

PROGRAMME SPECIFICATION

Diploma of Higher Education in Marine Engineering

Awarding institution	Liverpool John Moores University
Teaching institution	Springdale Academy Of Maritime Education (SAMET)
JACS Code	H000
Programme Duration	Full-Time: 2 Years
Language of Programme	All LJMU programmes are delivered and assessed in English
Subject benchmark statement	Engineering Council UK Spec and MCA
Programme accredited by	
Description of accreditation	
Validated target and alternative exit awards	Diploma of Higher Education in Marine Engineering Certificate of Higher Education in Marine Engineering
Link Tutor	Eddie Blanco Davis

Educational aims of the programme

The programme is designed to prepare students for their future career by providing them with the initial educational requirements of a professional engineer together with a suitable range of transferable and management skills appropriate to the practice of marine engineering. This will enable graduates to operate effectively in their initial appointment and provide a strong basis for future career development.

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 mechanical and marine engineering.
- Enable students to develop specialist knowledge, intellectual and practical skills that will enable them to analyse, investigate and develop robust solutions to mechanical and marine 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 programme which meets the needs of industry.
- Encourage students to engage with employability skills by completing a self-awareness statement.

Alternative Exit/ Interim Award Learning Outcomes - Certificate of Higher Education

A student who is eligible for this award will be able to:

- Undertake basic mathematical analysis.
- Apply the basic principles of applied mechanics, thermodynamics and fluid mechanics, materials science and electrical engineering to simplified engineering problems.
- Demonstrate a basic understanding of naval architecture and general marine engineering knowledge.
- Demonstrate key skills appropriate to the professional engineer.

Target award Learning Outcomes - Diploma of Higher Education

A student successfully completing the programme of study will have acquired the following subject knowledge and understanding as well as skills and other attributes.

A student who is eligible for this award will be able to:

1. Demonstrate a knowledge and understanding of scientific principles and methodology necessary to underpin their education in marine engineering, to enable appreciation of its scientific and engineering context, and to support their understanding of historical, current, and future developments and technologies
2. Illustrate a knowledge and understanding of mathematical principles necessary to underpin their education in marine engineering and related engineering disciplines and to enable them to apply mathematical methods, tools and notations proficiently in the analysis and solution of engineering problems.
3. Demonstrate an ability to apply and integrate knowledge and understanding of other engineering disciplines to support study of marine and related engineering disciplines.
4. Understand engineering principles and the ability to apply them to analyse key engineering processes.
5. Illustrate an ability to identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques.
6. Demonstrate an ability to apply quantitative methods and computer software relevant to marine and related engineering disciplines to solve engineering problems
7. Apply appropriate quantitative science and engineering tools to the analysis of problems.
8. Demonstrate an understanding of, and ability to apply a systems approach to engineering problems.
9. Demonstrate a knowledge and understanding of the commercial and economic context of engineering processes
10. Illustrate a knowledge of management techniques which may be used to achieve engineering objectives within that context.
11. Understand the requirement for engineering activities to promote sustainable development.
12. Demonstrate an awareness of the framework of relevant legal requirements governing engineering activities, including personnel, health, safety, and risk (including environmental risk) issues.
13. Understand the need for a high level of professional and ethical conduct in engineering.
14. Develop practical engineering skills acquired through, for example, work carried out in laboratories and workshops; in individual and group project work; in design work; and in the development and use of computer software in design, analysis and control. Evidence of group working is expected.
15. Investigate and define a problem and identify constraints including environmental and sustainability limitations, health and safety and risk assessment issues.
16. Understand customer and user needs and the importance of considerations such as aesthetics.
17. Identify and manage cost drivers.
18. Demonstrate creativity to establish innovative solutions.
19. Illustrate creativity to establish innovative solutions.
20. Ensure fitness for purpose for all aspects of the problem including production, operation, maintenance and disposal.
21. Manage the design process and evaluate outcomes.
22. Demonstrate a knowledge of the characteristics of particular equipment, processes or products.
23. Develop engineering workshop and laboratory skills.
24. Demonstrate an understanding of contexts in which engineering knowledge can be applied (e.g. operations and management, technology, development, etc).
25. Demonstrate skills in problem solving, communication, and working with others.
26. Understand the use of technical literature and other information sources.
27. Demonstrate an understanding of appropriate codes of practice and industry standards.
28. Illustrate an awareness of quality issues.
29. Demonstrate an ability to work with technical uncertainty.

Teaching, Learning and Assessment

The methods used to enable outcomes to be achieved and demonstrated are as follows:

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. Understanding is reinforced through case-studies.

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, coursework in the form of case-study reports 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 such as computational techniques are delivered by project work supported by a small number of lectures.

Engineering Analysis and problem solving skills are assessed through a combination of unseen written examinations, assessed coursework, and laboratory work.

Design is taught almost exclusively by individual and group project work supported by a lecture programme appropriate to the demands of the project

Design skills are assessed by individual and group written design 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.

Programme structure - programme rules and modules

The programme can only be studied full-time and is for professional Merchant Navy Officers to study towards their EOOW & eventual Chief Engineers certificate of competency.

Students are required to study and pass 120 credits at level 4 & 5 making a total of 240 credits for the award DipHE.

The DipHE programme is also integrated with applicable short courses to meet professional qualification requirements.

Students who have previously enrolled on the SAMET CertHE and achieved 120 credits are eligible to transfer to level 5 of the DipHE.

Level 5	Potential Awards on completion	Diploma of Higher Education
Core	Option	Award Requirements
5550SAM Thermodynamics and Fluid Mechanics 2 (20 credits) 5551SAM Naval Architecture (20 credits) 5552SAM Applied Mechanics 2 (20 credits) 5553SAM Engineering Mathematics 2 (10 credits) 5554SAM Electrical, Electronic and Control Engineering (10 credits) 5555SAM Marine Engineering Knowledge (20 credits) 5556SAM Marine Engineering Practice (20 credits)		120 core credits at level 5 0 option credits at level 5

Level 4	Potential Awards on completion	
Core	Option	Award Requirements
4550SAM Thermodynamics and Fluid Mechanics (20 credits) 4551SAM Materials (20 credits) 4552SAM Applied Mechanics (20 credits) 4553SAM Engineering Mathematics (20 credits) 4554SAM Marine Electrical Systems (20 credits) 4555SAM Engineering Knowledge and Naval Architecture (20 credits)		120 core credits at level 4 0 option credits at level 4

Information about assessment regulations

All programmes leading to LJMU awards operate within the University's Academic Framework.
<https://www.ljmu.ac.uk/about-us/public-information/academic-quality-and-regulations/academic-framework>

Opportunities for work-related learning (location and nature of activities)

The programme is intended to support the achievement of a professional qualification and so is entirely work related.

Practical sessions including access to specialist equipment will be integrated into the module teaching, and workshops will take place throughout the course.

Criteria for admission

Overseas qualifications

Students need to have attained a minimum 50% in aggregate in 10+2 Science.

Students are strongly advised to have a Merchant navy medical examination before entry.

Students with alternate equivalent qualifications can be accepted on an individual basis.

Students whose first language is not English will be expected to have attained IELTS 5.5 average or equivalent within the previous two years.

External Quality Benchmarks

All programmes leading to LJMU awards have been designed and approved in accordance with the UK Quality Code for Higher Education, including the Framework for Higher Education Qualifications in the UK (FHEQ) and subject benchmark statements where applicable.

The University is subject to periodic review of its quality and standards by the Quality Assurance Agency (QAA) Published review reports are available on the QAA website at www.qaa.ac.uk

Programmes which are professionally accredited are reviewed by professional, statutory and regulatory bodies (PSRBs) and such programmes must meet the competencies/standards of those PSRBs.

Support for students and their learning

The University aims to provide students with access to appropriate and timely information, support and guidance to ensure that they are able to benefit fully from their time at LJMU. All students are assigned a Personal Tutor to provide academic support and when necessary signpost students to the appropriate University support services.

Students are able to access a range of professional services including:

- Advice on practical aspects of study and how to use these opportunities to support and enhance their personal and academic development. This includes support for placements and careers guidance.
- Student Advice and Wellbeing Services provide students with advice, support and information, particularly in the areas of: student funding and financial matters, disability, advice and support to international students, study support, accommodation, health, wellbeing and counselling.
- Students studying for an LJMU award at a partner organisation will have access to local support services

Methods for evaluating and improving the quality and standards of teaching and learning

Student Feedback and Evaluation

The University uses the results of student feedback from internal and external student surveys (such as module evaluations, the NSS and PTES), module evaluation questionnaires and meetings with student representatives to improve the quality of programmes.

Staff development

The quality of teaching is assured through staff review and staff development in learning, teaching and assessment.

Internal Review

All programmes are reviewed annually and periodically, informed by a range of data and feedback, to ensure quality and standards of programmes and to make improvements to programmes.

External Examining

External examiners are appointed to programmes to assess whether:

- the University is maintaining the threshold academic standards set for awards in accordance with the FHEQ and applicable subject benchmark statements
- the assessment process measures student achievement rigorously and fairly against the intended outcomes of the programme(s) and is conducted in line with University policies and regulations
- the academic standards are comparable with those in other UK higher education institutions of which external examiners have experience
- the achievement of students are comparable with those in other UK higher education institutions of which the external examiners have experience

and to provide informative comment and recommendations on:

- good practice and innovation relating to learning, teaching and assessment observed by external examiners
- opportunities to enhance the quality of the learning opportunities provided to students

Please note:

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content, teaching, learning and assessment methods of each module can be found in module and programme guides.