

Programme Specification

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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) Peirianeg Fecanyddol BEng (Hons) Mechanical Engineering BEng (Anrh) Peirianeg Fecanyddol (gyda Blwyddyn Sylfaen) BEng (Hons) Mechanical Engineering (with Foundation Year)			
1.4	Exit awards and titles	BEng (Ord) Mechanical Engineering Diploma of Higher Education in Mechanical 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	Full time			
1.8	Length of delivery	BEng (Hons) Mechanical Engineering - 3 years BEng (Hons) Mechanical Engineering (with Foundation Year) – 4 years			
1.9	Location of delivery	Campus based (Wrexham)			
1.10	Mode of delivery	<table><tr><td>Full time</td><td>In person</td></tr></table>		Full time	In person
Full time	In person				

Section 1 – Regulatory Details						
1.11	Language of delivery	English				
1.12	Faculty	Faculty of Arts, Computing and Engineering (FACE)				
1.13	Subject area	Engineering				
1.14	HECoS Code	BEng (Hons) Mechanical Engineering 100190				
1.15	Suitable for applicants requiring a Student Visa?	<table><tr><td>Full time</td><td>In person</td><td>Yes</td></tr></table>		Full time	In person	Yes
Full time	In person	Yes				
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) Mechanical Engineering *IMechE *Subject to accreditation 2027 IMechE - https://www.imeche.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 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.			

Section 1 – Regulatory Details			
			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).
1.21	Foundation Year route	Yes (STEM Foundation Year)	
1.22	Placement / Work based learning	Optional Work Placement – placements embedded within the programme, which must be completed to pass the module or programme. These may range from one day to a week or a few months and can be delivered as day release or in blocks.	
1.23	Length and level of the placement	The placement will last up to 12 weeks in SEM-2 of the academic calendar through the delivery of ENG6E3 Professional Practice.	
1.24	Collaborative arrangement	N/A	

Section 2 – Programme Details	
2.1 Aims of The Programme	
The BEng (Hons) Mechanical Engineering programme aims to produce skilled, adaptable engineers equipped to meet the demands of modern industry. Delivered full-time and mapped to AHEP-4 standards, the programme integrates theoretical learning with hands-on laboratory experience to build strong technical foundations and real-world problem-solving skills. The aim of this programme is for students to be able to apply knowledge of engineering principles to problems with no immediately known solutions. This knowledge will be built up during the length of the programmes using lecturers that build up fundamental understanding of mathematics, statistics, natural sciences in an mechanical context. Key engineering behaviours will be taught and demonstrated in order to comply with being a professional engineer. This will include, diversity, inclusivity, ethics, sustainability, team working, communication and statutory obligations (H&S). Students will gain experience using modelling techniques whilst challenging the outcomes of computation analyses to ensure correct solutions are obtained. The key aim is to provide a well-rounded, technically competent and solution driven independent learners in this diverse field of engineering.	

2.2 Programme Structure and Diagram, Including Delivery Schedule
In Year 1, students are introduced to the fundamental principles of mechanical engineering through modules such as Engineering Maths, Core Engineering Skills and Application, and Fundamentals of Mechanical Engineering. Practical and digital competencies are developed through Engineering Design

2.2 Programme Structure and Diagram, Including Delivery Schedule

and CAD, Engineering Materials & Processes, and Practical Engineering Skills, ensuring a strong foundation in both theory and hands-on practice.

In Year 2, students deepen their understanding of key engineering concepts in Mechanical Design and Analysis, Digital Innovation in Engineering, and Manufacturing Technology and Automation. Applied skills are further developed in Design to Manufacture (CAD/CAM), while teamwork and problem-solving are embedded in the Engineering Design Project, where students work collaboratively on complex design challenges.

In Year 3, the focus shifts towards specialisation and professional readiness. Students explore advanced topics such as Mechanical Modelling & Simulation, Continuous Improvement and Lean, and Mechanical Systems Integration. The Professional Practice module supports career preparation and ethical awareness. The year concludes with an individual Project, where students independently manage and deliver a substantial piece of technical work, demonstrating their capability as graduate mechanical engineers.

Full-time Programme Structure

Level	Module Code	Module Title	Credit Value	Core/Option	Semester of delivery
L4	ENG4C2	Engineering Maths	20	Core	1
L4	ENG4C3	Core Engineering Skills and Application	20	Core	1
L4	ENG4C6	Fundamentals of Mechanical Engineering	20	Core	1
L4	ENG4C9	Engineering Design and CAD	20	Core	2
L4	ENG4D1	Engineering Materials & Processes	20	Core	2
L4	ENG4D4	Practical Engineering Skills	20	Core	2
L5	ENG5C1	Mechanical Design and Analysis	20	Core	1
L5	ENG5D2	Digital Innovation in Engineering	20	Core	1
L5	ENG5C3	Design to Manufacture (CAD/CAM)	20	Core	2
L5	ENG5D3	Manufacturing Technology and Automation	20	Core	2
L5	ENG5D8	Engineering Design Project	40	Core	1 & 2
L6	ENG6C6	Mechanical Modelling & Simulation	20	Core	1
L6	ENG6D4	Continuous Improvement and Lean	20	Core	1
L6	ENG6D5	Mechanical Systems Integration	20	Core	1
L6	ENG6E3	Professional Practice	20	Core	2
L6	ENG6E4	Project	40	Core	1 & 2

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. 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 problems. Some of the knowledge will be at the forefront of the particular subject of study.	☒	☐	☐	☐	☐	☐	☒	☒	C1
2.1	Analyse broadly-defined problems reaching substantiated conclusions.	☒	☐	☐	☐	☒	☐	☐	☐	-
2.2	Analyse complex problems to reach substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles.	☒	☐	☐	☐	☐	☐	☒	☒	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.	☒	☐	☐	☐	☐	☒	☐	☐	-

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.	☒	☐	☐	☐	☐	☐	☒	☒	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 Wrexham University'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.

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 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.

2.5 Assessment Strategy

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	FRAME001_SEP FRAME005_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	SLC/Self-Financed
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	Olivier Durieux
3.10	Date of Approval	30/06/2026
3.11	Date and type of Revision	