

Programme Specification

When printed this becomes an uncontrolled document.

PLEASE DO NOT ADD ANY PICTURES OR TABLES.

Please check the Programme Directory for the most up to date version:

[UG Programme Directory](#)

[PG Programme Directory](#)

Section 1 – Regulatory Details				
1.1	Awarding body	Wrexham University		
1.2	Teaching institution	Wrexham Plas Coch Campus		
1.3	Final award and programme title (Welsh and English)	BEng (Anrh) Prentisiaeth Gradd Peirianeg Ynni Cynaliadwy (Prentisiaeth Gradd) BEng (Hons) Sustainable Energy Engineering (Degree Apprenticeship)		
1.4	Exit awards and titles	BEng (Ord) Sustainable Energy Engineering Diploma of Higher Education in Sustainable Energy Engineering Certificate of Higher Education in Engineering		
1.5	Credit requirements	Bachelor Honours degree: 360 credits in total including a minimum of 120 credits at level 6 BEng (Ord): 300 credits in total including a minimum of 60 credits at level 6 Dip HE: 240 credits in total including a minimum of 120 credits at level 5 Cert HE: A minimum of 120 credits at level 4		
1.6	Intake points	Once yearly, September		
1.7	Mode of study	Part time		
1.8	Length of delivery	3 Years		
1.9	Location of delivery	Campus based (Wrexham)		
1.10	Mode of delivery	<table><tr><td>Part time</td><td>In person</td></tr></table>	Part time	In person
Part time	In person			
1.11	Language of delivery	English		
1.12	Faculty	Faculty of Arts, Computing and Engineering (FACE)		
1.13	Subject area	Engineering		

Section 1 – Regulatory Details							
1.14	HECoS Code	BEng (Hons) Sustainable Energy Engineering 100180					
1.15	Suitable for applicants requiring a Student Visa?	<table><tr><td>Part time</td><td>In person</td><td>No</td></tr></table>			Part time	In person	No
Part time	In person	No					
1.16	Is DBS check required on entry?	No					
1.17	Professional, Statutory or Regulatory Body (PSRB) accreditation	The engineering programmes have been developed in line with PSRB requirements, including IMechE, IET, & RAeS. BEng (Hons) Sustainable Energy Engineering *IET *Subject to accreditation 2027 IET - https://www.theiet.org This information is correct at the time of validation, please refer to the PSRB register for current accreditation status.					
1.18	Welsh Medium Provision	The programmes will be delivered through the medium of English. Students have the option to submit assessments in the medium of Welsh. To support Welsh Medium development, the programme includes a 20-credit Welsh for STEM module available as a short course for all engineering students.					
1.19	External reference points	QAA Subject Benchmark Statement Engineering (2023) QAA Characteristics Statements Characteristics Statement Higher Education in Apprenticeships Higher Education Credit Framework CQFW PSRB Accreditation Guidelines					
1.20	Derogation to Academic Regulations	Regulation Clause(s) affected	Derogation Summary				
		UG-D3	Each element of assessment (where there is more than one assessment) requires a minimum mark of 10% below the pass mark (30% for L6).				
		E10.4, UG-E5.1	- A maximum of 30 credits can be compensated. - No compensation allowed for L5 or L6 modules. - Modules at level 4 that capture AHEP Learning outcomes must also not be compensated (Work Based Learning, Engineering Materials & Processes and Core Engineering Skills and Application).				

Section 1 – Regulatory Details

1.21	Foundation Year route	No
1.22	Placement / Work based learning	Work based learning is embedded within the programme, which must be completed to pass the modules
1.23	Length and level of the placement	N/A
1.24	Collaborative arrangement	N/A

Section 2 – Programme Details

2.1 Aims of The Programme

The BEng (Hons) Sustainable Energy Engineering is a full-time, three-year Degree Apprenticeship designed to develop engineers with the knowledge, skills, and practical experience to drive the transition to low-carbon and renewable energy systems. Fully funded and delivered in partnership with employers, the programme enables apprentices to apply their academic learning directly to real-world challenges within the energy and engineering sectors.

The programme features an innovative, exam-free assessment model based on coursework, practical activities, and employer-focused projects, ensuring assessments are relevant to modern engineering practice. With strong emphasis on industry collaboration, sustainability, and future-facing skills, the programme supports apprentices in progressing into roles in renewable energy, energy systems design, and environmental innovation, as well as into further academic or professional development.

2.2 Programme Structure and Diagram, Including Delivery Schedule

In Year 1, apprentices develop a strong foundation in core engineering concepts through modules such as Engineering Maths, Mechanical Engineering, and Electrical Engineering. These are complemented by Engineering Design and CAD and Engineering Materials & Processes, providing a balance of theoretical and practical skills. Learning is reinforced through hands-on laboratory sessions and the Work Based Learning module, which ensures direct application of knowledge within the workplace from the outset.

In Year 2, apprentices explore industry-focused modules including Renewable Energy System Design, Energy Storage and Network Integration, and Energy Infrastructure Systems & Governance. Innovation is addressed through Digital Innovation in Engineering, while Engineering & Operations Management builds awareness of business processes. The Industrial Project runs across the year, allowing apprentices to contribute meaningfully to a workplace challenge or opportunity.

In Year 3, apprentices engage with advanced and emerging technologies through modules such as Energy Modelling & Simulation, Smart Grids and Distributed Generation and Systems Engineering and Management. Professional Practice module supports their transition into professional roles. The final Project spans the year and allows apprentices to undertake a substantial, employer-aligned investigation, demonstrating their ability to deliver innovative, sustainability-driven solutions in the energy sector.

Part-time Programme Structure						
Level	Module Code	Module Title	Credit Value	Core/Option	Semester of delivery	Year of Study
L4	ENG4C2	Engineering Maths	20	Core	1	Yr.1
L4	ENG4D3	Mechanical Engineering	20	Core	1	Yr.1
L4	ENG4D2	Electrical Engineering	20	Core	2	Yr.1
L4	ENG4C9	Engineering Design and CAD	20	Core	2	Yr.1
L4	ENG4C8	Fundamentals of Renewable Engineering	20	Core	3	Yr.1
L4	ENG4D5	Work Based Learning	20	Core	1 - 3	Yr.1
L5	ENG5C5	Renewable Energy System Design	20	Core	1	Yr.2
L5	ENG5D2	Digital Innovation in Engineering	20	Core	1	Yr.2
L5	ENG5D5	Energy Storage and Network Integration	20	Core	2	Yr.2
L5	ENG5D6	Energy Infrastructure Systems & Governance	20	Core	2	Yr.2
L5	ENG5D9	Engineering & Operations Management	20	Core	3	Yr.2
L5	ENG5D7	Industrial Project	20	Core	1 - 3	Yr.2
L6	ENG6C8	Energy Modelling & Simulation	20	Core	1	Yr.3
L6	ENG6D8	Smart Grids and Distributed Generation	20	Core	1	Yr.3
L6	ENG6E2	Systems Engineering and Management	20	Core	2	Yr.3
L6	ENG6E3	Professional Practice	20	Core	2	Yr.3
L6	ENG6E4	Project	40	Core	1 - 3	Yr.3

2.3 Programme Learning Outcomes

The following programme learning outcomes have been fully mapped against the AHEP-4 learning outcomes for Partial CEng Accreditation.

No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)	Optional Ref (PSRB standards)
1.1	Apply knowledge of mathematics, statistics, natural science and engineering principles to broadly-defined problems within renewable engineering. Some of the knowledge will be informed by current developments in the subject of study.	☒	☐	☐	☐	☐	☒	☐	☐	-
1.2	Apply knowledge of mathematics, statistics, natural science and engineering principles to the solution of complex sustainable engineering problems. Some of the knowledge will be at the forefront of the particular subject of study.	☒	☐	☐	☐	☐	☐	☒	☒	C1
2.1	Analyse broadly-defined renewable engineering problems reaching substantiated conclusions.	☒	☐	☐	☐	☒	☐	☐	☐	-
2.2	Analyse complex problems to reach substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles within sustainable engineering.	☒	☐	☐	☐	☐	☐	☒	☒	C2
3	Select and apply appropriate computational and analytical techniques to model complex problems, recognising the limitations of the techniques employed.	☒	☐	☐	☐	☐	☐	☒	☒	C3
4.1	Select and use technical literature and other sources of information to address broadly-defined problems within sustainable engineering problems.	☒	☐	☐	☐	☐	☒	☐	☐	-

No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)	Optional Ref (PSRB standards)
4.2	Select and evaluate technical literature and other sources of information to address complex problems within sustainable engineering problems.	☒	☐	☐	☐	☐	☐	☒	☒	C4
5	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.	☐	☒	☐	☐	☐	☐	☒	☒	C5
6.1	Apply a systematic approach to the solution of broadly-defined problems.	☐	☒	☐	☐	☐	☒	☐	☐	-
6.2	Apply an integrated or systems approach to the solution of complex problems.	☐	☒	☐	☐	☐	☐	☒	☒	C6
7	Evaluate the environmental and societal impact of solutions to complex problems and minimise adverse impacts.	☐	☒	☐	☐	☐	☐	☒	☒	C7
8	Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct.	☐	☒	☐	☐	☐	☐	☒	☒	C8
9	Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.	☐	☒	☐	☐	☐	☐	☒	☒	C9
10	Adopt a holistic and proportionate approach to the mitigation of security risks.	☐	☒	☐	☐	☒	☐	☐	☐	C10

No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)	Optional Ref (PSRB standards)
11	Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion.	☐	☒	☐	☐	☐	☐	☒	☒	C11
12.1	Use practical laboratory and workshop skills to investigate broadly-defined problems.	☐	☐	☒	☐	☐	☒	☐	☐	-
12.2	Use practical laboratory and workshop skills to investigate complex problems.	☐	☐	☒	☐	☐	☐	☒	☒	C12
13.1	Select and apply appropriate materials, equipment, engineering technologies and processes.	☐	☐	☒	☐	☐	☒	☐	☐	-
13.2	Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.	☐	☐	☒	☐	☐	☐	☒	☒	C13
14	Discuss the role of quality management systems and continuous improvement in the context of complex problems.	☐	☐	☒	☐	☐	☐	☒	☒	C14
15	Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights.	☐	☐	☒	☐	☐	☐	☒	☒	C15
16	Function effectively as an individual, and as a member or leader of a team.	☐	☐	☐	☒	☐	☒	☐	☐	C16
17.1	Communicate effectively with technical and non-technical audiences.	☐	☐	☐	☒	☒	☐	☐	☐	-

No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)	Optional Ref (PSRB standards)
17.2	Communicate effectively on complex engineering matters with technical and non-technical audiences.	☐	☐	☐	☒	☐	☐	☒	☒	C17
18	Plan and record self-learning and development as the foundation for lifelong learning/CPD.	☐	☐	☐	☒	☒	☐	☒	☒	C18
19	Plan, conduct and report on an original programme of work (Dissertation).	☒	☒	☒	☒	☐	☐	☐	☒	-

Note: K- Knowledge and understanding; I-Intellectual Skills; S-Subject Skills; P-Practical, professional and employability skills

2.4 Learning and Teaching Strategy

Key to this provision is the opportunity to work on authentic assessments that replicate as best as possible real world engineering careers. Formal examinations have been removed and replaced where possible with coursework, projects or portfolio. Inbuilt into the assessment strategies are timed assessment that may include software-based assessment, practical evaluation or viva style assessments. Assessments are designed to be innovative and inclusive and will evolve as technology develops.

The learning and teaching strategy aligns with WU's Active Learning Framework (ALF) incorporating key employability skills. It is flexible, engaging, and responsive to student diversity and professional demands. A blended approach combines on-campus sessions with virtual study activities.

Face-to-Face Learning

Students will engage in lectures, seminars, and workshops in various settings, incorporating case studies and problem-based learning. The programme is mapped to instructional models that increase laboratory-based learning, critical for reinforcing theoretical knowledge through practical application:

Model A: 100% Classroom

Model B: 50% Classroom / 50% Laboratory

Model C: 25% Classroom / 75% Laboratory

Model D: 100% Laboratory

These models promote deeper learning, research capability, and technical proficiency. Laboratory hours have been increased to allow students to apply classroom-acquired theory, reinforcing understanding and preparing them for future innovation in industry or postgraduate research.

Virtual Learning

Delivered through the VLE and Microsoft Teams, virtual learning includes asynchronous tasks (videos, quizzes, readings, virtual visits) and synchronous activities (discussions, case studies, simulations). Sessions will be recorded where appropriate.

Tutorials

Delivered both in person and online, tutorials promote active participation through individual and group engagement. They are designed to encourage critical thinking, reflective practice, and student-led learning, supporting creativity, independence, and a deeper understanding of subject knowledge and professional practice.

Work Based Learning

On the job learning is of great importance on these degree apprenticeships programme. Work Based Learning is embedded throughout each level, either as a dedicated module (WBL, Industrial Project, Project) or as assessments is taught modules, where knowledge is demonstrated via work related assessment briefs. For the core WBL modules, the projects are agreed in the workplace, with the apprentice and mentor developing the scope of the work that satisfies the brief set by the tutor.

2.5 Assessment Strategy

The assessment strategies are designed to be supportive and to build confidence, whilst also ensuring that students engage with core material, develop the fundamental knowledge and subject skills required for progression of undergraduate studies, and reward and incentivise students.

Assessment tasks are varied to facilitate students to evidence their learning and include portfolio, presentations, practical and oral assessment which promote authentic assessment and encourage the deeper learning that is a key feature of higher education. Formative feedback opportunities are embedded into each of the modules regularly and encourages students to reflect on their progress.

Feedback is provided within 15 working days of the assessment submission date and may be delivered individually or in groups, in written, verbal, or recorded formats. This ensures that students receive timely, constructive, and developmental guidance to support continuous learning and improvement.

Disclaimer

Throughout quality assurance processes we have ensured that this programme engages with and is aligned to:

- [Academic Regulations](#)
- [The University Skills Framework](#)
- [Welsh Language Policy](#)
- [Equality and Diversity Policy](#)
- [The Student Union offers support for students](#)

Section 3 – Programme set up (office use only)

3.1	Framework	FRAME025_SEP
3.2	Cost centre	GAME
3.3	Course type (HESA)	N/A
3.4	Fee model	Standard full time UG
3.5	Are any modules taught over either multiple periods or across the HESA year (defined as running 1st August - 31st July)	Yes
3.6	Student funding model	Other – Medr funded
3.7	Mode of Attendance (Funding)	In person attendance
3.8	Does the Suitability for Practice Procedure apply to the programme?	No
3.9	Programme Leader	Daniel Knox

Section 3 – Programme set up (office use only)		
3.10	Date of Approval	30/06/2026
3.11	Date and type of Revision	