OFFICE USE ONLY	
Date of validation event:	13 August 2020
Date of approval by Academic Board:	24 September 2020
Approved Validation Period:	*5 years*
Date and type of revision:	*Enter the date of any subsequent revisions* *April 2024 APSC approval for the addition of Wrexham as a delivery site and to add English as a delivery language for L6*

PART TWO PROGRAMME SPECIFICATION

BEng (Hons) Mechatronics Engineering

1	**Awarding body**
	Wrexham University
2	**Programme delivered by**
	Wrexham University and Dalian Polytechnic University
3	**Location of delivery**
	Dalian Polytechnic University
4	**Faculty/Department**
	Wrexham University - Faculty of Arts, Science and Technology Dalian Polytechnic University Mechanical Engineering & Automation School
5	**Exit awards available**
	N/A
6	**Professional, Statutory or Regulatory Body (PSRB) accreditation**
	N/A
7	**Accreditation available**
	No
8	**Please add details of any conditions that may affect accreditation (e.g. is it dependent on choices made by a student?)**
	N/A
9	JACS3 / HECoS **codes**
	H110/100184
10	UCAS **code**
	N/A
11	**Relevant QAA subject benchmark statement/s**
	QAA Subject Benchmark Statement Engineering (2019) https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-engineering.pdf?sfvrsn=1f2c881_4

12 **Other external and internal reference points used to inform the programme outcomes**

Engineering Council, UK-SPEC third edition (2014)
Engineering Council, UK-SPEC document "The Accreditation of Higher Education Programmes" third edition
Sector Skills Council for Science, Engineering and Manufacturing Technologies (SEMTA)

13 **Mode of study**

Full time

14 **Normal length of study** for each mode of study
Note that students are not eligible for funding for a postgraduate qualification if the duration of the part time route is more than double the duration of the full time route.

'4+0' pathway: 4 years full time at Dalian Polytechnic University in China

'3+1' pathway: 3 years full time at Dalian Polytechnic University (for level 4 and 5 study) plus 1 year full time at Wrexham University in UK (for final year level 6 study)

15 **Maximum length of study**

6 Years

16 **Language of study**

English & Chinese

17 **Criteria for admission to the programme**

Standard entry criteria

Candidate is required to pass the China national matriculation examination. (Gaokao).

Students desiring to study their final year at Wrexham must meet both progression requirements for level 6 and the University English language requirements for international students.

DBS Requirements

N/A

Non-standard entry criteria and programme specific requirements

N/A

18 **Recognition of Prior (Experiential) Learning**

N/A

Programme specific restrictions

N/A

19 Aims of the programme

The key aim of the programmes is to develop the intellectual and application skills of individuals by means of personal management, knowledge acquisition, problem analysis, deductive skills, synthesis and evaluation of solutions, and including an awareness of social and environmental implications, in preparation for:

- A career as a professional engineer in Industry;
- A management role in industry;
- Life-long learning and an appreciation of the value of education in continuing professional development.

Thus, provides the breadth of learning, skills and attitudes for graduates to meet the future needs of a rapidly changing technology and business environment.

20 Distinctive features of the programme

The programme will enable students to take a Wrexham University degree alongside a Dalian Polytechnic University degree while studying in China. Students studying in China will receive a quality education, delivered by Wrexham University and Dalian Polytechnic University academics.

The individuals will master both English and Chinese, associated with the strong professional competence, which can promote the competitiveness advantage in the job searching.

To ensure that no students are disadvantaged with regards to the programme being dual language, the first year of study will involve intensive English lessons in the first year of study. Students will have to pass an English assessment which will be set by the programme team before they progress to the modules taught in English in the second year of study (see section 22, programme structure diagram).

21 Programme structure narrative

The programmes will be delivered on a full time basis, with students being available for lectures across five days each week. The three levels (level 4, level 5 and level 6) of the programme will be delivered in 4 academic years in Dalian Polytechnic University in China for full-time students, or the first three academic years to cover the level 4 and level 5 of the programme will be delivered in Dalian Polytechnic University in China and the final year (the 4th academic year) to cover level 6 of the programme in Wrexham University in UK. Each level consists of 120 credits, made up of 20 credit modules on the whole, with the exceptions of the level six individual engineering projects which are of 40 credits.

22 Programme structure diagram

The following diagram shows all modules of the programme. This structure facilitates the streamlined and efficient delivery of common topics/modules whilst enabling the specialisms of the programmes to be delivered to the relevant groups.

In this section, a table indicating staff, module credits, core/option etc. is shown.

Level 4

Mod title	Electrical Engineering	Mod title	Engineering Materials and Manufacturing	Mod title	Engineering Design Practice and Professional Development
Module code	ENG4AL	Module code	ENG4AG	Module code	ENG4AF
Credit value	20	Credit value	20	Credit value	20
Core/Option	Core	Core/Option	Core	Core/Option	Core
Delivery year & semester	Year 2; Semester 1		Year 2; Semester 1,		Year 1; Semester 1 and 2, Year 2; Semester 1
Mod leader	Dr Sultan Shoaib	Mod leader	Dr Nataliia Luhyna	Mod leader	Tongyan Liu
Language of Delivery / Assessment	English		English		Chinese
Mod title	Engineering Mathematics	Mod title	Mechanical Engineering	Mod title	Electronics Technology
Module code	ENG4AH	Module code	ENG4AJ	Module code	ENG4AK
Credit value	20	Credit value	20	Credit value	20
Core/Option	Core	Core/Option	Core	Core/Option	Core
Delivery year & semester	Year 1; Semester 1, 2		Year 1; Semester 2, Year 2; Semester 1		Year 2; Semester 2
Mod leader	Shuang Liu	Mod leader	Wei Qi	Mod leader	Andrew Sharp
Language of Delivery / Assessment	Chinese		Chinese		English

Level 5					
Mod title	Instrumentation and Control	Mod title	Industrial Automation and PLCs	Mod title	Structures Analysis and Finite Element Analysis
Module code	ENG5AQ	Module code	ENG5AX	Module code	ENG5AT
Credit value	20	Credit value	20	Credit value	20
Core/Option	Core	Core/Option	Core	Core/Option	Core
Delivery year & semester	Year 3; Semester 2		Year 3; Semester 2		Year 2; Semester 1, 2
Mod leader	Dr Zheng Chen	Mod leader	Dr Zheng Chen	Mod leader	Xiangdong He
Language of Delivery / Assessment	English		English		Chinese

Mod title	Further Engineering Mathematics	Mod title	Industrial Electronics and Applications	Mod title	Mechanical and Manufacturing Systems and Business Management
Module code	ENG5AW	Module code	ENG5AP	Module code	ENG5AR
Credit value	20	Credit value	20	Credit value	20
Core/Option	Core	Core/Option	Core	Core/Option	Core
Delivery (year & semester)	Year 2; Semester 1, 2		Year 3; Semester 1		Year 3; Semester 1
Mod leader	Chao Liu	Mod leader	Dr Sultan Shoaib	Mod leader	Man Wang
Language of Delivery / Assessment	Chinese		English		Chinese

Level 6					
Mod title	Mechatronics Applications	Mod title	Manufacturing and Production Systems	Mod title	Power Electronics and Electric Drives
Module code	ENG6AK	Module code	ENG6AJ	Module code	ENG6AL
Credit value	20	Credit value	20	Credit value	20
Core/Option	Core	Core/Option	Core	Core/Option	Core
Delivery year & semester	Year 4; Semester 1		Year 4; Semester 1		Year 4; Semester 1
Mod leader	Dr Mobayode Akinsolu	Mod leader	Ollivier Durieux	Mod leader	Dr Yuriy Vagapov
Language of Delivery / Assessment	English		English		English
Mod title	Industry 4.0	Mod title	Maintenance & Safety Systems	Mod title	Further Control Systems Engineering
Module code	ENG6AQ	Module code	ENG6AH	Module code	ENG6AM
Credit value	20	Credit value	20	Credit value	20
Core/Option	Option	Core/Option	Option	Core/Option	Option
Delivery year & semester	Year 3; Semester 2 Year 4; Semester 1		Year 3; Semester 2, Year 4; Semester 1		Year 3; Semester 2 Year 4; Semester 1
Mod leader	Dr Teng Gao	Mod leader	Dr Ling Sun	Mod leader	Dr Jinshi Lu
Language of Delivery / Assessment	Chinese / English		Chinese / English		Chinese / English
Mod title	Individual Engineering Project				
Module code	ENG6AP				

Credit value	40				
Core/Option	Core				
Delivery(year & semester	Year 4; Semester 2				
Mod leader	Dr Teng Gao				
Language of Delivery / Assessment	Chinese / English				

Please also note that the delivery sequence noted above is indicative and may require further adjustment, due to the current COVID 19 situation, as will be subject to availability of Wrexham staff to travel to China to deliver specific modules and therefore the delivery sequence may be subject to change (in agreement between both parties).

23 Intended learning outcomes of the programme

On completion of Level 4/5/6, students will be able to:

Knowledge and understanding			
	Level 4	Level 5	Level 6 Honours Degree
A1	Develop an understanding of mathematical concepts or principles relevant to engineering.	Apply mathematical concepts or principles relevant to engineering problems.	Model and analyse complex engineering systems using appropriate mathematical methods, while recognising the limitations of such analysis.
A2	Identify and explain scientific principles relevant to engineering.	Develop scientific principles and demonstrate an understanding of relevant applications within engineering.	Demonstrate a wide knowledge and a comprehensive understanding of complex engineering systems and the ability to analyse and synthesise such engineering principles and systems.
A3	Illustrate the design and develop process for an engineering system and explain the applied methodology.	Investigate the problem behind the design process and the applied methodology.	Apply advanced problem solving skills and technical knowledge to all aspects of the design process and methodology. Demonstrate an awareness of operational, environmental and ethical implications, and the need for sustainable development.
A4	Develop an awareness of current technologies and their uses within engineering.	Critically appraise current and future technologies and develop an awareness of the sustainability implications.	Display a critical awareness of current issues and future prospects at the forefront of the discipline.
A5	Identify and describe components and theory used in modern and emerging mechatronics systems in industry.	Apply a comprehensive knowledge of industrial process systems to validate new system architecture.	Demonstrate an ability to critically appraise existing controlled processes, make judgements, and propose and formulate a new mechatronics system through a programme of self-managed learning.

Intellectual skills			
	Level 4	Level 5	Level 6 Honours Degree
B1	Identify problems and potential causes and effects	Identify and analyse problems and use diagnostic methods to recognise causes and achieve satisfactory solutions	Innovate in solving novel and challenging problems and be aware of the limitations of the solutions.
B2	Identify, organise and use resources to complete tasks safely and efficiently	Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety and environmental impacts.	Critically assess the resources and techniques used to complete tasks, and to achieve engineering objectives. Recommend new techniques or use of resources based on a strong understanding of legal requirements, appropriate ethical conduct and associated risks that may occur before, during and after the task has been completed.
B3	Apply given tools/ methods to a well-defined problem and begin to appreciate the complexity of the issues.	Recognise and define key elements of problems and choose appropriate methods for their resolution in a considered manner.	Critically appraise engineering problems. Generate and analyse data to solve complex engineering problems
B4	Form opinions based upon knowledge and understanding of the subject in question	Present arguments to uphold decisions following an evaluation of a particular subject.	Assess, interpret and implement decisions with a critical awareness of technical, economic and commercial implications

Subject skills			
	Level 4	Level 5	Level 6 Honours Degree
C1	Conduct given laboratory experiments to investigate engineering principles and properties of devices and systems	Devise laboratory experiments to prove engineering principles and properties of devices and systems	Conduct and analyse experiments, adapting experimental procedures to novel situations if necessary, analysing experimental data in detail, and drawing comprehensive conclusions
C2	Design and construct devices and systems to meet given performance criteria	Design and construct devices/systems and devise methods of testing to check for given performance criteria	Design, construct, test and evaluate devices and systems to meet given performance criteria, including the use of computer-based tools
C3	Monitor processes or systems, and develop an awareness of possible improvements.	Monitor processes or systems, trend processes and make predictions, in order to bring about continuous improvement.	Analyse and evaluate processes, techniques or systems relating to unfamiliar problems with an awareness of quality issues and their application to continuous improvement
C4	Propose a self-directed individual programme of investigation.	Plan, undertake and report a self-directed individual programme of investigation and plan a feasible programme of design.	Propose, plan, undertake and report a self-directed individual programme of critical investigation, application design and implementation.

Practical, professional and employability skills			
	Level 4	Level 5	Level 6 Honours Degree
D1	Use oral, written and electronic methods for the communication of technical and other information	Use oral, written and electronic methods for competent communication of technical and other information.	Identify problems, bias and recommendations effectively through graphical, written and verbal forms of communication.
D2	Identify basic information and suitable sources, carry out searches and bring information together in a way that ensures work is accurate, clear and properly saved.	Plan how to obtain and use required information for the purpose of an activity and use appropriate structures and procedures to explore and develop information.	Use information technology competently - to source information, to prepare reports, to model performance using specialised software packages.
D3	Work reliably without close supervision accepting responsibility for tasks undertaken.	Demonstrate the ability to work reliably and effectively without supervision accepting responsibility for tasks undertaken	Evaluate and reflect on own performance and self-management.
D4	Use CPD to maintain competence and reflective practice.	Make effective use of CPD to ensure ongoing competence at the level of future intended practice.	Interpret the role of the engineer as a manager of himself/herself and of others, ensuring the highest level of professional and ethical conduct and acting within the legal framework governing engineering activities.

24 Curriculum matrix

Curriculum Matrix demonstrating how the overall programme outcomes are achieved and where skills are developed within individual modules

	Module Title	Core or option?	A1	A2	A3	A4	A5	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
Level 4	Engineering Maths	Core	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☑	☐
	Mechanical Engineering	Core	☑	☑	☐	☐	☐	☐	☐	☑	☑	☑	☐	☑	☐	☑	☐	☐	☑
	Electrical Engineering	Core	☑	☑	☐	☐	☐	☐	☐	☑	☑	☑	☐	☑	☐	☑	☐	☐	☑
	Engineering Design Practice and Professional development	Core	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☐	☑	☑	☑	☐	☑
	Engineering Materials & Manufacturing	Core	☐	☑	☐	☑	☑	☑	☑	☐	☑	☑	☑	☐	☐	☐	☑	☑	☐
	Electronics Technology	Core	☐	☑	☐	☐	☑	☐	☑	☑	☐	☑	☐	☑	☐	☐	☑	☑	☐
Level 5	Further Engineering Mathematics	Core	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☑	☐
	Structures Analysis and Finite Element Analysis	Core	☑	☑	☐	☐	☐	☑	☐	☑	☐	☑	☐	☐	☐	☑	☑	☐	☐
	Industrial Electronics and Applications	Core	☑	☑	☐	☑	☑	☑	☐	☑	☐	☑	☐	☑	☐	☑	☑	☐	☐
	Instrumentation and Control	Core	☑	☑	☐	☑	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐
	Industrial Automation and PLCs	Core	☐	☑	☐	☑	☑	☑	☐	☐	☐	☑	☑	☑	☐	☑	☐	☐	☐
	Mechanical and Manufacturing Systems and Business Management	Core	☑	☑	☑	☐	☑	☑	☑	☑	☑	☐	☑	☐	☑	☑	☑	☑	☑
Level 6	Manufacturing & Production System	Core	☐	☐	☑	☑	☑	☐	☑	☑	☑	☐	☐	☐	☐	☑	☑	☐	☑
	Power Electronics and Electric Drives	Core	☑	☑	☑	☑	☑	☑	☐	☑	☐	☑	☐	☑	☐	☐	☑	☐	☐
	Mechatronic Application	Core	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐
	Individual Engineering Project	Core	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

	Module Title	*Core or option?*	***A1***	***A2***	***A3***	***A4***	***A5***	***B1***	***B2***	***B3***	***B4***	***C1***	***C2***	***C3***	***C4***	***D1***	***D2***	***D3***	***D4***
	Maintenance & Safety Systems	Option	☐	☑	☐	☐	☑	☐	☐	☑	☑	☐	☐	☐	☐	☑	☑	☐	☐
	Industry 4.0	Option	☑	☑	☐	☑	☑	☑	☐	☑	☑	☑	☐	☑	☐	☑	☑	☐	☐
	Further Control Systems Engineering	Option	☑	☑	☑	☑	☑	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐

25 Learning and teaching strategy

The programme is jointly developed by the programme team from both Wrexham University and Dalian Polytechnic University. It is of a dual-award programme. For all modules which contribute to the Wrexham award of BEng (Hons) Mechatronics Engineering and are delivered at Dalian Polytechnic University, the following learning and teaching strategy will apply.

The learning and teaching strategy has been developed within Wrexham University's Teaching and Learning Framework, and has been informed by the QAA Subject Benchmark Statement for Engineering (2019) and the QCA (Qualifications and Curriculum Authority). It also complies with the learning and teaching policy at Dalian Polytechnic University and fulfils the higher education teaching and learning requirements set by the Ministry of Education of China and the Education Bureau of Liaoning Province of China.

The team recognises that the learning and teaching strategy should reflect the different requirements of the students. In order to achieve this the team have agreed the following strategy:

1. To ensure that the teaching methods adopted for classroom and related activity are planned to ensure that tutors use a range of examples, reflecting the diversity of experiences when explaining the application of theory to practice.

2. To ensure that group discussions, case study / problem solving activity relate to and reflect the different aspects of practice represented within the classroom.

3. Where guest lecturers are used, they will be briefed by the module tutor to ensure that they are aware of the student profile and that the proposed presentation / lecture accommodates this.

4. Students will be supported by tutorial discussions between the tutor and student to ensure that the proposed learning reflects the practice needs of the student.

5. To ensure that the assessment strategy and methods of assessment are sufficiently flexible to enable students to apply and demonstrate their learning in a context which is relevant to them.

The learning and teaching methods adopted reflect the QCA /QAA descriptors in the following ways:

- Lectures are used to impart key information and show case new ways of working which will enable students to develop a sound understanding of the principles of their field of study as well as identifying new ways of working.
- Case studies, role plays and group working will be used to facilitate application of the principles more widely. They will also be used to prompt discussion and

practise problem solving skills. This will also allow students to evaluate the appropriateness of different approaches to solving problems.

- The use of portfolios facilitates reflection on the qualities necessary for employment, requiring the exercise of personal responsibility and decision making. Additionally they will allow students to identify the limits of their knowledge and skills and identify strategies for development.
- Assessments are used to facilitate learning as well as providing an indication of student achievement.

The programme team has developed a strategic approach to delivering learning and teaching which meets the needs of the student group, enables skills development, allows for the practical application of knowledge and encourages students to become reflective practitioners. The balance between face-to-face lectures and directed study is detailed within the module specifications. Students will be encouraged, through classroom activities and assessments, to reflect on both their own and organisational behaviour in order to improve their performance as well as giving them the knowledge and confidence to contribute towards the development of their organisational performance.

Learning and Teaching are activities which operate at different levels simultaneously. To the student the immediate activity relates to the explicit topics being studied. However, transferable skills are also inherent in order for the student to both carry out the tasks and to develop. These elements are built into the modules comprising the programme as what might be called embedded issues. Other embedded issues, such as awareness of environmental impact, sustainability and commercial implications are also integrated in modules throughout the programme.

Knowledge and Understanding

Acquisition of knowledge is by means of lectures, practical and laboratory-based exercises, investigative exercises involving searching of various sources, directed reading and further reading. Pre-written notes will have a role in supporting these activities. Understanding is developed through tutorials, discussion, evaluation exercises and individual exercise sheets.

Intellectual Skills

These skills are developed by the students undertaking individual activities, within tutorials and practical sessions, or by being required to contribute to group activities. In each case, throughout the course a range of problems are set requiring the student to carry out information searches, analysis, design formulation, synthesis, test definition, modelling (software based), methodology or by calculation. Reflective self-evaluation forms part of this. Critical evaluation is encouraged via debate and discussion in the tutorials.

Key Skills

Key skills include: communication skills, ability to work in a group or on one's own, management of time, use of computers and other technology, the application of calculations (the discipline of regularly attending and contributing to classes exercises the transferable skills of self-management and time management). Each module specification provides examples of transferable skills covered within its learning

outcomes. Beyond this most modules require performance in several skill areas including self-management, communication and use of computer packages. All of these are monitored by the module tutors and feedback given.

VLE (Virtual Learning Environment)
All students will have their accesses to Wrexham University's VLE, Moodle. Extensive use is made of Wrexham University's VLE to enhance the learning experience.

All DPU staff in the programme team for a Wrexham University validated programme and all students studying in the programme will use Wrexham University's VLE for the teaching and learning of the programme. Both staff in the programme team and students studying the programme will receive their Wrexham University IT accounts, and will have their accesses to relevant Wrexham University Regulations, Policies and Procedures. Students will complete their Student Evaluation of Modules (SEM) forms on Moodle, submit their assignments through Turnitin (corresponding submission points on Moodle) and receive their preliminary assignment results on Moodle.

Moodle is used by staff to provide information about the courses and individual modules, and also as a repository of lecture notes and links to other sources of information.

Lab and Library Facilities and Dedicated Classrooms
All students studying the programme will have their dedicated classrooms which provide all students their seats and tables on campus at Dalian Polytechnic University and have their access to university lab facilities to support their studies. Students have their accesses to the Library facilities at Dalian Polytechnic University, which have the collections of more than 804,200 hard-copy books and journals, and more than 1,653,200 e-books and e-journals in 19 Chinese and English data bases, more than 1,600 seats in the reading rooms and more than 100 computers dedicated for e-paper and e-book reading in the e-document reading room.

26 The Wrexham Graduate

Guidance – As per the University Wrexham Graduate Framework, all undergraduate programmes must evidence where the core attributes, key attitudes and practical skillsets are embedded within the programme content. Information should align with the individual module specifications.

	CORE ATTRIBUTES				**KEY ATTITUDES**					**PRACTICAL SKILLSETS**					
Module title	Engaged	Creative	Enterprising	Ethical	Commitment	Curiosity	Resilient	Confidence	Adaptability	Digital fluency	Organisation	Leadership and team working	Critical thinking	Emotional intelligence	Communication
Level 4															
Engineering Maths	☐	☐	☐	☐	☒	☒	☐	☒	☐	☐	☐	☐	☒	☐	☐
Mechanical Engineering	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☒
Electrical Engineering	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☒
Engineering Design Practice and Professional development	☐	☒	☒	☒	☐	☐	☒	☒	☒	☒	☒	☒	☐	☒	☒
Engineering Materials & Manufacturing	☐	☐	☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒
Electronics Technology	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐
Level 5															
Further Engineering Mathematics	☐	☐	☐	☐	☒	☒	☐	☒	☐	☐	☐	☐	☒	☐	☐
Structures Analysis and Finite Element Analysis	☐	☒	☐	☐	☐	☒	☐	☐	☐	☒	☐	☐	☒	☐	☒
Industrial Electronics and Applications	☐	☒	☐	☒	☐	☐	☐	☐	☒	☒	☐	☐	☐	☐	☐
Instrumentation and Control	☐	☐	☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☒	☐	☒
Industrial Automation and PLCs	☐	☒	☒	☒	☐	☒	☐	☒	☐	☒	☐	☐	☐	☐	☒
Mechanical and Manufacturing Systems and Business Management	☐	☐	☒	☒	☐	☐	☒	☒	☒	☐	☒	☒	☐	☒	☐

Level 6															
Manufacturing & Production System	☐	☒	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐	☒
Power Electronics and Electric Drives	☒	☐	☐	☐	☐	☒	☐	☐	☐	☐	☐	☐	☒	☐	☐
Mechatronic Application	☐	☒	☐	☒	☐	☐	☐	☐	☐	☒	☐	☐	☒	☐	☒
Individual Engineering Project	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒
Maintenance & Safety Systems	☐	☐	☒	☒	☐	☐	☐	☐	☒	☐	☒	☐	☐	☐	☒
Industry 4.0	☐	☒	☐	☒	☐	☒	☐	☐	☐	☒	☐	☐	☐	☐	☒
Further Control Systems Engineering	☐	☐	☐	☐	☐	☐	☐	☐	☒	☒	☐	☒	☐	☐	☒

27 Work based/placement learning statement

There are no placements relating to any of the programmes within this suite.

28 Welsh medium provision

N/A

29 Assessment strategy

For all modules which contribute to the Wrexham award of the programme in BEng (Hons) Mechatronics Engineering and are delivered at Dalian Polytechnic University, an assessment strategy which is student centred and reflects the requirements of the QAA Subject Benchmark Statement Engineering (2019) is adopted.

The programme team from both Wrexham University and Dalian Polytechnic University are committed to delivering the assessment strategy.

The programme provides opportunities for formative, diagnostic and summative feedback. 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, and where possible synthesising their university learning.

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.

Grading
Assessment will be graded using the suggested criteria grid detailed within Wrexham University’s Assessment Guidance Handbook, the criteria will be contextualised for each assessment. All work will be assessed by tutors at Wrexham University or at Dalian Polytechnic 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, which is also adopted by Dalian Polytechnic University for the programme delivery.

Extenuating Circumstances and Deadlines for Submission
Students will be given a schedule of assessment submission dates for the year. They 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 modules, for example, the module of Individual Engineering Project, ‘progressive feedback’ will be used to give students good step-by-step supports during their course studies, particularly when there are many problems with an individual student’s work.

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.

In Course Tests
In course tests are usually an ‘unseen’ paper sat in an invigilated environment. An exception to the unseen element is when a case study is required for reference. 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.

Note: The in-course tests will be set in a similar style to a formal written examination, with a similar type of paper and with a similar level of academic rigour. However, it will be sat under the supervision of the programme team, rather than under the central university administration, in order to provide flexibility in the timing of the assessment activity.

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 perhaps 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.

Continuous Assessment
Some modules use continuous assessment whereby a set of progressive exercises are used to build up to the achievement of a major task. Each exercise is given a mark (called summative assessment) and feedback given, usually during class, in order to help with the next stage.

The final mark is a combination of these marks. It is also the preferred method of assessment for the project, as the student project develops there are interim points for assessment which are inclusive of VLE quizzes, presentations, log books, and staged formal reports. The feedback to the student is thus also continuous and assists the students to achieve their potential.

Case Study
For some modules, a 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.

Schedule of Assessments
The following tables give an overview of the methods by which each module is assessed. Further details of assessments can be found in the module specifications.

Module code & title	Assessment type and weighting	Assessment loading	Indicative submission date
ENG4AH Engineering Maths	50% Examination 50% Examination	2 hours 2 hours	Semester 1 and 2

ENG4AJ Mechanical Engineering	50% Examination 50% Examination	2 hours 2 hours	Semester 1 and 2
ENG4AL Electrical Engineering	50% Examination 50% Coursework	2 hours 2000 words	Semester 1
ENG4AF Engineering Design Practice and Professional	100% Portfolio	4000 words	Semester 1 and 2
ENG4AG Engineering Materials & Manufacturing	50% Examination 50% Report	2 hours 2000 words	Semester 1
ENG4AK Electronics Technology	50% Examination 50% Portfolio	2 hours 2000 words	Semester 2
ENG5AW Further Engineering Mathematics	50% Examination 50% Examination	2 hours 2 hours	Semester 1, 2
ENG5AT Structures Analysis and Finite Element Analysis	60% Examination 40% Portfolio	2 hours 2000 words	Semester 2
ENG5AP Industrial Electronics and Applications	100% Portfolio	4000 words	Semester 1
ENG5AQ Instrumentation and Control	50% Examination 50% Portfolio	2 hours 2000 words	Semester 2
ENG5AX Industrial Automation and PLCs	100% Portfolio	4000 words	Semester 2
ENG5AR Mechanical and Manufacturing Systems and Business Management	20% Report 80% Portfolio	1500 words 2500 words	Semester 1 and 2
ENG6AP Individual Engineering Project	100% Report	10000 words	Semester 2
ENG6AJ Manufacturing & Production System	50% Examination 50% Case Study	2 hours 2500 words	Semester 1
ENG6AH Maintenance & Safety Systems	100% Portfolio	4000 words	Semester 1
ENG6AK Mechatronic Application	80% Portfolio 20% Presentation	3500 words 20Minutes	Semester 1
ENG6AL Power Electronics and Electric Drives	100% Examination	3 hours	Semester 1
ENG6AQ Industry 4.0	40% Case Study 60% Coursework	1500 words 2500 words	Semester 1
ENG6AM Further Control Systems Engineering	50% Examination 50% Case Study	2 hours 2500 words	Semester 1

30 Assessment regulations

Regulations for Bachelor Degrees, Diplomas, Certificates and Foundation Degrees apply to these programmes.

Derogations

Derogation form submitted with this document

Non-credit bearing assessment

Check on attendance; Classroom performance.

Borderline classifications (for undergraduate programmes only)

The Level Six Individual Engineering Project will be taken into consideration when considering borderline classifications, alongside all other criteria is described in the Academic Regulations.

Restrictions for trailing modules (for taught masters programmes only)

N/A

31 Programme Management

Programme leader

Dr Zheng Chen

Module Leaders

Module code & title	Module Leader
ENG4AH Engineering Maths	Shuang Lin
ENG4AJ Mechanical Engineering	Wei Qi
ENG4AL Electrical Engineering	Dr Sultan Shoaib
ENG4AF Engineering Design Practice and Professional	Tongyan Liu
ENG4AG Engineering Materials & Manufacturing	Dr Lataliia Luhyna
ENG4AK Electronics Technology	Andrew Sharp
ENG5AW Further Engineering Mathematics	Chao Liu
ENG5AT Structural Analysis and Finite Element Analysis	Xiangdong He
ENG5AP Industrial Electronics and Applications	Dr Sultan Shoaib
ENG5AQ Instrumentation and Control	Dr Zheng Chen
ENG5AX Industrial Automation and PLCs	Dr Zheng Chen
ENG5AR Mechanical and Manufacturing Systems and Business Management	Man Wang
ENG6AP Individual Engineering Project	Dr Teng Gao
ENG6AJ Manufacturing & Production System	Olivier Durieux
ENG6AH Maintenance & Safety Systems	Dr Ling Sun
ENG6AK Mechatronic Application	Dr Mobayode Akinsolu
ENG6AL Power Electronics and Electric Drives	Dr Yuri Vagapov
ENG6AQ Industry 4.0	Dr Teng Gao
ENG6AM Further Control Systems Engineering	Dr Jinshi Lu

University Academic Link

Dr Zheng Chen

32 Quality Management

This is a jointly developed dual award arrangement and reflects the expectations as set out by Wrexham University for the operation and management of dual award arrangements as follows:

Academic oversight (Expectation A2.1)	Each degree-awarding body oversees its own qualification, using its own policies and procedures. There may be a consortium or joint programme management board to enable joint decision-making about, and management of, the programme on a range of matters.

	However, this would make recommendations through the normal academic decision-making structures of each of the respective awarding bodies, rather than having delegated authority to make decisions on their behalf.
Academic regulations (Expectation A2.1)	As individual and separate qualifications are awarded, the academic regulations of each of the degree-awarding bodies apply to each award granted under this arrangement which is jointly delivered. The academic standards of each of the degree-awarding bodies involved have to be satisfied. In some cases, these may be exceeded to take account of a particular partner's requirements but in no circumstances are they compromised.
Programme approval (Expectation A3.1)	The programme is approved through each degree-awarding body's usual channels for programme approval. UK degree-awarding bodies may accept the detailed approval processes undertaken at module level by their partners for the modules or components that those partners are delivering. UK degree-awarding bodies retain responsibility for making an assessment as to whether the proposed programme as an entity (and its assessment strategy) delivers and tests programme outcomes at the appropriate level for the award, and maintains its own academic standards as a degree-awarding body.
Assessment (Expectation A3.2)	Each degree-awarding body is normally responsible for the assessment of the components of the programme that it delivers. Each degree-awarding body is responsible for the overall assessment strategy leading to its qualification. The programme is subject to that degree-awarding body's assessment regulations for the respective qualifications. Marks are then imported from the other partner (as appropriate) by each degree-awarding body for the qualification it awards. A decision is made about whether a single marking scheme is to be adopted by all participants in the jointly delivered programme or whether components of assessment will be marked in accordance with the local regimes and then rescaled to the scheme of each individual degree-awarding body.
Examination board (Expectation A3.2)	Assessment decisions are taken by an examination board, which conforms to the requirements of the degree-awarding body involved. A joint board, additional and subsidiary to those already existing in each degree-awarding body, may be established to oversee the confirmation of marks for individual components and determine progression through the jointly conceived

	programme. The joint board reports to the relevant structures in the individual degree-awarding bodies.
External examining (Expectation A3.4)	The UK degree-awarding body's usual external examining arrangements apply to modules that the degree-awarding body delivers and also with respect to the award of the qualification.
Monitoring and review (Expectation A3. 3)	The usual monitoring and review procedures of each of the partners apply and the outputs are shared with the other partner. Reports are submitted through each degree-awarding body's own quality assurance framework. A process for periodic review is decided collectively and the outcome reported through each degree-awarding body's own quality assurance framework.
Certification and transcripts (Expectation A2.2)	Students who successfully achieve each set of criteria (learning outcomes or other requirements) receive separate institutional or national certificates, one for each of the separate qualifications being granted by each of the degree-awarding bodies involved.

The Programme Leader will take overall responsibility for quality assurance and enhancement in line with the expectations detailed within the University's Programme Leaders Handbook.

Each module will be assigned to a named module leader who will take responsibility for the delivery of the learning, teaching and assessment of the module. In keeping with the policies and procedures agreed by the University, the key mechanism for quality control and enhancement at programme level will be the processes and procedures associated with the annual monitoring cycle which is formalised through the production of the Annual Monitoring Report (AMR). The AMR evaluates the programme delivery drawing on feedback from students, professional bodies, external examiners and employers. The outcomes of the AMR are scrutinised and agreed at Programme Level with subsequent monitoring and review being formalised though the School Board and the Learning and Teaching Quality Committee. Specific methods used for consulting students include the completion of Module Evaluation Questionnaires, Student Voice Forum and end of year group feedback sessions.

Feedback will be provided to students in the following ways:

- Minutes and responses to Student Voice Forum (SVF) will be posted on the VLE.
- External Examiner reports and any associated actions arising will be presented to students in the November SVF.
- An overview of the draft AMR and associated actions will be presented to the SVF in November.

- An update on achievement of AMR Action plans will be provided in the March SVF.

The Programme team meet monthly, via video conference, in order to monitor programme performance. Issues discussed include recruitment and retention, student feedback, assessment calendars, approaches to teaching and learning, coordination of site visits and guest lecture plans. Peer observation is undertaken; this includes classroom based observation as well as peer review of marking, assessment and feedback.

Whilst the Programme Leader is responsible for day to day management of the programme, Personal Tutors will ensure the welfare and development of each student on the programme throughout their period of study.

Feedback from students
Student Representatives will be elected from the student group, and will attend the SVF meetings to provide a student input. The representative will also be able to bring urgent matters to the Programme Leader's attention by a direct approach.

Students will complete their SEM forms on Moodle.

Industrial Meetings
Regular meetings take place with industry's training managers, chief engineers, factory/site managers and regional managers. This gives an opportunity for their current and future training needs to be discussed and developed. Regular site visits are undertaken in the context of the School's part time students, however this also contributes to our full time provision.

Effective use of VLE environment
Staff will effectively use VLE environment to keep in contact with students, timely answer students' questions, get feedback from students, resolve issues students concern, and provide effective help for students' programme/module learnings.

Whilst the Programme Leader is responsible to work with the coordinator at DPU for day to day management of the programme, Personal Tutors will ensure the welfare and development of each student on the programme throughout their period of study.

33 Research and scholarship activity

The team are committed to ensuring that their knowledge remains current and relevant to changing practice. Additionally they ensure that they reflect on and develop their teaching practice through engagement teaching related CPD.

34 Learning support

Institutional level support for students

Programme specific support for students

A sound incentive mechanism has established to promote the improvement of students' comprehensive quality and healthy personal development as well as a financial aid mechanism for students from poor families. It has set up a number of awards and grants, with the main reward and financial aid standards as follows:

1. Chinese Government National Scholarship: RMB ¥8,000 /year/person.

2. Chinese Government National Encouragement Scholarship: RMB¥ 5,000 / year/person.
3. Chinese Government State grant: First class RMB ¥4,000 / year, second class RMB ¥2,500 / year.
4. Liaoning Provincial Government Scholarship: ¥8,000 /year/person.
5. Excellent Admission Scholarship of Dalian Polytechnic University: first class ¥3,000 /person, second class ¥2,000 /person, third class ¥1,000 /person.
6. Comprehensive Scholarship of Dalian Polytechnic University. First class: ¥2,000/year, ¥800 /year for second class, ¥ 400 /year for third class.
7. Love Grant from Dalian Polytechnic University: ¥1,000 /year/person.

Dalian Polytechnic University shall provide convenience for students to transact state student loans. Students credit loan is set up by the national development bank, rural credit cooperatives and other financial institutions for freshman and family with economic difficulties. These loans are mainly used to pay the expenditure in school tuition, accommodation after the loan application, which has filed by students and parents (or other legal guardian) to the financial assistance management centre or financial institution in the origin of student, has been approved.

The students from poorer backgrounds can be ensured to successfully complete their studies through various forms in Dalian Polytechnic University, such as work-study assistance, tuition remission, educational subsidies for ex-soldiers, green passages for enrolment and temporary subsidies.

35 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 **https://www.glyndwr.ac.uk/en/AboutGlyndwrUniversity/EqualityandDiversity/** ensuring that everyone who has the potential to achieve in higher education is given the chance to do so.