Programme Specification Document

Approved, 2022.02

Overview

Programme Code	36321
Programme Title	Mechanical Engineering
Awarding Institution	Liverpool John Moores University
Programme Type	Level 3/4/5 Qualification
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	Validated

Awards

Award Type	**Award Description**	**Award Learning Outcomes**
Target Award	Higher Diploma - HD	See Learning Outcomes Below
Alternative Exit	Certificate of Higher Education - CHE	Demonstrate a knowledge of the underlying concepts and principles associated with Mechanical Engineering, and an ability to evaluate and interpret these within that context. Evaluate the appropriateness of different approaches to solving problems related to Mechanical Engineering. Communicate the results of their study accurately and reliably using structured and coherent arguments. Demonstrate the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility.

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	March	ICBT, Colombo	18 Months
Full-Time, Face to Face	September	ICBT, Colombo	18 Months

Aims and Outcomes

Educational Aims of the Programme

Develop knowledge of essential scientific and engineering principles to be able to apply them to produce routine solutions to familiar mechanical engineering problems and to model and analyse routine mechanical engineering systems, processes and products. Develop specialist knowledge and understanding of the engineering and scientific principles which underpin the design and operation of engineering systems and equipment including thermodynamic, power transmission, static and dynamic fluid systems and combustion processes, and control systems. Develop a range of relevant transferable skills such as team working, communication, management, problem solving, computing and technical computing. Prepare students for employment by equipping them with the with knowledge, understanding and skills expected of holders of a Higher Diploma in Mechanical Engineering to enable them to progress to a range of technical and management careers or to progress to an undergraduate degree or further professional qualification in mechanical engineering or related area Provide the engineering base for progression to Incorporated Engineer level.

Learning Outcomes

Code	Description
PLO1	Demonstrate their knowledge and understanding of essential facts, concepts, theories and principles of Mechanical Engineering and its underpinning science and mathematics.
PLO2	Understand the need for a high level of professional and ethical conduct in engineering.
PLO3	Review and select appropriate mathematical methods, tools and notations proficiently in the analysis and solution of routine engineering problems.
PLO4	Use appropriate scientific, technical or engineering principles to analyse key engineering processes.
PLO5	Demonstrate an ability to apply quantitative methods and computer software relevant to Mechanical and Manufacturing and related engineering disciplines to solve engineering problems.
PLO6	Identify problems and apply appropriate quantitative science and engineering tools to achieve satisfactory outcomes
PLO7	Demonstrate an understanding of and ability to apply a systematic approach to solving Mechanical Engineering problems.
PLO8	Demonstrate a knowledge and understanding of the commercial and economic context of engineering processes.

Code	Description
PLO9	Demonstrate a knowledge of management techniques which may be used to achieve engineering objectives.
PLO10	Demonstrate an awareness of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk) issues.

Programme Structure

Programme Structure Description

The award of the Higher Diploma in Mechanical Engineering requires the completion of 120 credits at Level 4 and 120 credits at Level 5. The award of the Certificate of Higher Education in Mechanical Engineering requires the completion of 120 credits at Level 4.

Structure - 240 credit points	
Level 4 - 120 credit points	
Level 4 Core - 120 credit points	CORE
[MODULE] 4500ICBTEG Engineering Mathematics Approved 2022.01 - 15 credit points	
[MODULE] 4500ICBTME Engineering Mechanics Approved 2022.01 - 15 credit points	
[MODULE] 4501ICBTME Principles of Electrical and Electronic Engineering Approved 2022.01 - 15 credit points	
[MODULE] 4502ICBTME Engineering Drawing and Computer Aided Engineering Approved 2022.01 - 15 credit points	
[MODULE] 4503ICBTME Engineering Materials and Manufacturing Processes Approved 2022.01 - 15 credit points	
[MODULE] 4504ICBTME Instrumentation and Control Systems Approved 2022.01 - 15 credit points	
[MODULE] 4505ICBTME Thermodynamics Approved 2022.01 - 15 credit points	
[MODULE] 4506ICBTME Energy Science and Applications Approved 2022.01 - 15 credit points	
Level 5 - 120 credit points	
Level 5 Core - 120 credit points	CORE
[MODULE] 5500ICBTEG Analytical Mathematics Approved 2022.01 - 15 credit points	
[MODULE] 5500ICBTEL Design Project Approved 2022.01 - 15 credit points	
[MODULE] 5501ICBTEG Engineering Economics Approved 2022.01 - 15 credit points	
[MODULE] 5501ICBTME Machine Design II Approved 2022.01 - 15 credit points	
[MODULE] 5502ICBTME Fluid Mechanics and Hydraulics Approved 2022.01 - 15 credit points	
[MODULE] 5504ICBTME Heat Transfer and Combustion Approved 2022.01 - 15 credit points	
[MODULE] 5505ICBTME Mechatronic Systems and Robotics Approved 2022.01 - 15 credit points	
[MODULE] 5507ICBTME Machine Design I Approved 2022.01 - 15 credit points	

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

Approved variance from Academic Framework Regulations

Variance
There is an approved variance to include 15 credit modules in this programme

Teaching, Learning and Assessment

Lectures, tutorials, problem solving sessions, seminars, workshops, computer sessions, participation in projects. Examinations, assignments, preparation of reports, essays, technological reports, oral presentations, workshops, peer review, computer-based exercises.

Opportunities for work related learning

Work-related learning is included within this programme, so students will have the opportunity to engage in real world projects and activities. The programme has active links with industry and involves employers in the industrial projects, utilising real world case studies wherever possible.

Entry Requirements

Type	Description
Other international requirements	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: • 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). Mature entry: In exceptional circumstances, candidates with non-standard qualifications, may qualify for entry to the course on the basis of considerable work experience in the automotive engineering industry.
Alternative qualifications considered	Completion of 13 years of formal education in Sri Lanka (or equivalent) and have studied A levels in subjects that include Maths, a Science or Technology.Ordinary level qualifications plus the successful completion of a NARIC approved Foundation programme in a mechanical subject.A programme of study that is equivalent to a UK level 3 qualification.

Extra Entry Requirements