Programme Specification

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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) Peirianneg Drydanol gyda Gweithgynhyrchu (Prentisiaeth Gradd) BEng (Hons) Electrical Engineering with Manufacture (Degree Apprenticeship)
1.4	Exit awards and titles	BEng (Ord) Electrical Engineering with Manufacture Diploma of Higher Education in Electrical Engineering with Manufacture 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	Part time | In person
1.11	Language of delivery	English
1.12	Faculty	Faculty of Arts, Computing and Engineering (FACE)

<table>
<tr><th colspan="3">Section 1 – Regulatory Details</th></tr>
<tr><td>1.13</td><td>Subject area</td><td>Engineering</td></tr>
<tr><td>1.14</td><td>HECoS Code</td><td>BEng (Hons) Electrical Engineering with Manufacture 100164</td></tr>
<tr><td>1.15</td><td>Suitable for applicants requiring a Student Visa?</td><td><table><tr><td>Part time</td><td>In person</td><td>No</td></tr></table></td></tr>
<tr><td>1.16</td><td>Is DBS check required on entry?</td><td>No</td></tr>
<tr><td>1.17</td><td>Professional, Statutory or Regulatory Body (PSRB) accreditation</td><td>The engineering programmes have been developed in line with PSRB requirements, including IMechE, IET, & RAeS.
Electrical Engineering with Manufacture *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.</td></tr>
<tr><td>1.18</td><td>Welsh Medium Provision</td><td>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.</td></tr>
<tr><td>1.19</td><td>External reference points</td><td>QAA Subject Benchmark Statement Engineering (2023)
QAA Characteristics Statements
Characteristics Statement Higher Education in Apprenticeships
Higher Education Credit Framework
CQFW
PSRB Accreditation Guidelines</td></tr>
<tr><td>1.20</td><td>Derogation to Academic Regulations</td><td><table><tr><td>Regulation Clause(s) affected</td><td>Derogation Summary</td></tr><tr><td>UG-D3</td><td>Each element of assessment (where there is more than one assessment) requires a minimum mark of 10% below the pass mark (30% for L6).</td></tr><tr><td>E10.4, UG-E5.1</td><td>• 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 &</td></tr></table></td></tr>
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Section 1 – Regulatory Details			
			Processes and Core Engineering Skills and Application).
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) Electrical Engineering with Manufacture is a full-time, three-year Degree Apprenticeship programme designed to develop skilled electrical and electronic engineers who can contribute directly to modern industrial systems. Fully funded and delivered in partnership with employers, the programme combines academic study with on-the-job learning, enabling apprentices to apply new knowledge in real time within their workplace.

Assessment throughout the programme is delivered through an innovative, exam-free approach focusing on coursework, practical tasks, and industry-aligned projects. This structure mirrors real engineering practice and ensures that learning is relevant, applied, and immediately valuable to both learner and employer.

The programme is ideal for those pursuing a career in industrial electrical engineering and supports progression into advanced technical roles, leadership positions, or further academic and professional development.

2.2 Programme Structure and Diagram, Including Delivery Schedule

In Year 1, apprentices develop core knowledge in electrical and electronic engineering through modules such as Engineering Maths, Mechanical Engineering, and Electrical Engineering. Practical understanding is enhanced through Engineering Design and CAD and Engineering Materials & Processes, with technical skill development embedded throughout. The Work Based Learning module ensures continuous application of theory within the apprentice's role, bridging academic content with day-to-day industrial practice.

In Year 2, apprentices build on this foundation with applied modules such as Power, Distribution and System Design, Industrial Automation & PLCs, and Control System Diagnostics. Innovation and digitalisation are explored 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 explore specialist topics including Electrical Modelling & Simulation, Digital Communication Techniques, and Systems Engineering and Management. Professional development is

2.2 Programme Structure and Diagram, Including Delivery Schedule
supported by the Professional Practice module. The year concludes with a substantial individual Project, where apprentices deliver a workplace-aligned solution that demonstrates their technical capability, critical thinking, and readiness to lead within modern industrial environments.

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	ENG4D1	Engineering Materials & Processes	20	Core	3	Yr.1
L4	ENG4D5	Work Based Learning	20	Core	1 - 3	Yr.1
L5	ENG5C7	Electrical Power Engineering	20	Core	1	Yr.2
L5	ENG5D2	Digital Innovation in Engineering	20	Core	1	Yr.2
L5	ENG5C9	Industrial Automation & PLCs	20	Core	2	Yr.2
L5	ENG5D1	Control System Diagnostics	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	ENG6C7	Electrical Modelling & Simulation	20	Core	1	Yr.3
L6	ENG6D2	Digital Communication Techniques	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 electrical engineering 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 electrical engineering 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 in the field of manufacture with an electrical bias	☒	☐	☐	☐	☒	☐	☐	☐	-
2.2	Analyse complex problems to reach substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles in the field of manufacture with an electrical bias	☒	☐	☐	☐	☐	☐	☒	☒	C2
3	Select and apply appropriate computational and analytical techniques to model complex problems, recognising the limitations of the techniques employed.	☒	☐	☐	☐	☐	☐	☒	☒	C3

No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)	Optional Ref (PSRB standards)
4.1	Select and use technical literature and other sources of information to address broadly-defined manufacturing engineering problems.	☒	☐	☐	☐	☐	☒	☐	☐	-
4.2	Select and evaluate technical literature and other sources of information to address complex problems within manufacture.	☒	☐	☐	☐	☐	☐	☒	☒	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

No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)	Optional Ref (PSRB standards)
10	Adopt a holistic and proportionate approach to the mitigation of security risks.	☐	☒	☐	☐	☒	☐	☐	☐	C10
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

No.	Learning Outcome	K	I	S	P	Cert HE (L4)	Dip HE (L5)	Ordinary (L6)	Honours (L6)	Optional Ref (PSRB standards)
17.1	Communicate effectively with technical and non-technical audiences.	☐	☐	☐	☒	☒	☐	☐	☐	-
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.

2.5 Assessment Strategy
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
3.10	Date of Approval	30/06/2026
3.11	Date and type of Revision	