

University of Plymouth

Faculty of Science and Engineering

School of Engineering, Computing and Mathematics

Programme Specification

MEng (Hons) Marine Technology (4452)

September 2024

1. MEng (Hons) Marine Technology (MT)

Final award title(s): MEng (Hons) Marine Technology

MEng (Hons) Marine Technology with Composites (from
AY2020/2021 entry)

Level 4 Intermediate award title: Certificate of Higher Education (Cert. HE)

Level 5 Intermediate award title: Diploma of Higher Education (Dip. HE)

Level 6 Intermediate award title: BEng (Hons) Marine Technology
BEng (Hons) Marine Technology with
Composites (from AY2020/2021 entry)

UCAS code : J612

HECOS code : MT : 100194 / 100207 **MTC :** 100194 / 101217

produces skilled, competent and highly employable graduates suitable to a diverse range of industries, including the automotive, the aerospace as well as the maritime, sectors. The awards are actively supported by an Industrial Advisory Board of regional and many national employers – members are involved in project presentations, industry visits and work placements. A BEng 'intermediate' award is available for students who choose to withdraw from the MEng programme and seek earlier employment opportunities.

This programme has 2 distinct exit awards: **Marine Technology (MT)** and a pathway in **Marine Technology with Composites (MTC)**. Differentiation between awards is achieved mainly through the study of **acquir-0.002 Tc 3.003 Tw -31.9 (f)-5 (r(s))4 (-0.002 T**

5. Relevant QAA Subject Benchmark Group

The QAA Engineering Subject Benchmark Statement² defines the academic standard expected of graduates with an engineering degree. The defined learning outcomes are those published by the Engineering Council in the UK Standard for Professional Engineering Competence (UK-SPEC): The Accreditation of Higher Education Programmes³, AHEP 3rd edition and AHEP 4th edition.

6. Programme Structure

The MEng Marine Technology programme structure has been developed in line with the new university Education and Student Experience strategy. To meet the Subject Benchmark requirements³, modules are delivered, where possible, in a 60 credits per semester format and include elements of both research informed teaching and industry professional requirements.

The programme was developed from the long standing Marine Technology, but was revised to account for feedback from accrediting bodies and student liaison committees. The overwhelming majority of the content and learning outcomes are the same, but the organisation of delivery has been refined. An example of this is within stage 1, where to improve the student learning experience and to provide a more effective delivery mode for stage one modules, the “Engineering Design” and the “Engineering Practice and Experimental Techniques” modules extend over two semesters. These modules bring together students from the different engineering programmes to gain a basic understanding of Design and CAD skills, and to apply problem-based, and student-centred, learning, with a view to developing a more holistic understanding of their subject and how it sits within a wider engineering context.

A significant change is that the entrants to the BEng/MEng programme have the opportunity of a “with Composites” pathway in Stages 4 & 5, as opposed to Composites being studied as a separate programme.

The academic year 2020-2021 was the first year of transition towards this new format of delivery, with the introduction of Stage 1 and Stage 5 for the MEng programmes. The new format for stages 2 and 4 has been introduced in academic year 2021-2022.

The following tables summarise the year-by-year content delivered since the academic year 2021-2022.

² <https://www.qaa.ac.uk/thequality-code/subjectbenchmarkstatements/subjectbenchmarkstatementengineering>
<https://www.qaa.ac.uk/thequality-code/subjectbenchmarkstatements/subjectbenchmarkstatementengineering>

³ [The Accreditation of Higher Education Programmes: Third edition](https://www.engc.org.uk/media/3464/ahep-third-edition.pdf)
<https://www.engc.org.uk/media/3464/ahep-third-edition.pdf>

S1	MARN342	20	Naval Architecture 2	70			30
S2	MARN341	20					

- x To give students with a variety of entry qualifications an opportunity to realise their potential.
- x To enrich curriculum content and teaching quality through the professional and research expertise of staff, and through links with industry.
- x To encourage and support students to develop and learn to apply technical and transferable skills that will facilitate life-long learning and continuing professional development.
- x To produce graduates who can make a significant contribution to their professional field.

The programme aims to produce graduates that should be able to:

- x Adopt an integrated approach to marine design, manufacturing, materials and engineering at an advanced level;
- x Demonstrate appropriate knowledge of the scientific principles which underpin the practice of engineering in a marine technology context at an advanced level;
- x Apply analytical skills in applying advanced principles of engineering science to the solution of problems in the context of complex naval architecture, marine technology and marine engineering systems;
- x Apply practical skills in engineering measurement and instrumentation, including the use of virtu

Marine Technology is underpinned by science and mathematics, and other associated disciplines, as defined by the relevant accrediting professional engineering institutions. On completion, graduates will need:

- 1) SM1m need:

therefore need the skills to manage their activities and to be aware of the various legal and ethical constraints under which they must operate, including:

- 1) EL1m
Understanding of the need for a high level of professional and ethical conduct in engineering; a knowledge of professional codes of conduct and how ethical dilemmas can arise.
- 2) EL2
Knowledge and understanding of the commercial, economic and social context of engineering processes in a marine technology context.
- 3) EL3m
Knowledge and understanding of management techniques that, including project and change management, may be used to achieve engineering objectives, their limitations, and how they may be applied appropriately.
- 4) EL4
Understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate.
- 5) EL5m
Awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues, and an awareness that these may differ internationally.
- 6) EL6m
Knowledge and understanding of risk issues, including health and safety, environmental and commercial risk, risk assessment and risk management techniques and an ability to evaluate commercial risk.
- 7) EL7m
Understanding of the key drivers for business success, including innovation, calculated commercial risks and customer satisfaction.

8.5. Practical Skills

This is the practical application of advanced engineering skills, combining theory and experience, and the use of relevant knowledge and skills. On successful completion graduates should have developed:

- 1) P1
Understanding of contexts in which engineering knowledge is applicable to operations and management, and to the application and development of marine technology.
- 2) P2m
Knowledge of characteristics of particular equipment, processes or products, with extensive knowledge and understanding of a wide range of engineering materials and components appropriate to marine technology.
- 3) P3
Ability to apply relevant practical and laboratory skills, and at an advance level.
- 4) P4m
Understanding of the use of technical literature and other information sources in marine technology.
- 5) P5
Knowledge of relevant legal and contractual issues in a marine technology context.

- 6) P6
Understanding of codes of practice and industry standards appropriate to marine technology.
- 7) P7
Awareness of quality issues and their application to continuous improvement
- 8) P8m
Ability to work with technical uncertainty.
- 9) P9m
A thorough understanding of current practice in marine technology, and its limitations, including appreciation of new developments.
- 10) P10m
Ability to apply advanced techniques in marine technology, taking account of a range of commercial and industrial constraints.

M10.	Adopt a holistic and proportionate approach to the mitigation of security risks	New for AHEP4
M11.	Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion	New for AHEP4
M12.	Use practical laboratory and workshop skills to investigate complex problems	• P3
M13.	Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations	• P2m
M14.	Discuss the role of quality management systems and continuous improvement in the context of complex problems	• P7
M15.	Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights	• EL2; EL3m; EL5m; EL7m • P1; P5; P10m
M16.	Function effectively as an individual, and as a member or leader of a team. Evaluate effectiveness of own and team performance	• P11m • G1; G3m; G4
M17.	Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used	• D6 • G1
M18.	Plan and record self-learning and development as the foundation for lifelong learning/CPD	• G2

The Tables in Appendix 2 show how the modules outlined in the programme structure shown earlier contribute to achieve the AHEP4 LOs.

10. Admissions Criteria, including APCL, APEL and DAS arrangements

All applicants must have GCSE (or equivalent) Maths and English at Grade C (4) or above.

Entry Requirements for all three MEng programmes

120 - 136 UCAS points, a typical offer would be A-level/AS-level

backgrounds, mature students and people with disability. Disability Services supports disabled students across the University¹⁰.

Partnership Arrangements

Direct Entry - FDS Sc students from Partner College -

Where a progression agreement exists with a Partner College then direct entry to Stage 4 is possible for students progressing with a good FdSc, provided that a suitable attainment level can be demonstrated. Where the attainment level is judged to be lower, then progression to Stage 2 (Level 5) is required.

11. Progression criteria for Final and Intermediate Awards

- x 120 credits at Level 4 are required for the award of Certificate of Higher Education (Cert. HE).

- x 120 credits at Level 4 plus 120 credits at Level 5 are required for the award of Diploma of Higher Education (Dip. HE).

- x The award of BEng (Hons) requires achievement in 360 credits, of which 120 are at Level 4, 120 are at level 5, and 120 are at level 6. Where a student does not achieve 360 credits, but achieves 320 credits, then a BEng degree can be awarded.

The Honours classification follows the standard University Regulations for Bachelors' Degrees with weightings as follows:

- Level 4 (Stage 1): 10% (from the best 80 credits)
- Level 5 (Stage 2): 30%
- Level 6 (Stage 4): 60%

- x The award of MEng (Hons) will be awarded to a student who has achieved 480

Table

Table 2.B MEng (Hons) Marine Technology with Composites (for AY 20/21 and onwards)

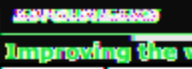

 Improving the world through engineering		INSTITUTION OF MECHANICAL ENGINEERS									
nod.	level	Module	credit	(%)	(%)	(%)	(%)	atory	Scien	Engineering	Design
[The body of the table is completely redacted with a black box.]											

Table 2.C MEng (Hons) Marine Technology (for AY 24/25 and onwards)

Table 2.D MEng (Hons) Marine Technology with Composites (for AY 24/25 and onwards)

 INSTITUTION OF MECHANICAL ENGINEERS <small>Improving the world through engineering</small>		Programme Title (MEng): MEng (Hons) Marine Technology with Composites																	
		Stage 1																	
		Stage 2																	
		Stage 3																	
		Stage 4																	
		Stage 5																	
		Stage 6																	
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Total LOs all modules		17	18	15	10	8	7	3	5	6	6	4	10	11	2	3	9	9	6
Total LOs compulsory modules		17	18	15	10	8	7	3	5	6	6	4	10	11	2	3	9	9	6
ENGR105		20	50																
ENGR107		20																	
ENGR103		20	50																
ENGR108		20	70	30															
ENGR104		20	50																
MATS236		20	50																
MECH236		20	50																
MECH237		20	70	30															
MARN220		20	50																