Undergraduate Programme Specification

Session	2025/26	**Last Modified**	16/03/2025
Named Award Title	BEng (Hons) GA Engineering Design and Manufacture		
Award Title for Each Award	BEng (Hons) GA Engineering Design and Manufacture BEng GA Engineering Design and Manufacture BSc (Hons) Engineering, Design and Manufacture BSc Engineering, Design and Manufacture Dip HE Engineering Cert HE Engineering Science		
Date of Approval	February 2025		
Details of Cohort Applies to	All students from 2025-2026		
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		N/A	
Maximum Period of Registration		5 Years	
Duration of Study			
Full-time	4	**Part-time**	N/A
Placement (compulsory)	No		
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	M Ayat		

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: BCCC (90 UCAS Tariff points) including Higher Mathematics, plus SQA National 5 Physics (Grade B, or above)

Minimum Entry Requirements: CCCC (84 UCAS Tariff points) including Mathematics, plus National 5 Physics at B

Or GCE
CCD (88 UCAS Tariff Points) including Maths and Physics

Or SQA National Qualifications / Edexcel Foundation
An appropriate Foundation Apprenticeship, Modern Apprenticeship or HNC/D award with the level of entry and/or credit awarded being subject to the content of the programme.
For Advanced Entry apprentices are required to have completed a relevant MA or have a minimum of 1 year of sector specific work experience at a level equivalent to the point of entry.

Other Required Qualifications/Experience
Considering the relevance of the programmes to the industry, applicants can apply for admission based on Accreditation of Prior Learning / Accreditation of Prior Experiential Learning in accordance with the University's RPL guidelines.

Further desirable skills pre-application
It is a requirement that the applicant is employed by a company able and committed to supporting the Work Based aspects of the programme and has the right to live and work in Scotland.

General Overview
The Graduate Apprenticeships in Engineering Design and Manufacture is a work-based learning programme and has been developed in partnership between Industry, the education sector and Skills Development Scotland in support of the Skills Investment Plan, to ensure that graduate learning is wholly aligned to industry need. This Graduate Apprenticeship (GA) provides a new way into degree-level study for individuals who are currently employed, or who want to go straight into work from school. Employees can equip themselves with higher levels of academic learning and industry accreditation, which helps them progress as professionals. By investing in their staff through apprenticeships, employers can develop their workforce and support staff to develop their skills to industry and professional standards. Apprentices can directly apply their academic learning to real-life situations. Individuals who participate in the apprenticeship are able to access the same learning opportunities as those who follow the traditional route of direct entry into university.
This programme is based on a framework produced by Skills Development Scotland (SDS). Engineering Design & Manufacture is a highly skilled sector which has been identified by SDS as a priority for development of a Graduate Apprenticeship. This GA offers employers and employees the opportunity to up-skill and gain an Honours degree whilst employed. The Graduate Apprenticeship in Engineering Design and Manufacture provides apprentices with the knowledge, understanding and skills required to be a successful professional in a wide

variety of engineering careers including engineering design, manufacturing and consultancy, operations and project management.

This programme has been designed to fully embrace the Principles of Work Based Learning as identified by SDS in the tender invitation. Work-based learning and work-based assessment will be used to make use of workplace tasks that the apprentice undertakes. The programme will be delivered over four years with apprentices undertaking 120 credits per year.

Employees can equip themselves with higher levels of academic learning and industry accreditation, which helps them progress as professionals.

Apprentices who graduate with an honour's degree will be eligible to proceed to advanced Masters programmes in engineering or to undertake research via MPhil/PhD

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]
Programme Delivery
Delivery of the programme is by on-campus lectures, tutorials, laboratory and 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 L10- Final Year 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 AdvanceHE 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 safeguard that the curriculum is and will continue 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/6564/assessment-handbook-2023-24.pdf
[2]- https://www.advance-he.ac.uk/anti-racist-curriculum-project

Prior to students being offered a place on the programme, employers are required to submit a 'Statement of Employer Support'. In doing so, they agree to allow the students day release, additional laboratory days and class test attendance over the academic year/s and to support the students with a dedicated workplace mentor. The mentor will liaise with University colleagues as the students progress through their WBL modules and act as a point of contact regarding attendance and progress.

Typical Delivery Method

The teaching and learning methods employed by staff in the delivery of the module portfolio covers a wide range of established and 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 within engineering. 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 material to students including high-quality notes, use of multimedia presentations and use of the internet/electronic technology. Engineering Division has a policy of using small tutorial groups in key subject areas and either sub-divides cohorts into small groups or increase staff numbers in classes or laboratories. 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 live industrial situations.

Delivery of the programme is by on-campus lectures, tutorials, laboratory and group work activity. The timetables are produced to ensure on-campus learning time is efficiently maximised.

A variety of assessment methods are used throughout the programme. These range from class tests, laboratory reports, design assignments, individual and group presentations and formal examinations. Both group project work and individual project work are incorporated into the curriculum to allow students to develop the learning skills associated with a group and independent working as well as giving presentations on their work. Mixtures of formative

and summative methods are used in the assessment of student performance within Engineering. A VLE (Virtual Learning Environment) system is used for the dissemination of materials, assessments and information regarding modules in the course.

While most of the assessments are summative in nature, informal formative feedback is frequently provided to the students prior to the submission of summative assessments. Formative feedback and constructive comments are given on coursework submissions, and where possible this provides students with regular feedback. Anonymous marking is undertaken where possible. WBL4 projects and group projects are double marked.

Any additional costs

None

Graduate Attributes, Employability & Personal Development Planning

Graduate Attributes

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 Engineering and Manufacturing Graduate Apprentice programme provides opportunities throughout the levels to enable these skills to be developed and focussed appropriately.

The apprentices on this programme will all be in relevant employment therefore the programme will build on their existing employability skills.

The Graduate Apprentices (GAs) will be productive members of their companies from an early stage. Their learning will be embedded with their workplace activities and their learning and skills are applied in a professional environment right from day one.

As the GA progresses through the course, they will gain a higher level of understanding of academic learning in a workplace environment. Their learning will be applied to their workplace environment rather than theoretical or artificial.

The GA will develop their critical thinking skills, creativity and leadership skills within the workplace environment. It is expected that they will become change agents.

The GAs will be able to reflect on their work and develop their skills through their workplace experiences. GAs will have the confidence and qualifications needed to succeed when they graduate and beyond. GAs will be uniquely placed to integrate their academic skills, knowledge and practice with workplace practice. GAs will be fully billable professionals, integrated into the professional environment on graduation. GAs will have an understanding of the broader profession.

The programme offers a thorough grounding in the principles of engineering design and the underpinning analysis as well as manufacturing engineering and materials science and develops the lifelong learning skills that apprentices will need to stay abreast of the rapidly evolving technologies in engineering.

Every apprentice will have an academic/link tutor and workplace mentor to support them. The apprentice will have regular meetings with their academic/link tutor and mentor to discuss their progress including issues relating to PDP as well as their development goals and aspirations.

There are work-based learning modules at each level of the programme which encourage the apprentice to reflect on their personal development and they are expected to use an e-portfolio to record their PDP.

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 Python, MATHCAD, CAD, FEA and Digital manufacturing software.

The integration of data visualisation and analysis tools, alongside programming skills, plays a pivotal role in equipping apprentices with the ability to interpret complex engineering problems and develop data-driven solutions. Further, the addition of a Quality 4.0 related module, which emphasises the use of advanced analytics tools to ensure continuous improvement in engineering practice.
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.
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
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.
The School has set up a group to co-ordinate and improve the effectiveness of the delivery of PDP and students are encouraged to maintain an effective PDP record using e-portfolios.
The programme and programme specification has been reviewed and updated taking cognisance of the University's Curriculum Framework principles as discussed below.

Work Based Learning/Placement Details
Work Based Learning (WBL) is central to the delivery of the GA programme to ensure the alignment to the employer's needs as well as the personal development needs of the apprentice. There is a 40-credit WBL module at each level. The WBL modules ensure that the content being delivered is contextualised in the workplace in order to maximise the impact of learning for the benefit of both the company and the student. Moreover, students will be encouraged to think about their learning in the context of the workplace throughout the programme. 'Learning in a context' is the ethos of the GA programme. Each employer will have different capabilities in supporting the broad range of WBL opportunities, but it is anticipated

that apprentices in an organisation may undertake most of their WBL learning and assessment in the workplace.

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. This programme 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. More information on the University's EDI policies can be accessed at: https://www.uws.ac.uk/about-uws/uws-commitments/equality-diversity-inclusion/ (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	Describe and explain key areas of manufacturing and design engineering, and its underpinning science and mathematics.
A2	Define and discuss introductory principles and contexts with respect to multi-disciplinary and work-based aspects of engineering.
A3	Knowledge and understanding of mathematics necessary to support the application of key engineering principles
A4	Develop and apply computer algorithms and programming skills to solve STEM problems, and implement security measures to protect data, networks, and software
A5	Understand the interdisciplinary nature of engineering fields and their impact on society.
Practice - Applied Knowledge and Understanding	
B1	Apply appropriate quantitative science and engineering and mathematical tools to solve given problems.
B2	Apply acquired knowledge and understanding and practical engineering skills in class and laboratory as well as workplace contexts.
B3	Select and apply appropriate computational and analytical techniques to model complex problems, recognising the limitations of the techniques employed
B4	Apply graphical and textual tools in communicating technical information in class and workplace contexts
B5	N/A
Communication, ICT and Numeracy Skills	
C1	Communicate complex ideas both verbally and in writing.
C2	Present and evaluate coherent arguments, information and ideas in a clear and appropriate manner.
C3	Employ a range of approaches to addressing defined and/or routine problems and issues in engineering design and manufacturing in the workplace.
C4	Reflect on the experience of applying their knowledge and understanding of the engineering sector in a workplace environment.
C5	Select and use appropriate basic and routine tools and techniques to process a variety of information and data.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Apply appropriate quantitative science and engineering tools to basic problems.
D2	Coherently present and evaluate arguments, information and ideas.
D3	Evaluate results of computational processes against theoretical benchmarks

D4	N/A
D5	N/A
Autonomy, Accountability and Working with Others	
E1	Define and explain key issues in relation to their work, and be able to give an account of, the accountability and responsibilities of computer professionals and their accountability to their clients, the community, and society at large.
E2	Manage limited resources within defined areas of the engineering workplace.
E3	Take account of own and others' roles and responsibilities in carrying out and evaluating engineering tasks in the workplace.
E4	N/A
E5	N/A

Level 7 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
7	ENGG07023	Introduction to Engineering	20	☐	☒	☐	
7	MATH07011	Applied Mathematics	20	☒	☐	☐	
7	ENGG07017	WBL1: Introduction to Engineering	40	☒	☒	☐	
7	MATH07008	Python Fundamentals	20	☐	☒	☐	
7	ENGG07001	Engineering Mechanics	20	☒	☐	☐	
				☐	☐	☐	
Footnotes for Core Modules							

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.

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	Define and explain the concepts and principles of mechanical engineering in the design and analysis of engineering applications.
A2	Identify and describe the different types and characteristics of engineering materials
A3	Identify and describe the different types and characteristics of manufacturing processes
A4	Demonstrate a comprehensive understanding of principles and practices in computer-aided design (CAD) and its application to engineering projects
A5	Understand methods for analysing and interpreting complex information, and presenting it effectively for informed decision-making
Practice - Applied Knowledge and Understanding	
B1	Select appropriate materials and manufacturing methods for given scenarios
B2	Determine the appropriate method of manufacture for an engineering component
B3	Use a range of routine and advanced skills in the application and use of computer aided design software
B4	Use relevant engineering tools, equipment and techniques in workplace and laboratory situations
B5	N/A
Communication, ICT and Numeracy Skills	
C1	Develop and communicate design ideas through the use of 3D modelling software
C2	Communicate engineering ideas and concepts through the use of presentation software
C3	Employ routine and specialised software to analyse engineering data.
C4	Employ a range of basic and some advanced engineering and mathematical analysis techniques in the solution of engineering problems in university and work place environment
C5	N/A
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Employ 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	Employ a range of approaches to formulate evidence-based solutions/ responses to defined and/or routine problems/issues associated with the workplace.
D4	Critically evaluate and analyse evidence-based solutions/responses to defined and/or routine problems/ issues associated with the workplace.
D5	N/A
Autonomy, Accountability and Working with Others	

E1	Work as a member of a team, taking account of own and others' roles, responsibilities and contributions in carrying out and evaluating tasks as a student and an employee.
E2	Manage resources within defined areas of work as agreed by WorkPlace Mentor.
E3	Deal with ethical and professional issues in accordance with current professional and/or ethical codes or practices in the discipline of engineering under guidance.
E4	Identify and apply current professional and/or ethical codes or practices in the discipline of engineering under guidance of the WorkPlace Mentor.
E5	N/A

Level 8 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
9	ENGG09056	Computer Aided Design 1	20	☐	☒	☐	
8	WRKB08001	WBL 2 - Work based Learning (40 Point)	40	☒	☒	☐	
8	ENGG08017	Design Analysis 1	20	☐	☒	☐	
8	ENGG08001	Materials and Contemporary Manufacturing	20	☒	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
Footnotes for Core Modules							

Level 8 Modules

OPTION

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
8	ENGG08040	Data Visualisation and Analysis	20	☒	☐	☐	1
8	ENGG08030	Introductory Management for Engineers	20	☒	☐	☐	1
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
Footnotes for Option Modules 1. Students are required to select one module in Term 1 from the two options available, ENGG08030 and ENGG08xxx.							

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. 2. Regulation 3.13 refers to progression with credit deficit. 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 engineering and project management and execution.
A2	Demonstrate a critical understanding of the concepts and limitations of the Finite Element Analysis technique when applied as a design tool
A3	Analyse theories, principles, concepts and terminology associated with engineering design and manufacturing applicable to the individual's workplace.
A4	Demonstrate a critical understanding of the scope, main areas and boundaries of the studied engineering themes
A5	N/A
Practice - Applied Knowledge and Understanding	
B1	Apply engineering design principles to a broad spectrum of engineering components and systems.
B2	Practise routine methods of enquiry and research associated with engineering design and manufacturing.
B3	Apply a range of design and engineering principles to development of design/s from concept to advanced prototypes.
B4	N/A
B5	N/A
Communication, ICT and Numeracy Skills	
C1	Use a range of software tools to support engineering development techniques and project management in the work place.
C2	Use project management software as a planning tool to improve the probability of completing a project on time and within budget and to communicate project requirements.
C3	N/A
C4	N/A
C5	N/A
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Understand and apply a range of engineering concepts, principles and practices in the context of well specified scenarios, exercising judgement in the selection of tools and techniques.
D2	Draw on a range of academic and industrial sources in making judgements.
D3	N/A
D4	N/A
D5	N/A
Autonomy, Accountability and Working with Others	
E1	Recognise and deal with the professional, economic, social, environmental, moral and ethical issues involved in sustainably undertaking engineering activities, and be guided by the adoption of appropriate professional, ethical and legal practices in the workplace.

E2	Use initiative in managing ethical and professional issues in accordance with current professional and/or ethical codes or practices, seeking guidance where appropriate from workplace Mentor.
E3	N/A
E4	N/A
E5	N/A

Level 9 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
9	ENGG09020	Design Analysis 2	20	☒	☐	☐	
9	ENGG09021	Design & Applications	20	☒	☐	☐	
9	ENGG09050	WBL 3: Project Management	40	☒	☒	☐	
9	ENGG09001	Design Prototyping & Testing	20	☐	☒	☐	
9	ENGG09011	Analysis & Simulation 1	20	☐	☒	☐	
				☐	☐	☐	
Footnotes for Core Modules							

Level 9 Modules

OPTION

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

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. 2. Regulation 3.13 refers to progression with credit deficit.

Award

1. Students wishing to exit after SCQF Level 9 and who have achieved 360 credits, including 120 credits at SCQF Level 9 from the programme of modules identified above, will be awarded a BEng GA Engineering, Design and Manufacture.

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 or above, 100 credits from the programme above will be awarded a BSc Engineering, Design and Manufacture.

3. 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 design and / or manufacturing techniques through academic and industrial project activity
A2	Demonstrate a detailed knowledge and understanding of design and manufacturing principles and apply them to the development of a product, component, system or process
A3	Demonstrate a critical understanding of the principal theories, concepts, and principles conventions within the selected theme(s) of study, some of which are informed by or at the forefront of the selected theme(s) of study
A4	Demonstrate knowledge and understanding of engineering design and / or manufacture including a range of established techniques of enquiry or research methodologies.
A5	Demonstrate knowledge of fundamental concepts of emerging quality practices in the context of contemporary industries
Practice - Applied Knowledge and Understanding	
B1	Execute a defined project of research, development or investigation within engineering and identify and implement relevant outcomes.
B2	Critically review and assess contributions to the research literature of relevant areas of engineering.
B3	Use a range of the principal skills, practices and/or materials associated within the selected theme(s) of study in a project linked to the workplace.
B4	Use and integrate skills, practices and/or materials which are specialised, advanced, or at the forefront of engineering design and / or manufacture.
B5	Apply emerging quality practices to improve manufacturing processes in modern industries
Communication, ICT and Numeracy Skills	

C1	Deliver a coherent and reflective presentation of an extended piece of project work to an informed audience.
C2	Produce a critical and evaluative written report of an engineering project.
C3	Use a wide range of routine and specialised skills in support of established practices within the selected theme(s) of study - for example: - make formal presentations about specialised topics to informed audiences - use a range of engineering software and techniques to support and enhance work at this level and specify refinements/ improvements to engineering components or systems - interpret, use and evaluate a range of numerical and graphical data to set and achieve goals/ targets.
C4	N/A
C5	N/A
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Critically analyse and apply a range of engineering concepts, principles and practices in the context of loosely defined problems where information is limited and/or conflicting and/or comes from a range of sources, exercising judgement in the selection of tools and techniques.
D2	Critically review and consolidate knowledge, skills and practices and thinking within the selected theme(s) of study.
D3	Demonstrate originality and creativity in dealing with professional level engineering issues.
D4	N/A
D5	N/A
Autonomy, Accountability and Working with Others	
E1	Practise in ways which show a clear awareness of own and others' roles and responsibilities in the workplace.
E2	Deal with complex ethical and professional issues in accordance with current professional and/or ethical codes or practices in the workplace.
E3	N/A
E4	N/A
E5	N/A

Level 10 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
10	ENGG10019	Analysis & Simulation 2	20	☒	☐	☐	
10	NEW	Quality Assurance and Management	20	☒	☐	☐	
10	ENGG10042	WBL 4 - Applied research project	40	☒	☒	☐	

10	ENGG10010	Manufacturing Systems Engineering	20	☐	☒	☐	
10	ENGG10086	Design for Manufacturing Processes	20	☐	☒	☐	
				☐	☐	☐	
Footnotes for Core Modules							

Level 10 Modules

OPTION

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

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

Award

1. To be eligible for the award of BEng (Hons) GA Engineering, Design and Manufacture degree a candidate must hold 480 credits, including 120 credits at SCQF 10 from the above programme.

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) Engineering, Design and Manufacture.

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

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
V1.18 Following 2025 ILR - Updated General Overview, Graduate Attributes, Level 7 modules amended to reflect introduction of ASPIRE to other programmes, Optional modules added at Level 8 and Quality Control and Improvement added in lieu of Managing Quality at Level 10 Employability, PDP, Progression and Award Statements updated.	March 2025	T.Leslie
The exit award for this programme for L7 and L8 as: Cert HE Engineering Science Dip HE Engineering level 7 ENGG07017 WBL1 Introduction to Engineering replaces WRKB07001 Work based learning 1 level 8 GRLA08007 Negotiated learning suspended GRLA08006 Negotiated learning suspended	07/05/19	

level 9 GRLA09007 Negotiated learning suspended WBL3 Project management (no code at the moment) replaces WRKB09001 Work based learning 3 level 10 ENGG10048 WBL4 Applied research project replaces WRKB10001 WBL4 Industrial project ENGG10008 Engineering Management 2 deleted from the options ENGG10018 Advanced Design deleted from the options		
Changes: Level 9 Design Engineering Application suspended and replaced with Design Prototyping and Testing Regulations updated	30/04/20	
Details of cohorts applies to updated to September 21 Admissions criteria updated according with the other engineering programmes Level 7: GRLA07004 Introduction to Engineering Design 40 credits replaced by ENGG07001 Engineering Mechanics 20 credits and ENGG07002 Applied Engineering Science 20 credits learning outcomes not affected by the changes Level 8 GRLA08008 Project Management 10 credits and GRLA08009 Engineering Management 10 credits	22/04/21	

replaced by ENGG08030 Introductory Management for Engineers 20 credits GRLA08004 Engineering Design Analysis 40 credits replaced by ENGG08017 Design Analysis 20 credits and ENGG08002 Computer Design ANALYSIS 20 credits GRLA08005 Materials and process selection 20 credits replaced by ENGG08001 Materials and Manufacture learning outcomes not affected by the changes Level 9 GRLA09005 Machine Design and simulation 40 credits replaced by ENGG09011 Analysis and Simulation 20 credits and ENGG09021 Design and Applications 20 credits GRLA09006 Project management and manufacturing 20 credits replaced by ENGG09006 Engineering Management 1 learning outcomes not affected by the changes GRLA09008 Negotiated learning suspended Level 10 ENGG1000 Final Year project 40 credits replaced by QUAL11020 Managing Quality 20 credits and ENGG10019 Analysis and Simulation 2 20 CREDITS Learning outcomes not affected by the changes		

Criteria progression award (l7,L8, L9) Students can carry over a deficit of 40 credits instead of 20 credits		
Details of Cohorts Applies to: Changes applies to Sept 23 onwards Programme Leader Updated to Dr Tony Leslie Admissions criteria updated to reflect current requirements. 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 Design Analysis 2 (T1) added in lieu of Project Management (T1).	13/04/23	
Section 4 - Details of Cohorts Applied to updated to All cohorts from Sept 2024. Section 14 - Programme Leader updated to Dr Muhammad Ayat from Dr Tony Leslie Section 15 - Admissions Criteria updated to reflect the current standard entry qualifications for 2025. Section 17 - Assessment Handbook link updated to current form of this document. Level 7 Modules: (New Module Code) Applied Mathematics 1 (T1) replaces MATH07010-Mathematics for Engineering (T1 & T2).	5/6/24	

ENGG07002 Applied Engineering Science delivery changed to T2 was T1 & T2. Level 8 Modules: ENGG08001 module title changed to Materials and Contemporary Manufacturing was Materials & Manufacture. Level 10 Modules: ENGG10086 Design for Manufacturing Processes replaces Computer Aided Manufacture CAM		
Details of Cohorts Applies to: September 2026 L7 Modules: A new module MATH07007 Computational Methods is added ENGG07004 Technical Communications and ENGG07002 Applied Engineering Science were combined in a new module ENGG07023 Introduction to Engineering and replaced by it. L8 Modules: A new module ENGG08xx Data Visualisation and Analysis is added. The students are require to choose one from ENGG08xx Data Visualisation and Analysis module and ENGG08030 Introductory Management for Engineers L10: A new module Qual10xx Quality Assurance and Management replaces Qual11020 Managing Quality		