Prifysgol Wrecsam
Wrexham University

PROGRAMME SPECIFICATION

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UG Programme Directory

Section 1 Regulatory Details

Awarding body	Wrexham University
Teaching institution	Wrexham Plas Coch Campus
Final award and programme title (Welsh)	**Engineering (Top Up):** BEng (Anrh) Peirianneg Awyrenegol a Mecanyddol BEng (Anrh) Peirianneg Fodurol BEng (Anrh) Peirianneg Adnewyddadwy a Chynaliadwy BEng (Anrh) Peirianneg Drydanol ac Electronig **Engineering (Top Up) with Pre-Bachelor's:** BEng (Anrh) Peirianneg Awyrenegol a Mecanyddol BEng (Anrh) Peirianneg Fodurol BEng (Anrh) Peirianneg Adnewyddadwy a Chynaliadwy BEng (Anrh) Peirianneg Drydanol ac Electronig
Final award and programme title (English)	**Engineering (Top Up):** BEng (Hons) Aeronautical & Mechanical Engineering BEng (Hons) Automotive Engineering BEng (Hons) Renewable & Sustainable Engineering BEng (Hons) Electrical and Electronic Engineering **Engineering (Top Up) with Pre-Bachelor's:** BEng (Hons) Aeronautical & Mechanical Engineering BEng (Hons) Automotive Engineering BEng (Hons) Renewable & Sustainable Engineering BEng (Hons) Electrical and Electronic Engineering
Exit awards and titles	N/A
Credit requirements	**Engineering (Top Up):** BEng (Hons) Degree – 120 credits at level 6 **Engineering (Top Up) with Pre-Bachelor's:** BEng (Hons) Degree – 200 credits, (120 credits gained at level 6, 60 credits at level 5, and 20 credits at level 4)
Does the programme offer Foundation Year route?	No
Placement/work-based learning opportunities	N/A
Faculty / Department	Faculty of Arts, Computing and Engineering (FACE)
HECoS Code	**Engineering:** Aeronautical and Mechanical Engineering: 100114 Automotive Engineering: 100201 Electrical and Electronic Engineering: 100163 Renewable and Sustainable Engineering: 100175

Intake Points	**Engineering (Top Up):** September Intake **Engineering (Top Up) with Pre-Bachelor's:** August Intake
Mode of Attendance	Full time
Normal Programme Length	1 year
Mode of Study and Location of delivery	Full Time at Wrexham Plas Coch Campus
Language of delivery	English
Welsh Medium Provision	The programmes will be delivered through the medium of English. Students are entitled to submit assessments in the medium of Welsh.
Professional, Statutory or Regulatory Body (PSRB) accreditation	**This information is correct at the time of validation, please refer to the PSRB register for current accreditation status.** The Engineering programmes have been developed in line with PSRB requirements, including IMechE, IET, RAeS & EI. IMechE - www.imeche.org IET - www.theiet.org RAeS - www.aerosociety.com EI - www.energyinst.org
External reference points	QAA Subject Benchmark Statement Engineering (2023) *https://www.qaa.ac.uk/docs/qaa/sbs/sbs-engineering-23.pdf?sfvrsn=7c71a881_4* The Frameworks for Higher Education Qualifications of UK Degree-Awarding Bodies *https://www.qaa.ac.uk/quality-code/qualifications-and-credit-frameworks*
UCAS Code	**Engineering BEng (Hons):** Aeronautical and Mechanical Engineering: BA22 Automotive Engineering: H431 Electrical and Electronic engineering: H600 Renewable and Sustainable Engineering: HH36
Entry Requirements	The University website sets out the approved entry requirements for each programme, including minimum qualifications and English Language requirements **Direct Entry Criteria** For direct entry to the top up provisions, applicants must have achieved a qualification at Level 5 or better in a relevant discipline. Entry to the programme may be gained by students who can present one of the pieces of evidence listed below: a) Have passed a Dip HE in a relevant discipline. b) Have passed a French DUT. c) Have achieved a minimum of 120 ECTS credits in a relevant discipline.

	d) Have passed a Foundation Degree or HND in a cognate discipline. e) Have passed a qualification from an EU or other overseas country equivalent, as defined as equivalent NARIC, to a DipHE or better in a relevant discipline. Such as State Certified Technician (Staatlich geprüfter Techniker) or Mittelland Higher Technical (Höhere Fachschule Technik Mittelland)
Record of Prior (Experiential) learning	All students must meet entry requirement to enrol on the programme.
Is DBS check required on entry?	No
Does the Suitability for Practice Procedure apply to the programme?	No
Derogation to Academic Regulations	A derogation from regulations has been approved for all BEng programmes which means that whilst the pass mark is 40% overall, each element of assessment (where there is more than one assessment) requires a minimum mark of 30%.
Date of Approval	*4th December 2024*
Date and type of Revision	*To be completed by Q&R*

Section 2 Programme Details

Aims of the programme

BEng (Hons) Top-up Programmes (120 Credits)

The primary aim of the top-up programme is to provide students who have completed relevant Level 5 qualifications (such as diplomas or foundation degrees) with an opportunity to complete the final year of a bachelor's degree in engineering. This allows students to enhance their academic qualifications and graduate with an honours degree.

The programme is designed to equip students with advanced technical knowledge and professional skills that are aligned with industry demands. It aims to deepen their understanding of core engineering concepts, such as design, analysis, and problem-solving, preparing them for leadership roles in their respective fields.

By offering a UK qualification, the top-up programme aims to enhance students' employability on an international level. The curriculum focuses on developing the skills necessary to succeed in a global job market, particularly in sectors where engineering professionals are in high demand.

The programme seeks to develop students' ability to critically analyse and solve complex problems using innovative approaches. By emphasising emerging technologies and modern engineering practices, students are encouraged to be creative thinkers and effective problem-solvers in real-world applications.

BEng (Hons) Top-up Programmes with Pre-Bachelor's (200 Credits)

The top-up programme with pre-bachelor's aims to support international students and learners with diverse educational backgrounds who may require additional academic preparation before entering the final year. The integrated pre-bachelor's component (STEM Summer School) allows students to upgrade their study skills, ensuring a smoother transition to Level 6.

This extended version of the top-up programme provides a more holistic academic experience by including credits at Levels 4 and 5, in addition to Level 6. This comprehensive structure helps students build a stronger foundation of knowledge before advancing to more specialised topics in engineering.

By embedding the STEM Summer School into the programme, this version ensures that students' progress seamlessly through Levels 4, 5, and 6, with all credits fully integrated into a single transcript. This reduces reliance on Recognition of Prior Learning (RPL) and offers students a cohesive academic experience with clear credit accumulation

In summary, the top-up programme with pre-bachelor's offers a more robust preparatory phase for students, while the standard top-up programme focuses on completing the final year of study. Both are designed to meet the evolving demands of the engineering industries and to enhance students' global employability.

Distinctive features of the programme

BEng (Hons) Top-up Programmes (120 Credits)

The BEng (Hons) Top-up Programmes offer students a streamlined pathway to complete their bachelor's degree in engineering within one year. A distinctive feature of these programmes is their focused delivery of advanced-level content, enabling students to build upon prior Level 5 qualifications, such as diplomas or foundation degrees. This approach allows students to deepen their expertise in areas like aeronautical & mechanical engineering, automotive, or renewable & sustainable engineering, while gaining industry-relevant skills that align with the demands of the global job market.

Another key feature of the programme is its emphasis on international recognition. With all coursework concentrated at Level 6, the programme ensures compliance with international educational standards. Students benefit from a UK qualification that enhances their employability in various international contexts.

Additionally, the programme's curriculum focuses on emerging technologies and advanced analytical techniques, preparing graduates for the dynamic challenges of their industries. Students are encouraged to engage in critical problem-solving and innovative thinking, which equips them to take on leadership roles in engineering sectors worldwide.

BEng (Hons) Top-up Programmes with Pre-Bachelor's (200 Credits)

The BEng (Hons) Top-up Programmes with Pre-Bachelor's provide a unique and comprehensive learning journey for students who require additional academic preparation before entering Level 6. A key distinctive feature of these programmes is the integration of the STEM Summer School as a pre-bachelor's component, which allows students to strengthen their study skills and gain foundational knowledge. This structure supports international students or those from diverse educational backgrounds, ensuring they are well-prepared for the rigours of the final year.

Unlike the standard top-up programme, this version offers a broader credit structure, with students earning 200 credits across Levels 4, 5, and 6. This extended learning pathway ensures a smooth academic transition, allowing students to accumulate credits seamlessly while building a solid foundation in core engineering concepts.

In summary, these top-up programmes offer a flexible, internationally recognised qualification with strong regional and global engagement. They are designed to meet the academic, professional, and personal needs of students from diverse backgrounds, preparing them for future success in engineering sectors.

Programme Structure Diagram, including delivery schedule

Full-time Delivery BEng (Hons) Engineering Top-up Programmes

BEng (Hons) Aeronautical & Mechanical Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 6	ENG6A5	Mechanical Engineering Modelling & Simulation	20	Core	1
Level 6	ENG687	Aerodynamics	20	Core	1
Level 6	ENG6A7	Aircraft Design & Flight Stability	20	Core	1
Level 6	ENG6A8	Professional Engineering	20	Core	2
Level 6	ENG6AG	Project	40	Core	1 & 2

BEng (Hons) Automotive Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 6	ENG6A5	Mechanical Engineering Modelling & Simulation	20	Core	1
Level 6	ENG6B1	Automotive Dynamics	20	Core	1
Level 6	ENG6B2	Modern Automotive Powertrains	20	Core	1
Level 6	ENG6A8	Professional Engineering	20	Core	2
Level 6	ENG6AG	Project	40	Core	1 & 2

BEng (Hons) Renewable & Sustainable Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 6	ENG6A5	Mechanical Engineering Modelling & Simulation	20	Core	1
Level 6	ENG6B7	Smart Grids, Storage, and Energy Mix	20	Core	1
Level 6	ENG6B8	Energy Saving, Low Carbon, and Recycling Systems	20	Core	1
Level 6	ENG6A8	Professional Engineering	20	Core	2
Level 6	ENG6AG	Project	40	Core	1 & 2

BEng (Hons) Electrical and Electronic Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 6	ENG6C2	Digital Signal Processing	20	Core	1
Level 6	ENG60D	Electronic Design and Testing	20	Core	1
Level 6	ENG6B9	Power Electronics and Electrical Machines	20	Core	1
Level 6	ENG6A8	Professional Engineering	20	Core	2
Level 6	ENG6AG	Project	40	Core	1 & 2

Full-time Delivery BEng (Hons) Engineering Top-up Programmes with Pre-Bachelor's

BEng (Hons) Aeronautical & Mechanical Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	ENG6A5	Mechanical Engineering Modelling & Simulation	20	Core	1
Level 6	ENG687	Aerodynamics	20	Core	1
Level 6	ENG6A7	Aircraft Design & Flight Stability	20	Core	1
Level 6	ENG6A8	Professional Engineering	20	Core	2
Level 6	ENG6AG	Project	40	Core	1 & 2

BEng (Hons) Automotive Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	ENG6A5	Mechanical Engineering Modelling & Simulation	20	Core	1
Level 6	ENG6B1	Automotive Dynamics	20	Core	1
Level 6	ENG6B2	Modern Automotive Powertrains	20	Core	1
Level 6	ENG6A8	Professional Engineering	20	Core	2

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 6	ENG6AG	Project	40	Core	1 & 2

BEng (Hons) Renewable & Sustainable Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	ENG6A5	Mechanical Engineering Modelling & Simulation	20	Core	1
Level 6	ENG6B7	Smart Grids, Storage, and Energy Mix	20	Core	1
Level 6	ENG6B8	Energy Saving, Low Carbon, and Recycling Systems	20	Core	1
Level 6	ENG6A8	Professional Engineering	20	Core	2
Level 6	ENG6AG	Project	40	Core	1 & 2

BEng (Hons) Electrical and Electronic Engineering

Level	Module Code	Module Title	Credit Value	Core/Option	Delivery (i.e. semester 1,2)
Level 4	LAN474	English for STEM	20	Core	3
Level 5	ENG5B7	Analytical Techniques	20	Core	3
Level 5	ENG5B8	Emerging Technologies	20	Core	3
Level 5	ENG5B9	Research Methodologies	20	Core	3
Level 6	ENG6C2	Digital Signal Processing	20	Core	1
Level 6	ENG60D	Electronic Design and Testing	20	Core	1
Level 6	ENG6B9	Power Electronics and Electrical Machines	20	Core	1
Level 6	ENG6A8	Professional Engineering	20	Core	2
Level 6	ENG6AG	Project	40	Core	1 & 2

BEng (Hons) Engineering Top-Up (Provision) – Programme Structure & Delivery

	BEng (Hons) Aeronautical & Mechanical Engineering	BEng (Hons) Automotive Engineering	BEng (Hons) Renewable and Sustainable Engineering	BEng (Hons) Electrical and Electronic Engineering
S1	**ENG6A5** Mechanical Engineering Modelling & Simulation			**ENG6C2** Digital Signal Processing
S1	**ENG687** Aerodynamics	**ENG6B1** Automotive Dynamics	**ENG6B7** Smart Grids, Storage, and Energy Mix	**ENG60D** Electronic Design and Testing
S1	**ENG6A7** Aircraft Design & Flight Stability	**ENG6B2** Modern Automotive Powertrains	**ENG6B8** Energy Saving, Low Carbon, and Recycling Systems	**ENG6B9** Power Electronics and Electrical Machines
S2	**ENG6A8** Professional Engineering			
S1-2	**ENG6AG** Project (40 Credits)			

BEng (Hons) Engineering Top-Up with Pre-Bachelors (Provision) – Programme Structure & Delivery

	BEng (Hons) Aeronautical & Mechanical Engineering	BEng (Hons) Automotive Engineering	BEng (Hons) Renewable and Sustainable Engineering	BEng (Hons) Electrical and Electronic Engineering
S3	**LAN474** English for STEM			
	ENG5B7 Analytical Techniques			
	ENG5B8 Emerging Technologies			
	ENG5B8 Research Methodologies			
S1	**ENG6A5** Mechanical Engineering Modelling & Simulation			**ENG6C2** Digital Signal Processing
	ENG687 Aerodynamics	**ENG6B1** Automotive Dynamics	**ENG6B7** Smart Grids, Storage, and Energy Mix	**ENG60D** Electronic Design and Testing
	ENG6A7 Aircraft Design & Flight Stability	**ENG6B2** Modern Automotive Powertrains	**ENG6B8** Energy Saving, Low Carbon, and Recycling Systems	**ENG6B9** Power Electronics and Electrical Machines
S2	**ENG6A8** Professional Engineering			
S1-2	**ENG6AG** Project (40 Credits)			

Programme Learning Outcomes

Full-time Delivery BEng (Hons) Engineering Top-up Programmes

BEng (Hons) Aeronautical & Mechanical Engineering

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
1	Maintain and extend critical analysis of analytical techniques, and the general and specialist engineering knowledge and critical understanding of complex engineering systems.	☒	☐	☐	☐	☒
2	Critically evaluate current issues and prospects in technology advances in the discipline.	☒	☐	☐	☐	☒
3	Design solutions for complex problems that meet a combination of societal, user, business and customer need as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental, and commercial matters, codes of practice and industry standards.	☒	☐	☐	☐	☒
4	Critically analyse and evaluate modern aircraft design and analysis technologies, and knowledge of aerodynamics, flight mechanics, flight stability and control, and structural vibration analysis.	☒	☐	☐	☐	☒
5	Identify a project, critically evaluate the requirements of the project, and plan the work and resources needed to enable effective implementation of an engineering task or project with consideration for cost, quality, safety, and environmental impact.	☐	☒	☐	☐	☒
6	Identify the appropriate investigations, apply an integrated or systems approach to the solution of complex problems, and manage (organise, direct and control), programme or schedule, budget and resource elements of engineering tasks or projects.	☐	☒	☐	☐	☒
7	Critically analyse and evaluate complex problems to reach substantiated conclusions. Select and apply appropriate computational and analytical techniques to model complex problems, recognising the limitations of the techniques employed.	☐	☒	☐	☐	☒
8	Assess, interpret, and implement decisions with an awareness of technical, economic, and commercial implications. Critically evaluate the environmental and societal impact of solutions to complex problems and minimise adverse impacts.	☐	☒	☐	☐	☒
9	Conduct and critically analyse experiments, adapting experimental procedures to novel situations, if necessary, critically analysing experimental data in detail, and drawing comprehensive conclusions.	☐	☐	☒	☐	☒
10	Design, construct, test and critically evaluate devices and systems to meet given performance criteria, including the use of computer-based tools.	☐	☐	☒	☐	☒
11	Critically analyse and evaluate processes, techniques or systems relating to unfamiliar problems with an awareness of quality issues and their application to continuous improvement.	☐	☐	☒	☐	☒
12	Deal with the issues of aircraft structural vibration, dynamic and control design, and analysis systematically and creatively, and make sound engineering judgements.	☐	☐	☒	☐	☒

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
13	Propose, plan, undertake and report a self-directed individual programme of investigation, design, and implementation.	☐	☐	☐	☒	☒
14	Use a risk management process to identify, critically evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.	☐	☐	☐	☒	☒
15	Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.	☐	☐	☐	☒	☒
16	Use information technology competently to source information, to prepare reports, to model performance using specialised software packages.	☐	☐	☐	☒	☒
17	Evaluate and reflect on own performance and self- management. Plan and record self-learning and development as the foundation for lifelong learning/CPD.	☐	☐	☐	☒	☒
18	Interpret the role of the engineer as a manager of themselves and of others, ensuring the highest level of professional and ethical conduct and acting within the legal framework governing engineering activities.	☐	☐	☐	☒	☒

BEng (Hons) Automotive Engineering

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
1	Maintain and extend critical analysis of analytical techniques, and the general and specialist engineering knowledge and critical understanding of complex engineering systems.	☒	☐	☐	☐	☒
2	Critically evaluate current issues and prospects in technology advances in the discipline.	☒	☐	☐	☐	☒
3	Design solutions for complex problems that meet a combination of societal, user, business and customer need as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental, and commercial matters, codes of practice and industry standards.	☒	☐	☐	☐	☒
4	Critically evaluate automotive engineering and be able to solve complex problems pertaining to them.	☒	☐	☐	☐	☒
5	Identify a project, critically evaluate the requirements of the project, and plan the work and resources needed to enable effective implementation of an engineering task or project with consideration for cost, quality, safety, and environmental impact.	☐	☒	☐	☐	☒
6	Identify the appropriate investigations, apply an integrated or systems approach to the solution of complex problems, and manage (organise, direct and control), programme or schedule, budget and resource elements of engineering tasks or projects.	☐	☒	☐	☐	☒
7	Critically analyse and evaluate complex problems to reach substantiated conclusions. Select and apply appropriate computational and analytical techniques to model complex problems, recognising the limitations of the techniques employed.	☐	☒	☐	☐	☒

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
8	Assess, interpret, and implement decisions with an awareness of technical, economic, and commercial implications. Critically evaluate the environmental and societal impact of solutions to complex problems and minimise adverse impacts.	☐	☒	☐	☐	☒
9	Conduct and critically analyse experiments, adapting experimental procedures to novel situations, if necessary, critically analysing experimental data in detail, and drawing comprehensive conclusions.	☐	☐	☒	☐	☒
10	Design, construct, test and critically evaluate devices and systems to meet given performance criteria, including the use of computer-based tools.	☐	☐	☒	☐	☒
11	Critically analyse and evaluate processes, techniques or systems relating to unfamiliar problems with an awareness of quality issues and their application to continuous improvement.	☐	☐	☒	☐	☒
12	Be able to deal with the complex evaluation and to find solutions to an automotive specific field, using various tools and techniques, including numerical simulation.	☐	☐	☒	☐	☒
13	Propose, plan, undertake and report a self-directed individual programme of investigation, design, and implementation.	☐	☐	☐	☒	☒
14	Use a risk management process to identify, critically evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.	☐	☐	☐	☒	☒
15	Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.	☐	☐	☐	☒	☒
16	Use information technology competently to source information, to prepare reports, to model performance using specialised software packages.	☐	☐	☐	☒	☒
17	Evaluate and reflect on own performance and self- management. Plan and record self-learning and development as the foundation for lifelong learning/CPD.	☐	☐	☐	☒	☒
18	Interpret the role of the engineer as a manager of themselves and of others, ensuring the highest level of professional and ethical conduct and acting within the legal framework governing engineering activities.	☐	☐	☐	☒	☒

BEng (Hons) Renewable & Sustainable Engineering

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
1	Maintain and extend critical analysis of analytical techniques, and the general and specialist engineering knowledge and critical understanding of complex engineering systems.	☒	☐	☐	☐	☒
2	Critically evaluate current issues and prospects in technology advances in the discipline.	☒	☐	☐	☐	☒

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
3	Design solutions for complex problems that meet a combination of societal, user, business and customer need as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental, and commercial matters, codes of practice and industry standards.	☒	☐	☐	☐	☒
4	Critically evaluate renewable energies and strategies to solve complex problems pertaining to them and to analyse and critically apprise current and emerging technologies.	☒	☐	☐	☐	☒
5	Identify a project, critically evaluate the requirements of the project, and plan the work and resources needed to enable effective implementation of an engineering task or project with consideration for cost, quality, safety, and environmental impact.	☐	☒	☐	☐	☒
6	Identify the appropriate investigations, apply an integrated or systems approach to the solution of complex problems, and manage (organise, direct and control), programme or schedule, budget and resource elements of engineering tasks or projects.	☐	☒	☐	☐	☒
7	Critically analyse and evaluate complex problems to reach substantiated conclusions. Select and apply appropriate computational and analytical techniques to model complex problems, recognising the limitations of the techniques employed.	☐	☒	☐	☐	☒
8	Assess, interpret, and implement decisions with an awareness of technical, economic, and commercial implications. Critically evaluate the environmental and societal impact of solutions to complex problems and minimise adverse impacts.	☐	☒	☐	☐	☒
9	Conduct and critically analyse experiments, adapting experimental procedures to novel situations, if necessary, critically analysing experimental data in detail, and drawing comprehensive conclusions.	☐	☐	☒	☐	☒
10	Design, construct, test and critically evaluate devices and systems to meet given performance criteria, including the use of computer-based tools.	☐	☐	☒	☐	☒
11	Critically analyse and evaluate processes, techniques or systems relating to unfamiliar problems with an awareness of quality issues and their application to continuous improvement.	☐	☐	☒	☐	☒
12	Be able to critically analyse climate change and the way humans contribute to it with the use of fossil fuels, and to analyse how various current energy systems work and the need for effective energy storage and carbon free solutions.	☐	☐	☒	☐	☒
13	Propose, plan, undertake and report a self-directed individual programme of investigation, design, and implementation.	☐	☐	☐	☒	☒
14	Use a risk management process to identify, critically evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.	☐	☐	☐	☒	☒
15	Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.	☐	☐	☐	☒	☒

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
16	Use information technology competently to source information, to prepare reports, to model performance using specialised software packages.	☐	☐	☐	☒	☒
17	Evaluate and reflect on own performance and self- management. Plan and record self-learning and development as the foundation for lifelong learning/CPD.	☐	☐	☐	☒	☒
18	Interpret the role of the engineer as a manager of themselves and of others, ensuring the highest level of professional and ethical conduct and acting within the legal framework governing engineering activities.	☐	☐	☐	☒	☒

BEng (Hons) Electrical and Electronic Engineering

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
1	Maintain and extend critical analysis of analytical techniques, and the general and specialist engineering knowledge and critical understanding of complex engineering systems.	☒	☐	☐	☐	☒
2	Critically evaluate current issues and prospects in technology advances in the discipline.	☒	☐	☐	☐	☒
3	Design solutions for complex problems that meet a combination of societal, user, business and customer need as appropriate. This will involve consideration of applicable health & safety, diversity, inclusion, cultural, societal, environmental, and commercial matters, codes of practice and industry standards.	☒	☐	☐	☐	☒
4	Critically evaluate electrical and electronic engineering in the context of the design, analysis, and testing of electrical and electronic circuits and systems.	☒	☐	☐	☐	☒
5	Identify a project, critically evaluate the requirements of the project, and plan the work and resources needed to enable effective implementation of an engineering task or project with consideration for cost, quality, safety, and environmental impact.	☐	☒	☐	☐	☒
6	Identify the appropriate investigations, apply an integrated or systems approach to the solution of complex problems, and manage (organise, direct and control), programme or schedule, budget and resource elements of engineering tasks or projects.	☐	☒	☐	☐	☒
7	Critically analyse and evaluate complex problems to reach substantiated conclusions. Select and apply appropriate computational and analytical techniques to model complex problems, recognising the limitations of the techniques employed.	☐	☒	☐	☐	☒
8	Assess, interpret, and implement decisions with an awareness of technical, economic, and commercial implications. Critically evaluate the environmental and societal impact of solutions to complex problems and minimise adverse impacts.	☐	☒	☐	☐	☒
9	Conduct and critically analyse experiments, adapting experimental procedures to novel situations, if necessary, critically analysing experimental data in detail, and drawing comprehensive conclusions.	☐	☐	☒	☐	☒

No.	Learning Outcome	K	I	S	P	Level 6 (Hons)
10	Design, construct, test and critically evaluate devices and systems to meet given performance criteria, including the use of computer-based tools.	☐	☐	☒	☐	☒
11	Critically analyse and evaluate processes, techniques or systems relating to unfamiliar problems with an awareness of quality issues and their application to continuous improvement.	☐	☐	☒	☐	☒
12	Be able to deal with the complex evaluation and find solutions to electrical and electronic engineering problems using various tools and techniques, including numerical simulation.	☐	☐	☒	☐	☒
13	Propose, plan, undertake and report a self-directed individual programme of investigation, design, and implementation.	☐	☐	☐	☒	☒
14	Use a risk management process to identify, critically evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.	☐	☐	☐	☒	☒
15	Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used.	☐	☐	☐	☒	☒
16	Use information technology competently to source information, to prepare reports, to model performance using specialised software packages.	☐	☐	☐	☒	☒
17	Evaluate and reflect on own performance and self- management. Plan and record self-learning and development as the foundation for lifelong learning/CPD.	☐	☐	☐	☒	☒
18	Interpret the role of the engineer as a manager of themselves and of others, ensuring the highest level of professional and ethical conduct and acting within the legal framework governing engineering activities.	☐	☐	☐	☒	☒

Full-time Delivery BEng (Hons) Top-up Programmes with Pre-Bachelor's

Students enrolled onto the BEng (Hons) Top-up Programmes with Pre-Bachelor's entry will attain the following additional learning outcomes:

No.	Learning Outcome	K	I	S	P	Level 4	Level 5
1	Deploy retention and recall strategies to activate a wide range of core STEM vocabulary, common collocations, and idiomatic language to effectively negotiate meaning and mediate communication in the STEM context.	☒	☐	☐	☐	☒	☐
2	Develop sound application of analytical techniques, and general and specialist engineering knowledge and understanding	☐	☐	☒	☐	☐	☒
3	Analyse information from a range of sources to make an argued case and enhance ongoing practice.	☐	☐	☒	☐	☐	☒

No.	Learning Outcome	K	I	S	P	Level 4	Level 5
4	Assess emergent technologies that have been deployed in the respective field and evaluate various aspects of emerging technologies and their application and impact in the short, medium and long-term future	☐	☐	☒	☐	☐	☒

Learning and teaching strategy

The BEng/BSc provisions have shared and subject specific modules, respectively, allowing students to collaborate, engage, and explore their respective chosen programme. The philosophy of the programme reflects and develops the University's strategic mission and aims. The learning and teaching strategy for the programmes accords fully with Wrexham University's Active Learning Framework (ALF) and Strategy for Supporting Student Learning and Achievement (SSSLA) and has been informed by the QAA Subject Benchmark statement for Engineering (2023).

The modules are taught through a combination of lectures, seminars, and workshops. An active and inclusive approach is used to engage learners in the topics and will involve individual, group work and flipped learning experiences aligned to the university's Active Learning Framework (ALF). The approach offers students a flexible and adaptive learning experience that can accommodate a range of options that includes both on campus learning and digital resources and mechanisms as a learning blend, as appropriate. This may include synchronous and asynchronous learning.

The Moodle VLE and other on-line materials and resources will be available to support learning. ALF offers a balance between the classroom elements and digitally enabled activity incorporating flexible and accessible resources and flexible and accessible feedback to support learning.

The approach taken towards teaching and learning is based on ALF of learning designed to enable and maximise the abilities of the students to work in a wide variety of fields and disciplines within engineering. Thus, they are enabled to become independent, autonomous, and reflective whilst also developing collaborative, strategic and professional capacities. They will develop and demonstrate critical analytical skills and problem-solving capabilities and the ability to be creative, proactive, and innovative. To this end, a variety of teaching and learning methods will be provided.

The Wrexham University Skills Framework

At Wrexham University we aim to help students develop and enhance key employability skills and capabilities during their study. There are three key areas with different attributes, attitudes and skillsets and the aim is to help students have the opportunity to enhance and develop skills such as resilience, adaptability, confidence, team working, emotional intelligence and communication, creativity and acting ethically and sustainably. Programmes are designed to enable students to develop and enhance these skills via module content, module learning outcomes and assessment opportunities. Each module will help provide different opportunities for developing and enhancing these capabilities.

The programme has been designed using an Employability Level Descriptor in collaboration with the Careers and Employability team. The Employability Level Descriptor document is reviewed as part of validation and following approval will be published in the student programme handbook.

The Careers and Employability team are available to provide additional careers education activities for all programmes as well as individualised information, advice and guidance. Learners gain access to self-directed learning resources by logging into our careers portal. Here students can book professional careers guidance appointments and make employment and volunteering applications and learn to build and develop their CV and applications.

Assessment strategy

The programme team are committed to delivering an assessment strategy which is in line with SSSLA and ALF and reflects the requirements of the QAA Subject Benchmark Statement respectively.

A wide range of assessment methods have been adopted in the programmes to meet diverse learning styles and enable the students to meet modular and programme requirements, through either individual or group assessment, and students will be informed as to whether assessment is of a diagnostic, formative, or summative nature. The assessment methods used reflect the needs of the student group and allows for the knowledge and learning outcomes of the programme to be tested as well as allowing for the development and assessment of practical and transferable skills.

There is a commitment to enable students to focus on their own learning needs and to use assessment as a means for evaluating their own practice. Professional body requirements have been integrated into module assessment to foster developmental progression on the programmes, with cognisance paid to how these assessments may impact upon the student's final grade achievement. Where assessed group work is undertaken, students will be expected, through the production of meeting notes and action plans, to demonstrate that they have contributed equally to the task. This element of personal contribution will determine the individual's overall module assessment. i.e., not all students within a group should expect the same mark.

Assessment Methods

Formative assessment is essential to learning in its aim is to give appropriate and timely feedback to students on their learning, and to help them to improve their future work.

Assessment methods will be appropriate for the outcome being assessed. In addition to formal examination, some other forms of the assessments are used.

In-Class Tests

In-class tests will comprise distinct types of 'unseen' assessment, such as an 'unseen' paper, or Moodle quiz/questions sat in a controlled environment. An exception to the unseen element is when a case study is required for reference. In-class tests will take place in an appropriate time after the corresponding module contents have been delivered.

Indicative feedback of results will be provided to students within three weeks of the submission date. Official results will be provided in the form of a transcript after assessment boards have been convened.

Assignment

This is a single task given to the student in the form of a 'brief' defining the assignment requirements at or near the beginning of the module. This may require the student to carry out investigations and literature searches in their own time and under their own initiative or it may require independent problem solving based on work covered in the lectures/tutorials.

The work is normally required in the form of a formal report submitted by a given deadline. Sometimes a presentation, either individually or as a group forms part of the assessment.

Portfolio

This is a term referring to a collection of small, and diverse, exercises whose individual marks are brought together in a single folder to form a single in-course mark. Examples are where a series of laboratory exercises form part of the module. Feedback is given after each exercise (called formative assessment) so that a student is aware of progress made on an on-going basis.

Course work

For some modules, a course work for case study might be the most appropriate form of assessment whereby the student would investigate a particular scenario, software programme or an instrumentation system. They would analyse the 'subject' and convey their critical opinions; this could be verbally (oral presentation) or a short report. Frequently the student is

given three or four scenarios to consider simultaneously, thereby enabling comparison of advantages and disadvantages.

Practical Skills

Assessment of practical skills is covered entirely within practical exercises and the associated reporting, particularly project-based modules. In these modules, practical demonstrations are required as part of a presentation.

Grading

Assessment will be graded using the suggested criteria grid detailed in line with SSSLA, the criteria will be contextualised for each assessment. All work will be assessed by tutors at Wrexham University. Students will receive written feedback within the target times set out by Wrexham University.

Plagiarism

Where practicable, Turnitin will be used a tool to support students to develop their academic writing style as well as to detect plagiarism or collaboration.

Double Marking and Moderation

All module assessments will be internally verified with a sample being moderated by the external examiner in accordance with Wrexham University's Regulatory Requirements.

Extenuating Circumstances and Deadlines for Submission

Students will be informed of the penalties which apply for non-submission. Students will be made aware of the procedure relating to extenuating circumstances and will be encouraged to work closely with their tutors should they require support and guidance on this matter.

Feedback to Students

Feedback, both formal and informal is given to students throughout the programme. Feedback may be verbal, given during tutorials or lab exercises, where both student and lecturer can identify problems and steps can be taken to improve future work. Feedback is presented as part of a continuous assessment plan, such as the development of a portfolio; this may be verbal or written feedback, or it may be formal written feedback, as in the case of assignment marking with comments.

It should be noted that much of the feedback, not only identifies problems along with suitable guidance, but also highlights the student's achievements. This approach usually works better than simply "must try harder."

In some cases, 'progressive feedback' is the most suitable approach, particularly when there are many problems with an individual student's work. i.e., do not try to mend everything all at once, as this can lead to the student becoming demoralised, but rather work on the most important aspects first, whilst introducing other improvements later.

Quality Management

All provision is expected to comply with the University processes for quality assurance, the QAA Quality Code and any specific PSRB requirements to ensure the quality of the learning and teaching on the programme. The University uses the following mechanisms to help evaluate, enhance and review programmes delivery:

- Student Evaluation of Module Questionnaire
- Student Voice Forum
- Individual student feedback
- Student representatives
- Continuous Programme Monitoring and Enhancement reports
- Periodic review and re-validation process

- Internal Moderation and External Examining
- External Examiner Annual Reports
- PSRB requirements and accreditation activities
- National Student Survey (NSS)

Support for Students

The University has a range of departments that offer support for students such as:

- Library & IT Resources
- Inclusion Services
- Careers Service
- Chaplaincy
- Counselling & Wellbeing
- Student Funding and Welfare
- Student Administration

Please access the University's website at www.wrexham.ac.uk to find out more about the Departments.

The Student Union offers support for students, please access their website at to find out more. https://www.wrexhamglyndwrsu.org.uk/

All students at Wrexham University are allocated a Personal Tutor whose main responsibility is to act as the first point of contact for their personal students and to provide pastoral and academic support throughout their studies at the University.

Equality and Diversity

Wrexham University is committed to providing access to all students and promotes equal opportunities in compliance with the Equality Act 2010 legislation. This programme complies fully with the University's Equality and Diversity Policy, ensuring that everyone who has the potential to achieve in higher education is given the chance to do so. Please click on the following link for more information about equality and diversity