

Overview

Programme Code	31465
Programme Title	Marine and Offshore Engineering
Awarding Institution	Liverpool John Moores University
Programme Type	Masters
Language of Programme	All LJMU programmes are delivered and assessed in English
Programme Leader	Philip Davies
Link Tutor(s)	

Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Master of Science - MS	See Learning Outcomes Below
Alternative Exit	Postgraduate Diploma - PD	<p>Demonstrate comprehensive knowledge and a critical awareness of essential facts, concepts, theories and principles of mechanical, marine and offshore engineering, and its underpinning science and mathematics. They must have an appreciation of the wider multidisciplinary engineering context and its underlying principles</p> <p>Demonstrate knowledge and understanding of mathematical and computer models relevant to the marine and related engineering disciplines, and an appreciation of their limitations</p> <p>Demonstrate an understanding of concepts from a range of areas including some outside engineering, and the ability to apply them effectively in engineering projects</p> <p>Demonstrate a critical awareness of developing technologies related to marine and offshore engineering</p> <p>Demonstrate an awareness of the limitations of current knowledge and the changing nature of technologies and society, and the need to gain new knowledge through further study in the field of marine and offshore engineering</p> <p>Demonstrate a comprehensive understanding of the principles of management and engineering business practice, techniques for evaluation of technical and business risks and their limitations and potential pitfalls</p> <p>Critically evaluate designs, processes and products, and identify and make improvements by using problem solving skills and appropriate software /and hardware</p> <p>Apply appropriate analytical and modelling techniques to a range of engineering problems and demonstrate the ability to apply the appropriate strategies to the application of analysis tools to solve practical engineering problems</p> <p>Prepare and present technical/business reports</p> <p>Instigate, plan and manage engineering/technical projects, taking into account commercial, industrial, and customer requirements</p> <p>Communicate effectively in a professional manner through the generation of written reports and the production of supporting diagrams to a level commensurate with level 7 study and the duties and status of a professional engineer</p> <p>Display and evidence enhanced self-learning skills appropriate to the attainment of a FHEQ level 7 qualification</p> <p>Work within time constraints and an ability to prioritise workloads in order to deliver to deadlines</p>

Alternate Award Names	
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External Benchmarks

Subject Benchmark Statement	PGT-Engineering (2020)
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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

The MSc programme in Marine and Offshore Engineering is designed to develop in the student a high level of technical and managerial expertise that is required to practice engineering in a marine and offshore environment. The MSc programme is designed to allow for academic development of engineering graduates such that after completion of the programme they can perform an appropriate engineering function within a range of marine and offshore industries. To achieve these broad aims the programme has specific educational aims: Development of advanced analytical and experimental skills that will allow the successful graduate to design new processes/equipment/structures/services and provide them with the skills to critically analyse existing designs, their functionality and expected reliability. Development of advanced engineering design skills that will allow the students to apply appropriate design strategies for the creation of marine and offshore engineering components and systems. Develop in the students and provide opportunities for practising communication skills commensurate with the achievement of a post-graduate qualification and the duties associated with the status of a professional engineer. Development of transferable skills and professional behavioural traits above those associated with a graduate that will allow students who complete the programme to hold responsible technical and managerial roles within a range of marine and offshore engineering industries. Provide the students with a well-developed academic base for further learning/research/personal and professional development. Develop in the students an ability to conduct scholarly activity and undertake self-driven research/project work and to deliver high quality results.

Learning Outcomes

Code	Description
PLO1	Demonstrate comprehensive knowledge and a critical awareness of essential facts, concepts, theories and principles of marine and offshore engineering, and its underpinning science and mathematics.
PLO2	Apply appropriate analytical and modelling techniques to a range of engineering and management problems and demonstrate the ability to apply the appropriate strategies to the application of analysis tools to solve practical problems
PLO3	Plan and execute a series of investigations (either experimental or computer based), analyse experimental results, and draw comprehensive conclusions based on observed results and published data
PLO4	Prepare and present technical/business reports and presentations to a professional level and speak with authority on their engineering discipline
PLO5	Conduct research/scholarly activity in an effective manner and apply new methods to the solution of novel engineering and management problems in such a way as to deliver the identified outcomes
PLO6	Instigate, plan and manage engineering/technical projects, taking into account commercial, industrial, and customer requirements

Code	Description
PLO7	Communicate effectively in a professional manner through the generation of written reports and the production of supporting diagrams to a level commensurate with level 7 study and the duties and status of a professional engineer.
PLO8	Critically evaluate own academic and professional performance, and organise/plan self-learning for the purpose of continuing professional development
PLO9	Work within time constraints and an ability to prioritise workloads in order to deliver to deadlines
PLO10	Generate and synthesise evidence required in the solution of complex marine and offshore engineering and management problems
PLO11	Demonstrate comprehensive knowledge and understanding of mathematical and computer models relevant to the marine and related engineering disciplines, and an appreciation of their limitations
PLO12	Demonstrate an understanding of concepts from a range of areas including some outside engineering, and the ability to apply them effectively in marine and offshore engineering projects
PLO13	Demonstrate a critical awareness of developing technologies related to marine and offshore engineering
PLO14	Demonstrate an awareness of the limitations of current knowledge and the changing nature of technologies and society, and the need to gain new knowledge through further study in the field of marine and offshore engineering
PLO15	Demonstrate a comprehensive understanding of the principles of management and engineering business practice techniques for evaluation of technical and business risks and their limitations and potential pitfalls
PLO16	Demonstrate the skills necessary to plan, conduct and present findings of a programme of research
PLO17	Formulate and test hypotheses, by identifying and undertaking appropriate methods to design/model, analyse and solve industry related problems to meet a specification of a particular engineering system
PLO18	Critically evaluate designs, processes and products, and identify and make improvements by using problem solving skills and appropriate software /and hardware

Programme Structure

Programme Structure Description

120 credits of core modules are delivered over the semesters one and two. The 60 credit MSc Project module is delivered over the summer period. In order to be eligible for the award of a Post Graduate Diploma a student must achieve 120 credits from the taught modules.

Programme Structure - 180 credit points	
Level 7 - 180 credit points	
Level 7 Core - 180 credit points	CORE
[MODULE] 7000MSC MSc Project Approved 2022.02 - 60 credit points	
[MODULE] 7000MTS Marine Technology Management Approved 2022.01 - 20 credit points	
[MODULE] 7001MTS Marine Maintenance and Asset Management Approved 2022.01 - 20 credit points	
[MODULE] 7007MSC Marine Design Engineering Approved 2022.01 - 20 credit points	
[MODULE] 7008MSC Offshore Engineering Approved 2022.02 - 20 credit points	
[MODULE] 7020MSC Research Methods Approved 2022.02 - 10 credit points	
[MODULE] 7156MAR Project Management Approved 2022.01 - 10 credit points	
[MODULE] 7335MECH Maritime and Offshore Safety Analysis Approved 2022.01 - 20 credit points	
Level 7 Optional Year - 120 credit points	OPTIONAL
Level 7 Placement Year - 120 credit points	OPTIONAL

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

Teaching, Learning and Assessment

Acquisition of knowledge is achieved mainly through lectures and directed student-centred learning. Student-centred learning is used where appropriate resource material is available. Understanding is reinforced through practical work, case-studies and simulation work. The students must appreciate the social, environmental, ethical, economic and commercial implications of their engineering judgements. In order to achieve this, the students' intellectual skills are developed through design case-studies, simulation work and coursework assignments. Open-ended practical and project work is designed to permit students to demonstrate achievement of all the learning outcomes in this category. Subject specific practical skills are developed in a co-ordinated manner throughout the programme. Modules undertaking such skills development typically have assessments of a formative and summative nature that look at skills and academic aspects of the engineering process. Transferable skills permeate every activity within the programme content and assessment. Skills are assessed through the completion of design and problem solving coursework through the generation of written reports, presentations and the production of supporting diagrams. Application of skills associated with personal management and research are also embedded within the self-managed MSc project, and the associated assessment via written report, presentation and oral examination. Testing of the knowledge base is through a combination of unseen written examinations, assessed coursework in the form of case-study reports and coursework assignment submissions. Analysis, design and problem solving skills are assessed through a combination of unseen written examinations, assessed coursework in the form of case-study reports and coursework assignment submissions. Practical skills are assessed through case-study coursework reports, group and individual projects, research reports, and through oral and written examinations.

Opportunities for work related learning

Case studies and examples from industry and research are used wherever appropriate.

Entry Requirements

Type	Description
Alternative qualifications considered	<p>The normal requirements for entry to the award programme are as follows: 1. A Chief Engineers or 2nd Engineers certificate of competency. 2. A lower second class (2:2) or higher honours degree in an engineering discipline. 3. A lower second class (2:2) or higher honours degree in mathematics or a physical science, together with experience in a field relevant to engineering. 4. Graduate or corporate membership of a suitable engineering professional body. For example the IMarEST, The Institute of Mechanical Engineers, The Institution Engineering and Technology or the Institute of Measurement and Control, 5. Other qualifications or experience deemed to be equivalent to the above. In particular, mature students must provide evidence of adequate educational and/or industrial experience to assure a reasonable chance of success on the award programme. References will normally be required for all candidates. All applicants must provide evidence of competence in English. The level of English language required should be equivalent to 6.0 for IELTS within the previous 24 months. Equivalents to this score are: 1. UK GCSE English grade C or above 2. Cambridge Examination Board: Advanced Certificate of English, grade C or above. Applicants who have studied and successfully achieved a UK Degree programme within the previous 24 months are exempt from the requirements to produce evidence of competence in English.</p>

Extra Entry Requirements