PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	MSc in Marine Technology
4	**Programme Title**	MSc Marine Engineering MSc Naval Architecture MSc Marine Engineering with Preliminary Year MSc Naval Architecture with Preliminary Year MSc Offshore, Subsea and Pipeline Engineering MSc Shipping and Logistics
5	**Programme Code**	5068 F/P 5091 F/P 5072 F 5078 F 5427 F/P 5276 F
6	**Programme Accreditation**	RINA, IMarEST
7	**QAA Subject Benchmark(s)**	Engineering
8	**FHEQ Level**	7
9	**Last updated**	May 2023

10 Programme Aims

The overall aims of the multi-disciplinary programme are to produce graduates who have developed well founded knowledge, skills and understanding within one or more specific subject areas of marine technology in its widest sense. The coupling of a sound theoretical grasp of the subject with practical application, awareness of responsibilities to society and the environment, and the requirement for flexibility, are regarded as essential to the process of becoming a professional marine technologist.

Specifically, the programme aims:

- To equip students having diverse backgrounds with knowledge skills and understanding in their chosen programme.
- To equip students with appropriate transferable practical skills in computing and information technology, data collection and analysis, problem formulation and solving and communication skills, both oral and written.
- To enable students to enhance their learning experience, particularly with respect to the project, by benefiting from the School's exceptional research led teaching.
- To encourage students to develop awareness and responsible attitudes towards the needs of society and the environment in the application of their engineering knowledge, including a regard for safety appropriate to their profession.
- To produce graduates who are recognised by the maritime industry worldwide as fully equipped to contribute at a professional engineering level, especially where a Masters degree is required.
- To instil in students an awareness of their professional responsibilities and the need for their own continuing professional development.
- To contribute to the working environment within the School, such that students enjoy the University learning experience and wish to maintain contact with the School in its future activities, professionally as well as socially.

- To provide a programme which meets the FHEQ at Masters level and which takes appropriate account of the subject benchmark statements appropriate to the course title.

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to the benchmark statements for engineering.

Knowledge and Understanding

On completing the programme students should:

A1. Mathematics and physics appropriate to marine technology and related fields;
A2. Detailed knowledge and understanding of facts, concepts, principles and theories relevant to the student's chosen area of specialisation within Marine Technology;
A3. Knowledge of IT applications to the selected fields of study;
A4. Conceptual and detailed design appropriate to their area of specialisation;
A5. Where appropriate, management principles and business practices, including professional and ethical responsibilities;
A6. The role of marine technologists in society and the constraints within which their engineering judgement will be exercised;
A7. Production practice including codes of practice, standards and regulatory framework;
A8. The assessment of safety risks, and the legislative framework for safety.

Teaching and Learning Methods

Acquisition of A.1 and A.2 is through a combination of lectures, tutorials, example classes, laboratory activities and coursework. Outcome A.3 is achieved by lectures, tutorials and, where appropriate, hands-on computer exercises. Acquisition of A.4 and A.5 is through lectures, tutorials, case studies, laboratory experiments and student investigations and presentations. Outcome A.6 depends primarily on lectures and tutorial studies.

The broader professional outcomes, A.7, are taught by lectures and coursework studies. Outcome A.8 is formally taught in lectures and developed in tutorials, but is also central to experimental project investigations.

Throughout the student is encouraged to undertake independent reading both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.

Assessment Strategy

Formative assessment occurs through tutorial examples and coursework. The primary means of assessing factual knowledge is the closed book examination. This is supported by assessed coursework and case studies, which involve both written and oral presentations. In depth individual learning frequently forms part of the project, which is assessed by dissertation and, for selected students, viva voce examination.

Formal examinations are used to assess intellectual abilities. Assessed coursework provides further opportunities to demonstrate intellect and ability. The project, which is assessed by dissertation and, for selected students, viva voce examination, provides final evidence of the levels attained.

Intellectual Skills

Within the context of his chosen discipline, a successful student will be able to:

B1. Use appropriate mathematical methods for modelling and analysing problems in marine technology;
B2. Select appropriate experimental set-up and procedures;
B3. Carry out laboratory experiments in a professional manner.
B4. Write computer software and use it, or commercial packages, for appropriate tasks;
B5. Design a system, component or process in selected fields;

B6. Test design ideas practically through laboratory work or simulation with technical analysis and to evaluate the results critically;
B7. Search for information for the further development of ideas;
B8. Apply engineering techniques taking account of industrial and commercial constraints;
B9. Manage projects effectively.

Teaching and Learning Methods

Throughout the student is encouraged to undertake independent reading both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.

Where appropriate, B1 is reinforced in lectures, but learning is principally in tutorials and assignments.

The abilities characterised by B2 – B4 are initially encountered in lectures, practical classes and case studies, but are developed principally during the research project.
Acquisition of B5 occurs through lectures and case studies and may form a major part of the project. Experimental, research and design skills are further developed through coursework activities, laboratory experiments, and research and design projects. Individual feedback is given to students on all work produced. Creative and design skills are developed through design and project work. These activities develop the abilities listed in B6-B9.

Assessment Strategy

Formative assessment occurs through tutorial examples and coursework. The primary means of assessing factual knowledge is the closed book examination. This is supported by assessed coursework and case studies, which involve both written and oral presentations. In depth individual learning frequently forms part of the project, which is assessed by dissertation.

Formal examinations are used to assess intellectual abilities. Assessed coursework provides further opportunities to demonstrate intellect and ability.

Practical Skills

On completing the programme students should be able to:
A successful student will be able to:

C1. Select and apply appropriate mathematical methods for modelling and analysing relevant problems;
C2. Use scientific principles in the development of engineering solutions to practical problems;
C3. Use scientific principles in the modelling and analysis of engineering systems, processes and products;
C4. Select and apply appropriate computer based methods for modelling and analysing problems in selected fields;
C5. Be creative in the solution of problems and in the development of designs;
C6. Integrate and evaluate information and data from a variety of sources;
C7. Take an holistic approach to solving problems and designing systems, applying professional judgements to balance risks, costs, benefits, safety, reliability, aesthetics and environmental impact.

Teaching and Learning Methods

The skills associated with C1-C3 are acquired principally through experience gained in coursework and the project. IT skills (C4) are developed initially through lectures and through hands-on exercises and assignments. Further individual learning may also form a significant part of the project. Skill in designing products or processes is acquired through lectures, and developed through case studies and/or the project. Case studies provide initial opportunities for developing the skills associated with C6 and C7, but the project forms the principal vehicle for their acquisition. Some projects may require further individual learning in this area.
Effective project management is learnt through course works and the project.

Assessment Strategy

Practical skills are assessed through laboratory experiment write-ups, coursework reports, project reports and presentations.

Transferable/Key Skills

On completing the programme, a successful student will be able to:

D1. Manipulation and presentation of data in a variety of ways;
D2. Use of scientific evidence based methods in the solution of problems;
D3. Use of general IT skills;
D4. Use of creativity and innovation in problem solving;
D5. Working with limited or contradictory information;
D6. Effective communication;
D7. Engineering approach to the solution of problems;
D8. Time and resource management.

Teaching and Learning Methods

The transferable skills associated with (D5, D6) are developed in project-based coursework. All the other transferable skills are covered in a dedicated module on research skills

Assessment Strategy

The skills associated with D1-D3 are assessed through formal examination. Those with D5, D6 and D9 re assessed through coursework. Information retrieval and oral presentation test the skills of D4 and D7. Quantitative IT skills are assessed with D1-D3.

12 Programme Curriculum, Structure and Features

Basic structure of the programme

Each MSc comprises a 12 month programme taught over two semesters with examinations at the end of each semester. 180 credit modules (dissertation totals 80 credits).
Each MSc can also be taken part-time over 24 months. A preliminary year is also available to enable candidates with non-standard qualifications to take final year undergraduate modules of their particular programme of study.

Key features of the programme (including what makes the programme distinctive)

These MSc programmes provide students with a solid foundation in their chosen discipline and upon graduating students are 'industry ready' for the workplace. Students benefit from use of our extensive facilities (including our school research vessel) and from interacting with both lecturers with wide ranging experience (including lecturers from industry) and also with peers from a wide range of countries and backgrounds. The marine industries are truly globalised and these programmes equip students for an exciting and rewarding career.

Programme regulations (link to on-line version)

5068FP: -R5068FP
5091FP: -R5091FP
5072F: -R5072F
5078F: -R5078F
5027FP: -R5027FP

13 Support for Student Learning

Generic information regarding University provision is available at the following link.
Generic Information

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

Generic information regarding University provision is available at the following link.
Generic Information

Accreditation reports
Accreditation was given by IMarEST/RINA in 2021. Accreditation is for 5 years and the next re-accreditation visit is due in 2026.

5276F MSc in Shipping and Logistics is only accredited by IMarEST for CMarTech until 2026.

15 Regulation of assessment

Generic information regarding University provision is available at the following link.
Generic Information

In addition, information relating to the programme is provided in:

The University Prospectus: https://www.ncl.ac.uk/postgraduate/
Degree Programme and University Regulations: http://www.ncl.ac.uk/regulations/docs/

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided.