

## PROGRAMME SPECIFICATION

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### Certificate of Higher Education in International Year One (Engineering)

<b>Awarding institution</b>	Liverpool John Moores University
<b>Teaching institution</b>	Study Group
<b>JACS Code</b>	H000
<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
<b>Programme accredited by</b>	N/A
<b>Description of accreditation</b>	
<b>Validated target and alternative exit awards</b>	Certificate of Higher Education in International Year One (Engineering)
<b>Link Tutor</b>	Jack Mullett

### Educational aims of the programme

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To provide students with an environment where they can develop their knowledge of engineering science, fundamental engineering principles and the underpinning subjects such as mathematics and computation to prepare for progression to accredited Engineering degrees.

To introduce students to the analysis of technical problems, which will further develop their core engineering knowledge and skills.

To provide students with appropriate support and encouragement to develop the necessary skills for independent study so that they can take responsibility for their own learning and subsequent professional development.

To initiate the development of high-level transferable skills such as team working, time management, communication, problem solving, using software packages and technical computing.

To develop students' English language, number, word-processing, research and writing skills to support successful progression to level 5 of MEng/BEng Mechanical Engineering or MEng/BEng Electrical and Electronic Engineering

### Target award Learning Outcomes - Certificate of Higher Education

*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. demonstrate knowledge and understanding of essential facts, concepts, theories and principles of the engineering discipline. This includes an appreciation of the wider multidisciplinary engineering context.
2. demonstrate an understanding of the fundamental scientific principles of mechanical and electronic and electrical engineering.
3. demonstrate knowledge and understanding of the underpinning mathematical and computer models relevant to the mechanical and electronic and electrical engineering disciplines, and an appreciation of their limitations.
4. demonstrate an awareness of developing and technologies related to mechanical engineering and electronic and electrical engineering.
5. demonstrate an ability to extract data pertinent to a problem and apply a solution using computer based

engineering tools, where appropriate.

6. demonstrate an ability to apply mathematical and computer-based models for solving problems in engineering.
7. demonstrate an appropriate level of English academic skills.
8. apply appropriate quantitative science and engineering tools to the analysis of problems.
9. understand the requirement for engineering activities to promote sustainable development.
10. demonstrate an awareness of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk) issues.
11. understand the need for an appropriate level of professional and ethical conduct in engineering.
12. illustrate an understanding of, and the ability to apply, a systems approach to engineering problems.
13. acquire practical engineering skills through a range of practical exercises.
14. demonstrate an understanding of current practice and its limitations and some appreciation of likely new developments.
15. demonstrate knowledge of a range of engineering materials and components relevant to mechanical engineering and electronic and electrical engineering.
16. understand the context in which engineering knowledge can be applied e.g. operations and management, technology, development.
17. have an understanding of customer and user needs and the importance of considerations such as aesthetics.
18. identify cost drivers.
19. speak, read, write and listen at an appropriate level in English.
20. demonstrate transferable skills that will be of value in a wide range of situations. These are exemplified by the Qualifications and Curriculum Authority Higher Level Key Skills.
21. demonstrate the use of technical literature and other information sources.
22. demonstrate the understanding of appropriate codes of practice and industry standards.
23. demonstrate an awareness of quality issues.
24. demonstrate an ability to apply engineering techniques taking account of a range of commercial and industrial constraints.
25. demonstrate fluency in all four English language skills; reading, writing, listening and speaking.
26. engage with the development of employability skills by completing a self-awareness statement.

## Teaching, Learning and Assessment

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

Acquisition of underpinning knowledge is achieved mainly through lectures and directed student-centred learning. Student-centred learning is used where appropriate resource material is available. Understanding is reinforced through case-studies. There will also be targeted listening exercises and IT will be used to familiarise students with applications and software relevant to engineering.

Testing of the knowledge base is through a combination of unseen written examinations, coursework in the form of case-study reports. The assessment methods will enable students to demonstrate their English language skills; this includes reading and writing exams, presentations and listening tests.

The ability to analyse is developed through lectures, case-studies analysis and practical applications. Fundamental principles are delivered predominantly by lectures and laboratory classes. Complex use of English language is taught via skills-based workshops and seminars.

The ability to analyse and solve problems is demonstrated via unseen exams, coursework and laboratory activities, alongside project studies.

Engineering knowledge, design and practical skills are developed through a combination of lectures, tutorials, practicals (as appropriate) and English skills-based workshops. Fundamental principles are delivered predominantly by lectures and laboratory classes.

Analysis, design and practical skills are assessed via coursework, laboratory work and practicals. Presentations, listening and reading skills are all also assessed.

Teaching and learning will be serviced by workshops, lectures, tutorials, seminars, debate, academic and technical writing skills, practical and laboratory activities.

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## Programme structure - programme rules and modules

The International Year One in Engineering (CertHE) will be offered as a full-time programme with both September and January start dates. Students will need to successfully complete 120 credits at level 4 to progress to level 5 of one of the following LJMU programmes: 32118 MEng/BEng Electrical and Electronic Engineering, 32120 MEng/BEng Mechanical Engineering, 36219 MEng/BEng Marine and mechanical engineering, 36183 MEng/BEng Mechatronics and autonomous systems and 35424 BEng. Architectural engineering.

The minimum pass mark for modules is 40% for the CertHE award. Students will need to achieve at least 50% in Academic English Skills (AES) for progression to level 5 to demonstrate proficiency in English equivalent to IELTS 6.0.

Please note the option modules listed below relate to the pathway/progression route.

4605IYO - Engineering Principles (32118/35424)

4606IYO - Microprocessors & Software (32118/36183)

4607IYO - Digital & Analogue Electronics (32118/36183)

4608IYO - Electrical Engineering Practice 1 (32118/36183)

4609IYO - Applied Mechanics 1 (36183/32120/36219)

4610IYO - Thermodynamics & Fluid Mechanics 1 (32120/36219/35424)

4611IYO - Materials & Manufacture (32120/36219/35424)

4612IYO - Engineering Practice 1 (32120/36219/35424)

Level 4	Potential Awards on completion	Certificate of Higher Education
Core	Option	Award Requirements
<p><a href="#">4601IYO</a> Academic English Skills (AES) (20 credits)</p> <p><a href="#">4602IYO</a> Engineering Mathematics 1a (10 credits)</p> <p><a href="#">4603IYO</a> Engineering Mathematics 1b (10 credits)</p> <p><a href="#">4604IYO</a> Electrical Engineering and Electrical Circuit Principles (10 credits)</p>	<p><a href="#">4605IYO</a> Engineering Principles (20 credits)</p> <p><a href="#">4606IYO</a> Microprocessors and Software (10 credits)</p> <p><a href="#">4607IYO</a> Digital and Analogue Electronics (20 credits)</p> <p><a href="#">4608IYO</a> Electrical Engineering Practice 1 (20 credits)</p> <p><a href="#">4609IYO</a> Applied Mechanics 1 (20 credits)</p> <p><a href="#">4610IYO</a> Thermodynamics and Fluid Mechanics 1 (20 credits)</p> <p><a href="#">4611IYO</a> Materials and Manufacture (10 credits)</p> <p><a href="#">4612IYO</a> Engineering Practice 1 (20 credits)</p>	<p>50 core credits at level 4</p> <p>70 option credits at level 4</p>

## 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)

Students will have the opportunity to engage with work related learning (WRL), which is embedded within the learning and teaching strategy, as well as the assessment strategy e.g. real world case studies and problem solving exercises.

## Criteria for admission

**Other**

An English level equivalent to at least 5.0 IELTS (with a minimum of 5.0 in each skill).

Equivalents: TOEFL listening 15, Reading, 13, Speaking, 18 Writing, 15

Pearsons 46 across all skills

**Overseas qualifications**

Approx AL equivalent/IB/HNC or above

**\*\*\*GRADE C REQUIRED IN MATHS AND PHYSICS IN FURTHER YEAR STUDY FOR ENGINEERING COURSE\*\*\*\***

AFRICA See below for guidelines - English test required if grade in national exams not = to GCSE (usually C or above)

Ethiopia TVET (10+3 Diploma) Grade C

Gambia Ordinary National Diploma (approx 2 years at Uni) or WAEC (West African Exam Council) A Level, College Certificate

Ghana OND/Ghanaian A Levels/Polytechnic Diploma

Kenya Cambridge Overseas Higher Cert A-E/East African or Kenyan Advanced Certificate, Ordinary Diploma, Higher Diploma, University Diploma

Nigeria National Diploma/Certificate

Rwanda Rwandan Advanced GCSE - 3 subjects 60% (Grade C+)

South Africa Senior Cert with Matriculation Endorsement = Five C's(relevant subjects) or National Senior Certificate = Five subjects grade 5 (relevant subjects)

Tanzania Cambridge Overseas Higher School Certificate A-E/National Form VI exam/Technical College Certificate/Diploma/Advanced Diploma

Uganda Cambridge Overseas Higher School Certificate/East African Advanced Certificate/Higher Diploma/National Certificate/National Diploma UACE Grades A- E

AUSTRALIA Year 12 / HSC = equivalent to A Levels. Students must also have a minimum ATAR score of 65.0.

AZERBAIJAN Secondary School leaving certificate/11th grade graduation grades A - C and evidence of 1 year of further study - to equate to 13 years of education (to approx A Level equivalency). Specialist Diploma/1st year of uni degree studies.

BAHRAIN Tawjahiya (Secondary School Leaving Certificate) and evidence of 1 year of further study (e.g. 1st year of 2 year Diploma)

BANGLADESH HSC @ 60% or above. All students must provide a language proficiency test certificate. SG test alone is not acceptable.

BELARUS Attestat/11th grade – with minimum GPA 6.5 + further plus 1 year successful completion

BRAZIL Ensino Medio - 4 subjects min (8.9 - 7.0 / bom / B / 4) or Ensino Medio - 4 subjects min (6.9 - 5.0 / regular / C / 3) + 1 further year

BRUNEI Cambridge A level/Matriculation = A Level Standard. BDTVEC National Diploma = BTEC National Diploma

CAMBODIA Diploma of Upper Secondary school = year 12. Grading A - Excellent , B - Very Good, C - Good, D - Satisfactory .4 subjects minimum grade D including relevant subjects, Grade C reqd in Maths for Business students + 1 further year.

CHINA "SH3/Senior High 3 with 80% or above in 4 or more subjects (70% on a case-by-case basis). OR SH3 (60%) plus 1st year of local higher education (60%)(IF further year of study is not relevant, then High School maths grade must be 50% or higher, and for Engineering/Science routes student must have taken "sciences" option in high school)"

COLOMBIA Bachillerato - 5 relevant subjects inc. Maths (A) Acceptable or above plus extra year study

HONG KONG HKDSE 333, Higher Certificate is considered comparable to BTEC Higher National Certificate (HNC) standard. Honours Diploma (from Shue Yan College) is considered comparable to BTEC Higher National Diploma (HND) / Foundation degree standard. Higher Diploma (2 years)

INDIA Year 12 HSC exams @ 50% or above (50% or above on case by case basis). IF studied English 65% (year 12) or above required. English test not necessary.

INDONESIA 7.0 SMU 3 (4 relevant subjects required)

IRAN High School 11/20) and Pre Uni Year Peeshdaneshgah 12/20

JAMAICA GCE A Level. Diploma from College of Art, Science and Technology or Associate Degree - generally accepted for HE entry (Diploma = approx A level standard).

JAPAN High School/Upper Secondary School leaving certificate and evidence of further study but High School leaving certificate with 3.0 GPA accepted alone, lower if there is one more year of further study. Further part study includes Junior College Diploma / Technical Associate Degree / Vocational Training Certificate / Diploma (inc. Koutou Senmon Gakko and Senmon Gakko) awarded by Vocational Training Colleges of Ministry of Labour is considered comparable to VCE Advanced Subsidiary (AS) level / BTEC National Certificate

JORDAN High School certificate (Tawjihi) and evidence of 1 year of further study - to equate to 13 years of education (to approx A level equivalency). Community College Certificate / Diploma (2/3 years) = BTEC National Diploma standard. General Vocational Secondary Education Certificate = BTEC First Diploma.

KAZAKHSTAN Certificate of Secondary Education and evidence of 1 year of further study - to equate to 13 years of education (to approx A level equivalency). Part study of Specialist Diploma. Diplom o srednem spetsialnom obrazovanii (Diploma of Specialised Secondary Education until 1991) is considered comparable to BTEC National Diploma standard.

KOREA High School Diploma (4th Grade, or lower is okay if student also has 1 further year of study) or Junior Vocational College Diploma.

KUWAIT Vocational Training Centre Certificate/Diploma/part study of bachelors degree

LAOS Baccalearat/11th grade - 4 subjects combining C and D including relevant subjects + 1 further year of study.

LEBANON Baccalearat - minimum 12 points including relevant subjects and further year of study

LIBYA Secondary Education Certificate - 60% or above plus evidence of 1 year of further study post completion of secondary school

MACAU Completion of Form 6 or Senior Middle 3 with 70%+ average (other schools - 80%) in relevant academic subjects

MALAYSIA STPM or A Levels with 2 principal passes, or UEC with aggregate of not more than 35 points for 6 subjects including English

Student with other qualifications will be considered on a case-by-case basis

MAURITIUS Cambridge Overseas Higher School Certificate / GCE A level. Ordinary Technician Diploma = BTEC National Diploma. Diploma (2 years), University of Mauritius/Higher Technician Diploma = BTEC HND

MEXICO Bachillerato 75% or 65% + 1 year HE (pass)

MOLDOVA Attestat/11th grade – with minimum GPA 6.5 + further plus 1 year successful completion

MONGOLIA High School certificate and evidence of further study - to equate to 13 years of education (to approx A level equivalency). Part study of Certificate of Vocational Education/bachelor/university diploma.

MYANMAR Basic Education High school Matriculation = 11 years. Minimum of 60% achieved overall, including 60% in 4 relevant subjects + 1 further year of study.

NEPAL Higher Secondary Certificate (HSC) - 60% or above

NEW ZEALAND NCEA - Level 3 = equivalent to A Levels. NCEA Level 3 with relevant subjects & Record of Learning to see exact grades and subjects passed. Majority of marks = merits / achieved.

OMAN 2 year Diploma/Technical Industrial College Diploma, 1 year Certificate, Higher/Advanced Diploma.

PAKISTAN HSC @ 55% or above

PHILIPPINES 75% pass in High School Diploma from list of top schools (school list in general rules tab) or 80% pass in High School Diploma from all other schools plus 1 further year of study

QATAR High School certificate and evidence of 1 year of further study - to equate to 13 years of education (to approx A level equivalency). Part study of Vocational Secondary Diploma/Secondary Technical Certificate/Diploma in Technology/Bachelor Degree..

RUSSIA (+ Chechnya) Attestat with minimum 3.5 plus 1 year of successful completion of further studies

SAUDI ARABIA 1 year of further study eg. diploma level studies. Diploma provided by Higher Institutes and Technical Colleges. Technical College Certificate (2 years) = BTEC National Certificate. Higher Technical Institute Diploma = BTEC National Diploma. College of Technology Diploma (2 years) = BTEC National Diploma. Higher Diploma = 2 years of Bachelors

SINGAPORE Singapore/Cambridge A level (120 UCAS points) or part study of Polytechnic Diploma/Polytechnic Certificate/Polytechnic Advanced Diploma.

SRI LANKA A Levels (international or local - Sri Lanka General Certificate of Advance Level Education) - 2 x D or above or 3 x E or above.

TAIWAN SH3 (70%) or Senior High 3 + 1 year of further study (lower SH3 grades needed if student has done some further study). Part study of Junior College Diploma/Technical College/Institute or Polytechnic Diploma/Senior Vocational High School Leaving Certificate = BTEC First Diploma. Plus any relevant work experience

THAILAND Completion of MAW 6 with an average grade 3.0 in academic subjects including  $\geq 3.0$  in Maths/Science subjects. Completion of 1 year of post-secondary study (university or college) with an average grade of 65%.

TURKEY Devlet Lise Diplomas# (High School Completion)- GPA 3.0 (60%) from any high school

UAE High School certificate (Tawjihyya) and evidence of 1 year of further study - to equate to 13 years/approx A level equiv. Part study of Specialist/University Diploma or Associate Degree.

UKRAINE Attestat/11th grade – with minimum GPA 6.5 + further plus 1 year successful completion

USA High School certificate and evidence of 1 year of further study - to equate to 13 years of education (approx A level equivalency). Advanced Placement Examination/Associate Degree/Professional Diploma = AL equiv.

UZBEKISTAN Completion of Attestat and 1 further year study of diploma of post secondary education, specialist diploma and Bakalavr.

VENEZUELA Titulo de Bachiller (Bachiller de la Republica)- 4 subjects min 12/20 + 1 further year

VIETNAM Completed Year 12: Year 12 completion report with GPA 7.5 overall, and with 7.5+ for Math and science subjects. Completed Year 12 plus 1 further year of study (university or college) with GPA 6.5. Part study of College Diploma/Associate Degree. Entry from Year 11 NOT accepted. Borderline cases to be referred to RO for check of school

## 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.*