

Electrical and Electronic Engineering

Programme Information

2022.01, Approved

Overview

Programme Code	36569
Programme Title	Electrical and Electronic Engineering
Awarding Institution	Liverpool John Moores University
Programme Type	Degree

Awards

Award Type	Award Description	Award Learning Outcomes
Alternative Exit	Bachelor of Engineering (SW) - SBG	Students who obtain this award will have achieved most but not all of the programme learning outcomes of the equivalent Bachelors award with honours.
Recruitable Target	Bachelor of Engineering Honours (SW) - SBGH	In addition to the learning outcomes for the main target award, demonstrate the professional and personal skills necessary for effective employment within a professional environment.
Target Award	Bachelor of Engineering with Honours - BGH	N/A
Alternative Exit	Certificate of Higher Education - CHE	Undertake basic mathematical analysis suitable to enable the study of engineering. 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 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 design, simulate and construct, and test simple circuits. To demonstrate key skills appropriate to the professional engineer. To demonstrate key skills appropriate to the professional engineer.

Alternative Exit	Diploma of Higher Education - DHE	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. Demonstrate the intermediate engineering skills required of an Engineering Technician. To demonstrate a clear understanding of the business context of engineering development and activities and to demonstrate a range of business skills.
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Alternate Award Names	
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Partner Name	Partnership Type
Beaconhouse Group	Franchised

External Benchmarks

Subject Benchmark Statement	UG-Engineering (2019)
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Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length Programme Length Unit
Sandwich Year Out, Distance Learning	September	Beaconhouse IC Islamabad	4 Year
Full-Time, Distance Learning	September	Beaconhouse IC Islamabad	3 Year

Aims and Outcomes

Educational Aims of the Programme	<p>The BEng. programme in Electrical and Electronic Engineering 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, 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. To encourage students to engage with the development of employability skills by completing a self-awareness statement. For students undertaking a placement year the aim is to provide students with an extended period of work experience at an approved partner that will complement their programme of study. This will give the students the opportunity to develop professional skills relevant to their programme of study, as well as attitude and behaviours necessary for employment in a diverse and changing environment.</p>
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Learning Outcomes

Code	Number	Description
PLO1	1	Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology.
PLO2	2	Communicate in English with others at all Levels
PLO3	3	Present and discuss proposals.
PLO4	4	Demonstrate personal and social skills.
PLO5	5	Comply with relevant codes of conduct.
PLO6	6	Manage and apply safe systems of work.
PLO7	7	Undertake engineering activities in a way that contributes to sustainable development.
PLO8	8	Carry out and record CPD necessary to maintain and enhance competence in own area of practice

PLO9	9	Exercise responsibilities in an ethical manner
PLO10	10	Engage in the creative and innovative development of engineering technology and continuous improvement systems.
PLO11	11	Identify potential projects and opportunities.
PLO12	12	Conduct appropriate research, and undertake design and development of engineering solutions.
PLO13	13	Manage implementation of design solutions, and evaluate their effectiveness.
PLO14	14	Plan for effective project implementation.
PLO15	15	Plan, budget, organise, direct and control tasks, people and resources.
PLO16	16	Lead teams and develop staff to meet changing technical and managerial needs.
PLO17	17	Bring about continuous improvement through quality management.

Course Structure

Programme Structure Description	Students have the option to undertake a placement year. The placement year, module 5508EEEBHG will follow Level 5 and students will be enrolled on a 480 credit honours sandwich programme. The Level 5 mean for the final award mark will be calculated based upon the 240 credits at Level 5. Students successfully completing the assessment of the placement year are eligible for a Sandwich award. Students not undertaking a placement year are registered on the non-sandwich version of the programme.
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Programme Structure - 360 credit points	
Level 4 - 120 credit points	
Level 4 Core - 120 credit points	CORE
[MODULE] 4501EEEBHG Engineering Principles Approved 2022.01 - 20 credit points	
[MODULE] 4501MECBHG Engineering Mathematics 1a Approved 2022.01 - 10 credit points	
[MODULE] 4502EEEBHG Microprocessors and Software Approved 2022.01 - 20 credit points	
[MODULE] 4502MECBHG Engineering Mathematics 1b Approved 2022.01 - 10 credit points	
[MODULE] 4503EEEBHG Electrical Circuit Principles Approved 2022.01 - 20 credit points	
[MODULE] 4504EEEBHG Digital and Analogue Electronics Approved 2022.01 - 20 credit points	
[MODULE] 4505EEEBHG Electrical Engineering Practice 1 Approved 2022.01 - 20 credit points	
Level 5 - No credit points	
Level 5 Core - 120 credit points	CORE
[MODULE] 5501EEEBHG Digital and Embedded Systems Approved 2022.01 - 20 credit points	
[MODULE] 5501MECBHG Engineering Mathematics 2 Approved 2022.01 - 10 credit points	
[MODULE] 5502EEEBHG Electric Machines Approved 2022.01 - 20 credit points	
[MODULE] 5503EEEBHG Linear Electronics Approved 2022.01 - 10 credit points	
[MODULE] 5504EEEBHG Control System Design and Analysis Approved 2022.01 - 20 credit points	
[MODULE] 5505EEEBHG Electrical Engineering Practice 2 Approved 2022.01 - 20 credit points	
[MODULE] 5506EEEBHG Applied Instrumentation Approved 2022.01 - 20 credit points	
Optional placement - 120 credit points	OPTIONAL
Placement Year - 120 credit points	OPTIONAL
[MODULE] 5508EEEBHG Sandwich Year - Electrical and Electronic Engineering Approved 2022.01 - 120 credit points	
Level 6 - 120 credit points	
Level 6 Core - 120 credit points	CORE
[MODULE] 6501EEEBHG Automation Approved 2022.01 - 10 credit points	
[MODULE] 6502EEEBHG Signal Processing Approved 2022.01 - 20 credit points	

[MODULE] 6503EEEBHG Power Electronics, Drives and Systems Approved 2022.01 - 20 credit points
[MODULE] 6504EEEBHG Process Control Approved 2022.01 - 20 credit points
[MODULE] 6504MECBHG Industrial Management Approved 2022.01 - 20 credit points
[MODULE] 6505EEEBHG Engineering Project Approved 2022.01 - 30 credit points

Approved variance from Academic Framework Regulations

Variance
<p>A level average of at least 50% is required for students to transfer from Bachelor's Degree with Honours to Integrated Master's. A level 5 average of at least 50% is also required to progress to Level 6 for students on an Integrated Master's degree. The following criteria will apply for students at Level 5, Level 6 and Level 7: Where a module comprises two or more assessment elements (e.g. 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 (normally 40% or 50%). This requirement only applies to assessment elements that contribute more than 30% towards the final module mark. A credit imbalance between semesters, at Level 5, is permitted for 2020-21 only.</p>

Teaching, Learning and Assessment

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.
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Opportunities for work related learning

Opportunities for work related learning
Students are encouraged to undertake a year's industrial placement between Level 5 and 6. There is a further opportunity to undertake summer placements between academic years to gain valuable industrial experience. There are also opportunities to complete industrially based projects via individual engineering projects at Level 6.

Entry Requirements

Type	Description
A levels	Applicants should have 112 UCAS tariff points including a minimum of 64 points from Maths and one of the following: Physics, Chemistry, Computing, Further Maths, Electronics or Engineering
Alternative qualifications considered	Applicants should also have five GCSE (or equivalent) passes of at least grade C including Mathematics. Applicants must have English language skills at the level required to study the programme, these are: a GCSE 'O Level' English of at least grade C (or IELTS 6.0 or equivalent) ; or the candidate will have studied a first degree that has been taught and assessed in English.
International Baccalaureate	Applicants should have 112 UCAS tariff points including a minimum of 64 points from Higher level Maths and Physics.
Other international requirements	HSSC - Intermediate / Higher Secondary Certificate: entry to level 4 requires a 75% overall award mark ; mathematics passed at 70% or above in final year, passes in physics and chemistry. Students who achieve less than any of the entry requirements stated in this section 'Criteria for Admission', would be required to either: (i) register for an International Foundation Year programme [Level 3]; or (ii) have successfully completed an International Foundation Year programme for entry to Level 4.
BTECs	BTEC Extended Diploma - DMM / 112 UCAS tariff points. Engineering discipline required with a Distinction grade in Further Mathematics unit.

Programme Contacts

Programme Leader

Contact Name

Link Tutor

Contact Name

Gerard Edwards