Undergraduate Programme Specification

Session	2025/26	**Last Modified**	21/03/25
Named Award Title	BEng (Hons) Energy and Environmental Engineering		
Award Title for Each Award	BEng (Hons) Energy and Environmental Engineering BEng Energy and Environmental Engineering BSc (Hons) Energy and Environmental Engineering BSc Energy and Environmental Engineering Dip HE Engineering Cert HE Engineering Science		
Date of Approval	February 2025		
Details of Cohort Applies to	All students from from Sept 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			
Maximum Period of Registration		Full time: 5 years.	
Duration of Study			
Full-time	4 Years	**Part-time**	8 Years
Placement (compulsory)	N/A		
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 Mirzaeian		

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:

Year 1:
BEng (Hons) - Energy and Environmental Engineering
Scottish Highers:

- Standard Entry Requirements: BCCC (90 UCAS Tariff points) including Maths, plus National 5 Chemistry or Physics at B
- Minimum Entry Requirements: CCCC (84 UCAS Tariff points) including Maths, plus National 5 Chemistry or Physics at B

A Levels:

- CCD (88 UCAS Tariff Points) including Maths and Chemistry/or Physics

Irish Leaving Certificate:

- H3H3H3H4 including Maths and Chemistry/or Physics

International Baccalaureate:

- 24 points including Maths and Chemistry/or Physics

Scottish Wider Access Programme:

- Access to STEM (BBB)

Year 2:
Scottish Advanced Highers:

- CCD (112 UCAS Tariff points) including Maths and Chemistry or Physics

A Levels:

- BBC (112 UCAS Tariff points) including Maths and Chemistry or Physics

International Baccalaureate:

- 28 points

BTEC Extended Diploma:

- DDM

SQA HNC/BTEC Level 4 HNC:

- Energy & Environmental Engineering, Process Engineering, Chemical Engineering, Mechanical Engineering, Chemistry, or related subject (including Process Technologies) (No specific grade required for graded unit) No GU required.

Year 3:
SQA HND/BTEC Level 5 HND:

- Energy & Environmental Engineering, Process Engineering, Chemical Engineering, Mechanical Engineering, Chemistry, or other relevant discipline (including Process Technologies) (No specific grade required for graded unit).

Or GCE

Or SQA National Qualifications / Edexcel Foundation

Other Required Qualifications/Experience

Applicants may also be considered with other academic, vocational or professional qualifications deemed to be equivalent with the agreement of the Programme Leader. We

welcome applications from international students with an equivalency of qualifications as above

Further desirable skills pre-application
N/A

General Overview
General Overview
The programme is designed to meet an industry need and provide a sound fundamental knowledge of engineering and related enabling sciences, and the practical skills to operate successfully in areas such as the energy industry, renewable sector, environmental sector, chemical industry, biotechnical sectors, oil and gas industry, petrochemical industry, pharmaceutical industry, food industry, water industry, nuclear industry, battery industry, as well as in academic research and teaching. It provides a unique opportunity for students to learn not only the fundamentals of the key subjects in energy and environmental engineering, but to develop an interdisciplinary perception of energy & environmental problems and the ability to work towards finding solutions to the challenging real-world issues in these areas, that are useful to society at an industrial level. Energy and environmental engineering degrees at the university are recognised by employers as having a strong applied focus which is a good preparation for work in many industries.
The Energy and Environmental Engineering BEng (Hons) programme combines strong academic content and the set of knowledge and fundamentals of the key subjects in energy, environment, and sustainability with industrial requirements for specialised skills and knowledge in these fields. It combines a strong academic content on the theory of the design, analysis, development, and operation of the processes, and environmental & energy systems in an optimal, sustainable and energy efficient way with the opportunity for direct, hands-on experience in the laboratory, case studies from industry, and project work.
The core knowledge is delivered, and professional skills are developed throughout the programme through theoretical, practical and project work, problem solving activities with the aid of computer technology, group working, together with the engineering and design, analytical, numerical, management and communication skills which are expected of the modern engineer and are recognised by employers as having a strong applied focus in preparation for work in many industries.
Different energy and environmental aspects including energy resources, its generation & storage, and its recovery/conversion and transfer, and also its sustainability, efficiency and improvements included in the programme in addition to its green processing, safety and decarbonization parts (i.e. environmental pollution control and separation technologies, nuclear energy, environmental control and safety, decarbonization and net zero technology, and environmental engineering) provide students with essential knowledge and professional skills, and throughout the programme these skills develop competent and innovative graduates who are universally prepared, work-ready and successful in the area of energy and environmental engineering fit for the 21st century.
Students with an Honours degree graduated from this programme may proceed to postgraduate studies in MSc Sustainable Technology Programme or MSc Environmental Management at UWS / PhD at UWS or other universities.
The Energy and Environmental Engineering is contextually aligned with the Engineering Council's AHEP4 Learning Outcomes as outlined below:
C1- Apply knowledge of mathematics, statistics, natural science and engineering principles to the solution of complex problems. Some of the knowledge will be at the forefront of the particular subject of study.

C2- Analyse complex problems to reach substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles.
C3- Select and apply appropriate computational and analytical techniques to model complex problems, recognizing the limitations of the techniques employed.
C4- Select and evaluate technical literature and other sources of information to address complex problems.
C5- Design solutions for complex problems that 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.
C6- Apply an integrated or systems approach to the solution of complex problems.
C7- Evaluate the environmental and societal impact of solutions to complex problems and minimise adverse impacts.
C8- Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.
C9- Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.
C10- Adopt a holistic and proportionate approach to the mitigation of security risks.
C11- Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.
C12- Use practical laboratory and workshop skills to investigate complex problems.
C13-Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.
C14- Discuss the role of quality management systems and continuous improvement in the context of complex problems.
C15- Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.
C16- Function effectively as an individual, and as a member or leader of a team.
C17- Communicate effectively on complex engineering matters with technical and non-technical audiences.
C18- Plan and record self-learning and development as the foundation for lifelong learning/CPD General Overview of Programme.
Energy and Environmental Engineering covers a wide variety of theoretical, conceptual and practical areas, and requires its practitioners to display and exercise a range of knowledge and skills. A programme like this requires a cross-discipline approach in delivering a programme which fits the needs of society for future engineers in the fields of energy and environment. The programme and the teaching approaches encourage collaborative working, effective communications, resilience and perseverance, and development of fundamental knowledge, research and inquiry skills in the field of energy, environment, process engineering and sustainability through full collaboration within the divisions of Engineering and Physical Sciences in the School of Computing, Engineering and Physical Sciences, benefiting from the cross-school expertise that is required to deliver this type of programme. Delivery of the programme therefore involves a diversity of teaching and assessment methods appropriate to the learning outcomes of the modules and of the overall programme, as indicated below:
- Lectures are used to present, discuss and evaluate subject matter and content.
- Tutorial work is closely integrated with the lecture material, and generally requires students to solve problems or otherwise to develop understanding of the materials presented.
- Investigations and case studies require students to gather, organise and evaluate numerical or non-numerical information either individually or on a group basis (the latter specifically designed to develop teamwork skills).

- Most modules involve an element of practical work, to develop laboratory skills, to familiarise students with modern process equipment and experimental techniques and to enhance practical, analytical, investigative, evaluative, and presentational skills.
- Assignments, investigations, laboratory results and other coursework require presentation in a variety of forms, developing skills in oral and written presentation and in the application of various forms of IT.

The level and intensity of the programme is developed throughout the programme in line with SCQF criteria for each level, while the content is according to the requirements laid out in AHEP4th and closely aligned with QAA subject benchmark statements at all stages. Student autonomy and individual responsibility for learning is encouraged at all levels and PDP is developed throughout the programme.

Typical Delivery Method

On-campus lectures, tutorials and laboratories (practical and computer) with additional independent activity.

Any additional costs

Laboratory activities require lab coat and safety glasses and students will need to pay for these.

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 Energy and Environmental Engineering programme provides opportunities throughout the levels to enable these skills to be developed and focussed appropriately.

ASPIRE modules (ASPIRE & ASPIRE 2) integrated within the programme in L7 and L8 are modules for PDP/transferable skills development, with different elements being used to deliver PDP/transferable skills through a series of timetabled activities. They support students to shape and chart their own unique path, based on their goals and ambitions and offer students the chance to focus on developing existing skills, whilst nurturing a range of competencies and attributes that are highly sought-after by employers, such as digital skills, creativity, critical thinking, innovation, research skills; communication; leadership; entrepreneurship; academic and writing skills; team working; and digital literacies.

Energy and Environmental Engineering knowledge and innovative skills on solutions to energy and environmental problems are developed throughout the programme by exploring different tools, techniques and approaches such as process simulation software (Aspen HYSYS and ASPEN PLUS) for the analysis of equipment and operations and Computation Fluid Dynamics (CFD) and Fluent for the analysis of representative equipment, that scientists and engineers take to design chemical processes to manufacture chemical products in a clean, safer and sustainable way reducing the use of toxic and hazardous materials whilst also minimizing the use of energy.

Particularly, but not exclusively, in later years of the programme, critical analytical and inquiry skills are developed and used to solve industry related problems and provide students with knowledge and skills required for environmental protection in modules such as Environmental policy and Legislation, Energy and Environmental Systems Simulation, Control & Safety, and Renewable System Design.

In addition, other modules and practical activities such as Project Management, Principles of Sustainability, and Final-year Project included in the programme provide students with transferable and professional skills, develop competent and innovative graduates who are

universally prepared, work-ready and successful in the areas of energy and environmental engineering fit for the 21st century.
Renewable System Design 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.
Ethical awareness and social responsibility are 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 UWS Energy and Environmental Engineering graduates gain employment throughout the UK and overseas in energy industry, renewable energy sector, environmental sector, chemical industry, biotechnical sectors, oil and gas industry, petrochemical industry, pharmaceutical industry, food industry, water industry, nuclear industry, battery industry 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
A number of local employers are offering short term unpaid placements at the end of year 3 and this is leading to further opportunities for paid internships at the end of year 4.

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:

Attendance in lectures, tutorial sessions and all practical activities.

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 of chemical structures, reactions and equilibria and relate knowledge to chemical theories, concepts and principles.
A2	Show an awareness of clean and green chemical processes and its importance in the commercial context and environmental sustainability of engineering activities.
A3	Show an awareness of the fundamentals of engineering sciences and demonstrate a basic knowledge and understanding of introductory principles and contexts with respect to multi-disciplinary aspects of engineering.
A4	Develop the ability of engineering and scientific problem solving using applied mathematics.
A5	Develop broad knowledge of different fuels as energy sources, appreciate basic environmental issues associated with their production, and their replacement with cleaner, safer, and cost-effective substitutes. A6: Show an awareness of the different energy sources, their properties and appreciate basic environmental issues associated with their production.
Practice - Applied Knowledge and Understanding	
B1	Apply basic knowledge and skills in solving routine problems in engineering and chemistry.
B2	Demonstrate the practice of basic laboratory skills.
B3	Use and critically apply technical literature and other information sources to solve complex problems.
B4	N/A
B5	N/A
Communication, ICT and Numeracy Skills	
C1	Tackle a range of numerical and non-numerical problems in theoretical and practical situations.
C2	Present information in a variety of forms relevant to the context.
C3	Obtain information and data from standard sources and literature.
C4	Present and understand graphical depiction of information and engineering drawings.
C5	Evaluate the environmental and social impact of solutions to complex problems and minimise adverse impact.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Develop an appropriate range of transferable skills and apply these in problem solving.
D2	Present and evaluate information and ideas in the handling of environmental and engineering issues.

D3	Use a range of approaches to the solution of routine 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. Exercise some initiative in and take responsibility for defined activities.
E2	Take supervision especially in unfamiliar laboratory situations.
E3	Work with others in defined group exercises and develop transferable skills that will be of value in working with others.
E4	Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.
E5	N/A

Level 7 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
7	MATH07011	Applied Mathematics	20	☒	☐	☐	
7	ENGG07023	Introduction to Engineering	20	☐	☒	☐	
7	CHEM07XXX	Introduction to Green Chemistry	20	☒	☐	☐	
7	ENGG07XXX	Fundamentals of Energy & Fuels	20	☐	☒	☐	
7	CHEM07011	Chemistry and Reactions	20	☐	☒	☐	
7	APPD07001	ASPIRE	20	☒	☐	☐	
Footnotes for Core Modules All modules are core.							

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) Energy and Environmental 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	Development of knowledge and understanding of some major core theories and principles of engineering, mathematics and chemistry and develop the ability to apply this knowledge to practical engineering problems.
A2	Demonstrate an extended knowledge of the different types and characteristics of energy resources with a critical awareness of their new developments and their wider context of engineering.
A3	Develop familiarity with the different bioprocessing used in the process industry and appreciate the importance of safety, environmental protection, and sustainability in engineering context.
A4	Show some knowledge of major current issues pertaining to the biochemical and environmental processes and develop an appreciation of the basic issues related to environmental engineering.
A5	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.
Practice - Applied Knowledge and Understanding	
B1	Use a range of routine skills, techniques and practices in engineering, mathematics and chemistry, including some advanced aspects.
B2	Carry out routine investigations into practical and theoretical issues.
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	Ability to use knowledge of engineering to identify major hazards associated with a materials and processes.
B5	Evaluate the environmental and societal impact of engineering solutions (to include the entire life cycle of product/process) and to minimise adverse impacts.
Communication, ICT and Numeracy Skills	
C1	Use a range of standard applications and instrumentation to obtain and process data.
C2	Apply and evaluate numerical and graphical procedures to laboratory and literature data, discussing the limitations of the techniques employed.
C3	Present information in numerical, graphical and verbal forms to a variety of audiences. Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.
C4	Demonstrate the ability to communicate engineering ideas and concepts through the use of presentation and application software.
C5	Select and critically evaluate technical literature and other sources of information to solve complex problems.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	

D1	Undertake critical analysis, evaluation and synthesis of information related to the main ideas and concepts within the discipline.
D2	Demonstrate the ability to define a problem and identify constraints.
D3	Use a variety of approaches to develop solutions to defined problems.
D4	Display a critical evaluation of solutions and explanations of experimental data.
D5	Use appropriate quantitative science and engineering tools to the analysis of basic engineering problems
Autonomy, Accountability and Working with Others	
E1	Exercise autonomy and initiative in defined professional activities.
E2	Take responsibility for work planning and time management within specified contexts.
E3	Co-operate in group working exercises and develop an enhanced level of transferable skills that will be of value in working with others in more complex situations.
E4	Work under guidance on current professional practice and issues and recognise the role and contribution of team members when carrying out and evaluating tasks.
E5	Develop an awareness of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk) issues.

Level 8 Modules

CORE

SCQF Level	**Module Code**	**Module Title**	**Credit**	**Term**			**Footnotes**
				1	**2**	**3**	
8	MATH08001	Mathematics for Design	20	☒	☐	☐	
8	ENGG08021	Introduction to Thermo-Fluids	20	☐	☒	☐	
8	ENGG08XXX	Renewable Energy Resources and Nuclear Energy	20	☐	☒	☐	
8	CHEM08001	Physical Chemistry 2	20	☒	☐	☐	
8	ENGG08XXX	Environmental Engineering and Bioprocessing	20	☒	☐	☐	
8	APPD08001	ASPIRE 2	20	☐	☒	☐	
Footnotes for Core Modules All modules are core.							

Level 8 Modules

OPTION

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

				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	
				☐	☐	☐	

Footnotes for Option Modules

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.

3. Students who fail one core module and have 'No further attempts' may be able to transfer and continue on the BSc (Hons) Energy and Environmental 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 a broad and integrated knowledge and understanding of major aspects of engineering.
A2	Display a critical understanding of principal theories, concepts and terminologies of engineering science.
A3	Develop an integrated approach to energy and environmental engineering including safety, energy systems, environmental issues, and sustainability.
A4	Knowledge and understanding of the principles of IT and specialist software relevant to engineering and design, and the ability to use such software to the analysis and design of components and systems.
A5	Knowledge and understanding of mathematical principles and techniques necessary to underpin their education in energy and environmental engineering and to enable them to apply mathematical methods, tools and notation in the analysis and solution of in energy and environmental engineering problems.
Practice - Applied Knowledge and Understanding	
B1	Use a selection of skills, techniques and practices in handling energy and environmental systems control and safety concepts and issues.
B2	Display skills in selected equipment, techniques, practices and information at a specialised level in energy and environmental engineering.
B3	Demonstrate ability to critically analyse a process to identify the risks involved.
B4	Practise routine and novel investigations and enquiries in the selection and design of energy and environmental systems.
B5	Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed. B6: Select and critically evaluate technical literature and other sources of information to solve complex problems. B7: Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.
Communication, ICT and Numeracy Skills	
C1	Make formal and informal presentations on topics in energy and environmental engineering by a variety of methods to a range of audiences.
C2	Use a range of IT applications to obtain and manage information and to model complex problems.
C3	Display the use of numerical and graphical procedures to interpret numerical information
C4	Ability to apply a systems approach to engineering complex problems through know-how of the application of relevant technologies.
C5	N/A
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Undertake critical analysis, evaluation and synthesis of ideas, concepts, information and issues in the discipline.
D2	Identify and analyse routine professional problems and issues.

D3	Make use of a range of sources in making judgments and decisions.
D4	Develop the effective use of information technology.
D5	N/A
Autonomy, Accountability and Working with Others	
E1	Exercise some autonomy and initiative in dealing with activities at a professional level.
E2	Take some responsibility for the work of others and for the use of resources.
E3	Practise working in group exercises taking account of others' roles and responsibilities.
E4	Work under guidance on aspects of professional skills and ethical codes.
E5	Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.

Level 9 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
9	ENGG09040	Thermodynamics and Heat Transfer	20	☒	☐	☐	
9	ENGG09XXX	Environmental Pollution Control and Separation Technologies	20	☐	☒	☐	
9	ENGG09XXX	Environmental Policy and Legislation	20	☒	☐	☐	
9	ENGG09XXX	Energy and Environmental Systems Simulation, Control & Safety	20	☐	☒	☐	
9	ENGG09004	Project Management	20	☒	☐	☐	
9	ENGG09XXX	Decarbonization and Net-Zero Technologies	20	☐	☒	☐	
Footnotes for Core Modules All modules are core.							

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. 3. Students who fail one core module and have 'No further attempts' may be able to transfer and continue on the BSc (Hons) Energy and Environmental Engineering programme. Award 1. Students wishing to exit after SCQF Level 9 and who have achieved 360 credits from the programme of modules identified above, will be awarded a BEng Energy and Environmental 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 Energy and Environmental Engineering. 3. Distinction will be awarded in line with University Regulations 3.25 and 3.26 and 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 critical understanding of a broad range of engineering principles and theories of the main areas of Energy and Environmental Engineering.
A2	Familiarity with the principles and applications of a range of modern design techniques and the ability to identify, define, and plan the steps necessary to design energy systems and to carry out detailed design of process equipment.
A3	Knowledge of modern specialist topics in selected areas of Energy and Environmental engineering, and awareness of major issues at the frontiers of energy and environmental technology and process development.
A4	Understanding of factors influencing the feasibility, design and operation of sustainable processes including environmental and economic issues. Show evidence of the application of sustainability principles and circular economy in relation to the design process.

A5	Show understanding of the design and analysis of renewable energy and nuclear generation processes. Develop clear understanding of the principles of energy generation, storage and conversion technologies and systems.
Practice - Applied Knowledge and Understanding	
B1	Demonstrate the practice of laboratory skills and the use of range of techniques, practices and engineering software for the design and evaluation of energy storage/conversion systems.
B2	Investigative skills and planning of strategies in problem solving.
B3	Ability to use printed and other published materials as a learning resource.
B4	Execution of a defined programme of research / investigation / design.
B5	Apply knowledge of engineering management principles, commercial context, project and change management.
Communication, ICT and Numeracy Skills	
C1	Communicate effectively within a team or group, to a non-expert audience and to individuals using a variety of means.
C2	Information management skills, especially IT skills including on-line computer searches.
C3	The ability to use, interpret results, and communicate outcomes of variety of discipline specific IT products such as process simulators, process safety analysis, cost estimation, process integration, and energy systems analysis software.
C4	The ability to apply information technology to the design process.
C5	The ability to use IT to facilitate collaboration and information sharing within the organisation as well as communication with clients and other stakeholders.
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Development of rigour in investigation, evaluation and analysis.
D2	Synthesise information from a number of sources to gain a coherent understanding of theory and practice.
D3	The ability to use analytical and modelling technique to describe and evaluate the performance of systems and processes.
D4	Carry out individual and group projects in a professional, responsible and ethical manner.
D5	Demonstrate creative skills in preparing engineering design solutions. D6. Demonstrate the ability to investigate and solve engineering problems using computer simulation.
Autonomy, Accountability and Working with Others	
E1	Operate effectively in a group / team situation. Working with peers demonstrate a high level of ability to function effectively as a team member, demonstrating leadership when required.
E2	Take responsibility for personal and professional learning and development. Plan and record self-learning and development as the foundation of lifelong learning/CPD.
E3	Management of time and prioritising of workloads.
E4	Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits, and importance of supporting equality, diversity and inclusion.

E5	N/A

Level 10 Modules

CORE

SCQF Level	Module Code	Module Title	Credit	Term			Footnotes
				1	2	3	
10	ENGG10001	Final Year Project (Individual)	40	☒	☒	☐	
10	ENGG10XXX	Electrochemical Energy Storage and Conversion Technologies	20	☒	☐	☐	
10	ENGG10XXX	Renewable Energy Systems Design	20	☒	☐	☐	
10	ENGG10XXX	Nuclear Techniques & Power Generation	20	☐	☒	☐	
10	ENGG10XXX	Principles of Sustainability	20	☐	☒	☐	
			20	☐	☐	☐	
Footnotes for Core Modules All modules are core.							

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) Energy and Environmental Engineering 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) Energy and Environmental Engineering.

3. 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**
Following 2025 ILR Progression and Award Statements updated.	28/03/25	T.Leslie