

Overview

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|-----------------------------|-----------------------------------|
| Programme Code | 36480 |
| Programme Title | Manufacturing Systems Engineering |
| Awarding Institution | Liverpool John Moores University |
| Programme Type | Top-up |
| Programme Leader | Robert Darlington |
| Link Tutor(s) | |

| Partner Name | Partnership Type |
|---------------------|-------------------------|
| Siemens PLC | |

Awards

| Award Type | Award Description | Award Learning Outcomes |
|-------------------|--|---|
| 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 |
| Target Award | Bachelor of Engineering with Honours - BGH | See Learning Outcomes Below |

| | |
|------------------------------|--|
| Alternate Award Names | |
|------------------------------|--|

External Benchmarks

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|------------------------------------|-----------------------|
| 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 | January | LJMU Taught | 1 Years |
| Full-Time, Face to Face | September | LJMU Taught | 1 Years |

Aims and Outcomes

Educational Aims of the Programme

This programme aim is designed to develop high-level technical and management expertise which will enable graduates to undertake technical leadership roles in a modern interdisciplinary engineering environment, and to make an immediate contribution to their employers organisations.

Learning Outcomes

| Code | Description |
|-------|--|
| PLO1 | Demonstrate knowledge and understanding of the scientific principles underpinning relevant technologies, and their evolution |
| PLO2 | Use creativity and innovation in a practical context |
| PLO3 | Ensure fitness for purpose (including operation, maintenance, reliability etc) |
| PLO4 | Adapt designs to meet their new purposes or applications |
| PLO5 | Demonstrate knowledge and understanding of commercial and economic context of engineering processes |
| PLO6 | Demonstrate knowledge of management techniques which may be used to achieve engineering objectives within that context |
| PLO7 | Demonstrate understanding of the requirement for engineering activities to promote sustainable development |
| PLO8 | Demonstrate awareness of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk) issues. |
| PLO9 | Demonstrate understanding of the need for a high level of professional and ethical conduct in engineering |
| PLO10 | Demonstrate understanding of and ability to use relevant equipment, tools, processes, or products |
| PLO11 | Demonstrate knowledge and understanding of workshop and laboratory practice |
| PLO12 | Demonstrate knowledge and understanding of mathematics necessary to support application of key engineering principles |

| Code | Description |
|-------------|--|
| PLO13 | Demonstrate knowledge of contexts in which engineering knowledge can be applied (e.g. operations and management, application and development of technology, etc) |
| PLO14 | Use and apply information from technical literature |
| PLO15 | Demonstrate awareness of nature of intellectual property and contractual issues |
| PLO16 | Use appropriate codes of practice and industry standards |
| PLO17 | Demonstrate awareness of quality issues and their application to continuous improvement |
| PLO18 | Demonstrate understanding of the principles of managing engineering processes |
| PLO19 | Monitor, interpret and apply the results of analyses and modelling in order to bring about continuous improvement |
| PLO20 | Use the results of analysis to solve engineering problems, apply technology and implement engineering processes. |
| PLO21 | Apply quantitative methods and computer software relevant to their engineering technology discipline(s), frequently within a multidisciplinary context. |
| PLO22 | Apply a systems approach to engineering problems through know-how of the application of the relevant technologies |
| PLO23 | Define a problem and identify constraints. |
| PLO24 | Design solutions according to customer and user needs |
| PLO25 | Identify and manage cost drivers |

Programme Structure

Programme Structure Description

The programme is available to applicants with a HND in an engineering discipline. Students will be enrolled on a 120 credit honours top-up programme.

| Programme Structure - 120 credit points | |
|---|------|
| Level 6 - 120 credit points | |
| Level 6 Core - 120 credit points | CORE |
| [MODULE] 6101MAN Engineering Project Approved 2022.01 - 40 credit points | |
| [MODULE] 6102MSE Manufacturing Systems Approved 2022.01 - 20 credit points | |
| [MODULE] 6103MSE Industrial Management Approved 2022.01 - 20 credit points | |
| [MODULE] 6104MSE Industrial Control Systems and Programming Approved 2022.01 - 40 credit points | |

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

Approved variance from Academic Framework Regulations

| Variance |
|---|
| 6104MSE Control Systems and Programming is offered as a single 40-credit module delivered over two semesters. |

Teaching, Learning and Assessment

Acquisition of knowledge is achieved mainly through lectures, tutorials and directed student-centred learning. Understanding is reinforced through case studies. Testing of the knowledge base is through a combination of unseen written examinations, coursework in the form of case-study reports and coursework assignment submissions. Intellectual skills are developed through case studies and coursework assignments. Open-ended reports and project work is designed to permit students to demonstrate achievement of all the learning outcomes in this category. Testing of intellectual skills is through a combination of unseen written examinations, coursework in the form of case-study reports and coursework assignment submissions. Professional practical skills are developed through the completion of tutorial and assessed work throughout the programme. Subject practical skills are developed in a coordinated and progressive manner throughout the programme. Transferable/key skills are developed in the completion of tutorial and assessed work throughout the programme. Key skills are generally incorporated within modules and related to relevant assessments as appropriate. There are specific modules where the teaching of key skills is more significant than other modules. These are generally at the lower levels and the key skills are taught through subject specific activities. Formative group work is applied in seminars and other peer supported learning activities.

Opportunities for work related learning

Students enrolling on this programme will be employed in roles that enable them to apply their learning at work. The combination of theoretical study, applied learning, and on-the-job experience is the principal idea behind the programme.

Entry Requirements

| Type | Description |
|------|---|
| NVQ | 240 credits from a HND where the learning outcomes have been mapped against the Engineering Council's UK Standard for Professional Engineering Competence for Incorporated Engineer (IEng) registration (AHEP www.engc.org). |