

Overview

Programme Code	46193
Programme Title	Electrical and Electronic Engineering
Awarding Institution	Liverpool John Moores University
Programme Type	Degree with Foundation
Language of Programme	All LJMU programmes are delivered and assessed in English
Programme Leader	
Link Tutor(s)	Dante Matellini

Partner Name	Partnership Type
University of Shanghai For Science and Technology	Dual

Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Bachelor of Engineering with Honours (Fnd) - BGHF	See Learning Outcomes Below
Alternative Exit	Diploma of Higher Education (Fnd) - DHEF	To undertake advanced mathematical and computational studies of engineering systems and problems. To demonstrate the application of basic principles of Electrical circuits, Electronics, Programming, Measurement and Control and microprocessors from level 4 to the solution of standard engineering problems. To demonstrate the intermediate engineering skills. To demonstrate a clear understanding of the business context of engineering development and activities and to demonstrate a range of business skills.
Alternative Exit	Foundation Certificate - FC	Study effectively as reflective and independent learners at level 3 and above Select and apply appropriate basic mathematical techniques to engineering and technology problems Use basic physical models and understand how physical principles underpin a range of engineering and technology disciplines Carry out an effective experimental investigation
Alternative Exit	Certificate of Higher Education (Fnd) - CHEF	Undertake basic mathematical analysis suitable to enable the study of engineering. To apply the basic principles of Electrical circuits, Electronics, Programming, Measurement and Control, Communications and microprocessors to simplified engineering problems. To design, simulate and construct, and test simple circuits. To demonstrate key skills appropriate to the professional engineer.

Alternate Award Names

External Benchmarks

Subject Benchmark Statement
UG-Engineering (2019)

Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length
Full-Time, Face to Face	September	University of Shanghai For Science and Technology	4 Years

Aims and Outcomes

Educational Aims of the Programme

The BEng. programme in Electrical and Electronic Engineering (with Foundation) 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 employer's organisations. The programme aims to: - Provide a programme of study, which develops core knowledge, and understanding of engineering principles, mathematics, and computation, appropriate to the field of Electrical and Electronic engineering. - Enable students to develop specialist knowledge, intellectual and practical skills that will enable them to analyse, investigate and develop robust solutions to Electrical and Electronic engineering 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 which will enable them to undertake responsible roles in industry and commerce. - Provide a degree programme which meets the accreditation requirements of AHEP-3 UK Spec and the needs of industry. - Develop students to work in and manage teams and also work independently at managerial level utilising project management and technical skills. - Encourage students to engage with the development of employability skills by completing a self-awareness statement.

Learning Outcomes

Code	Description
PLO1	Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology.
PLO2	Use a sound evidence-based approach to problem-solving and contribute to continuous improvement.
PLO3	Identify, review and select techniques, procedures and methods to undertake engineering tasks.
PLO4	Contribute to the design and development of engineering solutions.
PLO5	Implement design solutions and contribute to their evaluation.
PLO6	Plan for effective project implementation.
PLO7	Manage tasks, people and resources to plan and budget.
PLO8	Manage teams and develop staff to meet changing technical and managerial needs.
PLO9	Manage continuous quality improvement.
PLO10	Communicate in English with others at all levels.
PLO11	Present and discuss proposals.
PLO12	Demonstrate personal and social skills.
PLO13	Comply with relevant codes of conduct.
PLO14	Manage and apply safe systems of work.

Code	Description
PLO15	Undertake engineering activities in a way that contributes to sustainable development.
PLO16	Carry out and record CPD necessary to maintain and enhance competence in own area of practice.
PLO17	Exercise responsibilities in an ethical manner.

Programme Structure

Programme Structure Description

RP(E)L is not permitted on this programme. This is a requirement of the Chinese Ministry of Education (MOE).

Continuing students who started prior to 2022 will adopt the programme rules on this version.

Programme Structure - 480 credit points	
Level 3 - 120 credit points	
Level 3 Core - 120 credit points	CORE
[MODULE] 3508USST Engineering and Technology Practice Approved 2022.01 - 20 credit points	
[MODULE] 3509USST Foundation Mathematics for Engineering and Technology 1 Approved 2022.02 - 20 credit points	
[MODULE] 3510USST Foundation Mathematics for Engineering and Technology 2 Approved 2022.01 - 20 credit points	
[MODULE] 3511USST Introductory Foundation Physics Approved 2022.01 - 20 credit points	
[MODULE] 3512USST Additional Foundation Physics Approved 2022.01 - 20 credit points	
[MODULE] 3513USST English Language Studies Approved 2022.01 - 20 credit points	
Level 4 - 120 credit points	
Level 4 Core - 120 credit points	CORE
[MODULE] 4514USST Engineering Mathematics 1a Approved 2022.02 - 10 credit points	
[MODULE] 4519USST Engineering Mathematics 1b Approved 2022.01 - 10 credit points	
[MODULE] 4520USST Professional Practice and the Environment Approved 2022.01 - 20 credit points	
[MODULE] 4521USST Analogue Electronics Approved 2022.01 - 20 credit points	
[MODULE] 4522USST Software Development for Embedded Systems Approved 2022.01 - 20 credit points	
[MODULE] 4523USST Digital Electronics Approved 2022.01 - 20 credit points	
[MODULE] 4524USST Engineering Circuit Analysis Approved 2022.01 - 20 credit points	
Level 5 - 120 credit points	
Level 5 Core - 120 credit points	CORE
[MODULE] 5521USST Advanced Mathematics Approved 2022.01 - 10 credit points	
[MODULE] 5522USST Embedded Systems Programming and Applications in the Environment Approved 2022.01 - 20 credit points	
[MODULE] 5523USST Local Communications Systems and Applications Approved 2022.02 - 20 credit points	
[MODULE] 5524USST Instrumentation and Control Engineering Approved 2022.01 - 20 credit points	
[MODULE] 5525USST Electric machines, power systems and clean energy Approved 2022.01 - 20 credit points	
[MODULE] 5526USST Linear Electronics Design and the Environment Approved 2022.01 - 10 credit points	
[MODULE] 5527USST Professional Practice Integrative Project Approved 2022.01 - 20 credit points	
Level 6 - 120 credit points	
Level 6 Core - 120 credit points	CORE
[MODULE] 6568USST Engineering Project Approved 2022.01 - 40 credit points	

[MODULE] 6569USST Process Control and Applications Approved 2022.01 - 20 credit points
[MODULE] 6570USST Automation and IoT Approved 2022.01 - 20 credit points
[MODULE] 6571USST Engineering Management Approved 2022.01 - 10 credit points
[MODULE] 6572USST Signals and Systems with Real World Applications Approved 2022.01 - 10 credit points
[MODULE] 6573USST Power Electronics and the Environment Approved 2022.01 - 20 credit points

Module specifications may be accessed at <https://proformas.ljmu.ac.uk/Default.aspx>

Approved variance from Academic Framework Regulations

Variance

The following criteria will apply for students at Level 5 and Level 6.

Where a module comprises two or more assessment elements (eg examination and coursework), successful completion of the module should require a mark of greater than 10% less than the module pass mark in each element, as well as the overall module mark being above the normal pass mark. This requirement only applies to assessment elements that contribute more than 30% towards the final module mark.

Teaching, Learning and Assessment

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. The economic, Social and Environmental context of engineering operations is delivered by means of lectures and case studies. The use of appropriate case study material is an essential part of teaching in this area. Testing of the knowledge base is through a combination of unseen written examinations, and coursework assignment submissions. Engineering Analysis is developed through lectures, case-studies and coursework assignments. Fundamental principles are delivered predominantly by lectures and laboratory classes. More advanced techniques are delivered by project work and coursework supported by lectures. Engineering Analysis and problem solving skills are assessed through a combination of unseen written examinations, assessed coursework and laboratory work, and project work Design is taught by coursework, individual and group project work supported by an appropriate lecture programme. Design skills are assessed by coursework, individual and group written design project reports, and student presentations. Engineering Practice permeates almost every activity within the programme content and assessment. Assessment of Engineering Practice is varied throughout the programme but is mostly coursework based.

Opportunities for work related learning

The curriculum fosters and embeds employability by the fact that it has been designed based on UKSPEC which details the knowledge, understanding and skills required of a professional engineer, which are transferable internationally. Currently there are no work placement opportunities within the programme although students are encouraged to seek employment during the summer vacation. Further, work based learning is included in the curriculum via case studies and a number of students undertake their final year 'engineering projects' with industry involvement.

Entry Requirements

Type	Description
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Alternative qualifications considered	To be enrolled, students should attend national university entrance examinations and pass the line of second level (Normally their scores should be higher than the provincial score of second level). In China, the college entrance outcomes are divided into 3 levels (1st, 2nd, 3rd). Students will be able to demonstrate efficiency in English to a standard equivalent to IELTS 5.5. USST will operate within the guidance of the LJMU Admissions Policy, please see LJMU Code of Practice for Admissions at: https://www.ljmu.ac.uk/~media/files/ljmu/public-information-documents/student-regulations/guidance-policy-and-process/admissions-policy
Other international requirements	National University Entrance Examinations, Second Level

Extra Entry Requirements