5	N/A

Level 11 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
11	ENGG11032	Advanced Heat Transfer	20	☒	☐	☐	
11	ENGG11033	Advanced Fluid Mechanics and CFD	20	☒	☐	☐	
11	ENGG11050	Group Project for MEng	40	☒	☒	☐	
11	ENGG11022	Applied Finite Element Analysis	20	☐	☒	☐	
11	ENGG11041	Structural Integrity	20	☐	☒	☐	
				☐	☐	☐	
Footnotes for Core Modules N/A							

Level 11 Modules

OPTION

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	

				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	

Footnotes for Option Modules

N/A

Level 11
Criteria for Award
Please refer to UWS Regulatory Framework for related regulations

Award

1. To be eligible for the award of MEng (Hons) Mechanical Engineering a candidate must hold 600 credits from the above programme.

2. The Classification will take into account students' performance at Levels 9, Level 10 and Level 11.

The composite classification mark is given by:

20% from Level 9

30% from Level 10

50% from Level 11

The classification will be determined as follows:

First Class >=70% Average

Upper Second Class (2.1) >=60% Average

Lower Second Class (2.2) >=50% Average

3. Students who have satisfied the requirements for a Sandwich award will graduate with the addition of 'Sandwich' to their named award.

4. Students who are ineligible for the award of MEng(Hons) Mechanical Engineering, will be awarded a BEng(Hons) Mechanical Engineering as per Level 10 Award notes.

Regulations of Assessment

Candidates will be bound by the general assessment regulations of the University as specified in the University Regulatory Framework.

An overview of the assessment details is provided in the Student Handbook and the assessment criteria for each module is provided in the module descriptor which forms part of the module pack issued to students. For further details on assessment please refer to Chapter 3 of the Regulatory Framework.

To qualify for an award of the University, students must complete all the programme requirements and must meet the credit minima detailed in Chapter 1 of the Regulatory Framework.

Combined Studies
There may be instances where a student has been unsuccessful in meeting the award criteria for the named award and for other more generic named awards existing within the School. Provided that they have met the credit requirements in line with the SCQF credit minima (please see Regulation 1.21), they will be eligible for a Combined Studies award (please see Regulation 1.61). For students studying BA, BAcc, or BD awards the award will be BA Combined Studies. For students studying BEng or BSc awards, the award will be BSc Combined Studies.

Version no: 1

Change/Version Control

What	When	Who
Following 2025 ILR Work-based learning, Progression and Award Statements updated.	March 2025	T. Leslie
V1.06 Details of Cohorts Applied to updated to All cohorts from Sept 2025. Level 7 modules updated to reflect the introduction of ASPIRE at ILR. Level 10 Design Analysis 3 replaced by Mechanical Engineering Design Project.	Dec 2024	PL
v1.05- All links updated and added as required. Section 14 - Programme Leader updated to Dr Tony Leslie from Dr Esther Smith Details of Cohorts Applies to: Changes applies to Sept 24 onwards Level 7 Modules: (New Module Code) Applied Mathematics 1 (T1) replaces MATH07010-Mathematics for Engineering (T1 & T2). ENGG07002 Applied Engineering Science delivery changed to T2 was T1 & T2. MATH07008 Computational Methods replaces ENGG07016 Programming for Engineers Content essentially the same. Level 8 Modules: ENGG08001 module title changed to Materials and	5/6/24	PL

Contemporary Manufacturing was Materials & Manufacture. Level 9 Modules: All optional modules removed.		
v1.04- Details of Cohorts Applies to: Changes applies to Sept 23 onwards General Overview updated to reflect full return to campus delivery. Admissions criteria updated to reflect current requirements. Engagement text updated to reflect current institutional position. EDI text updated to reflect current institutional position. Level 7 Mathematics for Engineering 1 (T1 & T2) added in lieu of Engineering Mathematics 1 (T1) & 2 (T2). Level 8 Computer Aided Design 1 (T1) added in lieu of Computer Aided Design (T1) Level 9 Computer Aided Design 2 (T2) added as optional for Full-Time students, footnotes added to provide explanation	May 2023	PL
v1.03 Details of Cohorts applies to: changes applies to Sept 22 onwards General Overview: Text updated to reflect new AHEP4 specific learning outcome terminology, note the learning content has not changed merely the wording and terminology. Text demonstrating how the programme aligns with UWS' Curriculum Framework added Programme Structure/ Learning Outcomes Level 7- Outcomes reworded to better reflect AHEP4 terminology	May 2022	PL

Level 8- Outcomes reworded to better reflect AHEP4 terminology ENGG08030 moved to core Level 9- Outcomes reworded to better reflect AHEP4 terminology Level 10-Outcomes reworded to better reflect AHEP4 terminology Correction of term delivery. Two 10 credit modules (ENGG10045 & ENNGG11038) replaced by new 20 credit ESAD module to align with CF Level 11-Outcomes reworded to better reflect AHEP4 terminology		
v1.02 Details of Cohorts Applies to updated to Sept 21. Programme Leader changed to Esther Smith Level 7 Modules Engineering Mathematics 1 MATH07006 added to core (was optional) however there was no other optional modules therefore inherently core. Applied Engineering Science (ENGG07002) added as core to replace Applied Engineering Science 1 & 2(ENGG07015/ENGG07013) - Curriculum Framework Development 2021. Technical Communications in Engineering (ENGG07012) and Introduction to Intelligent Systems (ENGG07014)replaced by Technical Communications (ENGG07004) - Curriculum Framework Development 2021. Modules re-ordered Level 9 Modules Engineering Project Management (ENGG09046) and Manufacturing Systems Management (ENGG09047)	May 2021	PL

deleted from core these modules were replaced in 2020/21, retained in 2020/21 Programme Specification for resit students only but are now deleted. Independent Study (ENGG09018) added as optional for part-time students only. Footnotes updated to reflect the changes. Modules reordered. Level 10 modules Modules reordered		
v1.01 Programme Leader Changed to Tony Leslie from Tugrul Comlekci "We welcome applications from international students with equivalency of qualifications. Scholarships may be available on application" added to Other Required Qualifications/Experience section. Level 9 ENGG09004 Project Management added to core. ENGG09046 Engineering Project Management moved to optional from core with Footnote 1 to explain. ENGG09047 Manufacturing Systems Management moved to optional from core with Footnote 1 to explain. ENGG09019 Applied Intelligent Systems added to optional for Part-Time students, this will however effectively remain core for Full-Time students with Footnote 2 to explain. Footnotes 1 and 2 added. Level 10 ENGG10019 Analysis and Simulation 2 changed to T1 only was T1 and T2.	May 2020	PL

v1.0 Original version as validated		