Programme Specification Document

Approved, 2022.03

Overview

Programme Code	36580
Programme Title	Mechatronics and Autonomous Systems
Awarding Institution	Liverpool John Moores University
Programme Type	Top-up
Language of Programme	All LJMU programmes are delivered and assessed in English
Programme Leader	
Link Tutor(s)	Karl Jones

Partner Name	**Partnership Type**
International College of Business and Technology	Franchised

Awards

Award Type	**Award Description**	**Award Learning Outcomes**
Target Award	Bachelor of Engineering with Honours - BGH	See Learning Outcomes Below
Alternative Exit	Bachelor of Engineering - BG	Demonstrate a broad and comparative knowledge of the general scope of the subject, its different areas and applications, and its interactions with related subjects. A detailed knowledge of a defined subject or a more limited coverage of a specialist area balanced by a wider range of study. In each case, specialised study will be informed by current developments in the subject. Demonstrate a critical understanding of the essential theories, principles and concepts of the subject(s) and of the ways in which these are developed through the main methods of enquiry in the subject.

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	May	ICBT, Colombo	9 Months
Full-Time, Face to Face	October	ICBT, Colombo	9 Months

Aims and Outcomes

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.

Learning Outcomes

Code	Description
PLO1	Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology.
PLO2	Communicate in English about engineering topics.
PLO3	Present and discuss proposals.
PLO4	Demonstrate personal and social skills.
PLO5	Comply with relevant codes of conduct.

Code	Description
PLO6	Manage and apply safe systems of work.
PLO7	Undertake engineering activities in a way that contributes to sustainable development.
PLO8	Carry out and record CPD necessary to maintain and enhance competence in own area of practice
PLO9	Exercise responsibilities in an ethical manner
PLO10	Engage in the creative and innovative development of engineering technology and continuous improvement systems.
PLO11	Identify potential projects and opportunities.
PLO12	Conduct appropriate research, and undertake design and development of engineering solutions.
PLO13	Manage implementation of design solutions, and evaluate their effectiveness.
PLO14	Plan for effective project implementation.
PLO15	Plan, budget, organise, direct and control tasks, people and resources.
PLO16	Lead teams and develop staff to meet changing technical and managerial needs.
PLO17	Bring about continuous improvement through quality management.

Programme Structure

Programme Structure Description

Programme Structure - 120 credit points	
Level 6 - 120 credit points	
Level 6 Core - 120 credit points	CORE
[MODULE] 6600ELEICB Automation and IoT Approved 2022.01 - 20 credit points	
[MODULE] 6612ELEICB Process Control and Applications Approved 2022.01 - 20 credit points	
[MODULE] 6613ELEICB Autonomous Systems and Machine Learning Approved 2022.01 - 20 credit points	
[MODULE] 6613MECICB Dynamics and Control Approved 2022.01 - 10 credit points	
[MODULE] 6656ELEICB Mechatronics and Autonomous Systems Project Approved 2022.01 - 40 credit points	
[MODULE] 6665ELEICB Engineering Management Approved 2022.01 - 10 credit points	

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

Teaching, Learning and Assessment

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

Entry Requirements

Type	Description

Other international requirements	Applicants with the following qualifications may be admitted to the programme: - ICBT Higher Diploma in Mechatronics Engineering; - ICBT Higher Diploma in Electrical and Electronic Engineering; - 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. English Language requirements: Students are required to have a minimum English language level of Sri Lankan General Certificate of Education (Ordinary Level) English Grade C or above, or a pass in the ICBT Academic English Studies course or recognised equivalent, such as the below: • IELTS score of at least 5.5, with a minimum of 5.5. in each element • GCSE/O-Level in English from a UK awarding body grade C • IGCSE English as a First Language grade C • IGCSE English as a Second Language grade C • Internet based TOEFL with an overall score of 72 (UG), 79 (PG) including 17 in Listening, 20 in Writing, 18 in Reading and 18 in Speaking • Pearson Test of English (PTE) • International Baccalaureate (Standard Level Grade 5/Higher Level grade 4 in English) • Cambridge Advanced English Grade C (minimum of “weak” in all four components (listening, reading, speaking and writing). Applicants who obtained their HD or equivalent having been taught in English within the last 24 months are exempt from the requirements to produce evidence of competence in English.

Extra Entry Requirements