

# PROGRAMME SPECIFICATION

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## Bachelor of Engineering with Honours in Mechatronics and Autonomous Systems

<b>Awarding institution</b>	LJMU
<b>Teaching institution</b>	Auston College Myanmar, Yangon, Myanmar
<b>JACS Code</b>	
<b>Programme Duration</b>	Full-Time: 1 Year
<b>Language of Programme</b>	All LJMU programmes are delivered and assessed in English
<b>Subject benchmark statement</b>	Engineering Council UK Spec and AHEP 3rd Edition Engineering Subject Benchmark Statement (2019)
<b>Programme accredited by</b>	
<b>Description of accreditation</b>	
<b>Validated target and alternative exit awards</b>	Bachelor of Engineering with Honours in Mechatronics and Autonomous Systems

**Link Tutor**

## Educational aims of the programme

The BEng. programme in Mechatronics and Autonomous Systems is designed to develop a high level of technical expertise together with the emotional intelligence to be able to practice successfully as a professional engineer in a modern interdisciplinary engineering environment. New graduate engineers are increasingly expected to take on important technical leadership and management responsibilities early in their careers and the knowledge and skills gained from this programme are designed to produce graduates who are able to make an immediate contribution to their employers' organisations.

The programme aims to:

Provide a programme of study that develops core knowledge and understanding of engineering principles, mathematics, and computation appropriate to the field of Mechatronics and Autonomous Systems.

Enable students to develop specialist knowledge, intellectual and practical skills that will enable them to analyse, investigate and develop robust solutions to Mechatronics and Autonomous Systems problems.

Develop relevant study and personal skills so that students progressively take responsibility for their learning, becoming, independent learners, while receiving appropriate tutoring and support.

Equip students with a range of transferable skills and attributes in the use of computers, software packages, team working, communication, time management and problem solving methodology that will enable them to undertake responsible roles in industry and commerce.

Provide a degree programme that meets the needs of industry.

Develop students to work in and manage teams, and work independently at managerial level utilising project management and technical skills.

To encourage students to engage with the development of employability skills by completing a self-awareness statement.

## Target award Learning Outcomes - Bachelor of Engineering with Honours

*A student successfully completing the programme of study will have acquired the following subject knowledge and understanding as well as skills and other attributes.*

*A student who is eligible for this award will be able to:*

1. Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology.
2. Engage in the creative and innovative development of engineering technology and continuous improvement systems.

3. Identify potential projects and opportunities.
4. Conduct appropriate research, and undertake design and development of engineering solutions.
5. Manage implementation of design solutions, and evaluate their effectiveness.
6. Plan for effective project implementation.
7. Plan, budget, organise, direct and control tasks, people and resources.
8. Lead teams and develop staff to meet changing technical and managerial needs.
9. Bring about continuous improvement through quality management.
10. Communicate in English about engineering topics.
11. Present and discuss proposals.
12. Demonstrate personal and social skills.
13. Comply with relevant codes of conduct.
14. Manage and apply safe systems of work.
15. Undertake engineering activities in a way that contributes to sustainable development.
16. Carry out and record CPD necessary to maintain and enhance competence in own area of practice
17. Exercise responsibilities in an ethical manner

## Teaching, Learning and Assessment

*The methods used to enable outcomes to be achieved and demonstrated are as follows:*

Teaching and learning:

Lectures

Tutorials

Laboratory work

Group projects

Individual projects

Individual and group presentations

Poster presentation

Design, build and test exercises

Computer programming exercises

On line formative quizzes

Assessment:

Written examinations

On line summative quizzes

Group design projects and reports

Individual projects and reports

Poster display

Laboratory logbook

## Programme structure - programme rules and modules

Level 6	Potential Awards on completion	Bachelor of Engineering with Honours
Core	Option	Award Requirements
6500ELEMM Automation (10 credits) 6512ELEMM Process Control (20 credits) 6513ELEMM Autonomous Systems and Machine Learning (20 credits)		120 core credits at level 6 0 option credits at level 6

6513MECHMM Dynamics and Control (10 credits) 6556ELEMM Mechatronics and Autonomous Systems Project (40 credits) 6565ELEMM Industrial Management (20 credits)		
Level 5	Potential Awards on completion	
Core	Option	Award Requirements
5505ELEMM Control System Design and Analysis (20 credits) 5508ELEMM Mechatronics (20 credits) 5512ELEMM Applied Instrumentation (20 credits)		60 core credits at level 5 0 option credits at level 5

## Information about assessment regulations

All programmes leading to LJMU awards operate within the University's Academic Framework.  
<https://www.ljmu.ac.uk/about-us/public-information/academic-quality-and-regulations/academic-framework>

## Opportunities for work-related learning ( location and nature of activities)

### Criteria for admission

#### Other

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#### Overseas qualifications

Applicants with the following qualifications may be admitted to the programme:

- Auston Higher Diploma in Engineering Technology;
- Auston Higher Diploma in Mechanical Engineering (with appropriate electives);
- Higher National Diploma in a relevant field such as Electrical & Electronic Engineering, Mechanical Engineering, Mechatronics, or similar;
- Other recognized local qualifications that will be individually assessed in consultation with the Link tutors

### External Quality Benchmarks

All programmes leading to LJMU awards have been designed and approved in accordance with the UK Quality Code for Higher Education, including the Framework for Higher Education Qualifications in the UK (FHEQ) and subject benchmark statements where applicable.

The University is subject to periodic review of its quality and standards by the Quality Assurance Agency (QAA) Published review reports are available on the QAA website at [www.qaa.ac.uk](http://www.qaa.ac.uk)

Programmes which are professionally accredited are reviewed by professional, statutory and regulatory bodies (PSRBs) and such programmes must meet the competencies/standards of those PSRBs.

### Support for students and their learning

The University aims to provide students with access to appropriate and timely information, support and guidance to ensure that they are able to benefit fully from their time at LJMU. All students are assigned a Personal Tutor to provide academic support and when necessary signpost students to the appropriate University support services.

Students are able to access a range of professional services including:

- Advice on practical aspects of study and how to use these opportunities to support and enhance their personal and academic development. This includes support for placements and careers guidance.

- Student Advice and Wellbeing Services provide students with advice, support and information, particularly in the areas of: student funding and financial matters, disability, advice and support to international students, study support, accommodation, health, wellbeing and counselling.
- Students studying for an LJMU award at a partner organisation will have access to local support services

## **Methods for evaluating and improving the quality and standards of teaching and learning**

### **Student Feedback and Evaluation**

The University uses the results of student feedback from internal and external student surveys (such as module evaluations, the NSS and PTES), module evaluation questionnaires and meetings with student representatives to improve the quality of programmes.

### **Staff development**

The quality of teaching is assured through staff review and staff development in learning, teaching and assessment.

### **Internal Review**

All programmes are reviewed annually and periodically, informed by a range of data and feedback, to ensure quality and standards of programmes and to make improvements to programmes.

### **External Examining**

External examiners are appointed to programmes to assess whether:

- the University is maintaining the threshold academic standards set for awards in accordance with the FHEQ and applicable subject benchmark statements
- the assessment process measures student achievement rigorously and fairly against the intended outcomes of the programme(s) and is conducted in line with University policies and regulations
- the academic standards are comparable with those in other UK higher education institutions of which external examiners have experience
- the achievement of students are comparable with those in other UK higher education institutions of which the external examiners have experience

and to provide informative comment and recommendations on:

- good practice and innovation relating to learning, teaching and assessment observed by external examiners
- opportunities to enhance the quality of the learning opportunities provided to students

### **Please note:**

*This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content, teaching, learning and assessment methods of each module can be found in module and programme guides.*