Master of Science in Marine Technology (International) (MSc MT(I))

Postgraduate taught degree, blended lessons
Programme duration: 36 months part-time study

About the Programme

The MSc in Marine Technology (International) is a part-time Masters’ Degree programme that caters for working engineers, executives and managers in the local marine and offshore industry, with minimum disruption to their challenging work commitment. This dynamic course responds to the challenges and demands of the global maritime sector.

The programme develops the skills of graduate engineers working in the marine and offshore industry in advanced technologies, design, engineering, management, safety, statutory rules and regulations, and business. The students will also develop transferable professional skills, such as technical writing, which are fostered through post-school assignments and then finally a dissertation.

Learning Objectives

- To introduce students to advanced marine systems and the state of the art of ship design, marine engineering design and offshore engineering design, including design principles, methodology and tools.
- To give students an understanding of the theory and practice of identification, modelling and control.
- To introduce students to the role of regulations and their impact on vessel design, construction and operation: health and safety, and environment.
- To examine the role of the International Maritime Organisation and classification societies.
- To familiarise students with the work and responsibilities of the marine surveyor, and in particular the procedures employed in structural a machinery surveys of ships and offshore installations.
- To increase awareness of structural behaviour and to develop advanced structural and material concepts.
- To design plates and stiffened panels. Develop the knowledge and skills to undertake elastic and plastic response analysis of stiffened plate structures.
- To gain the knowledge and understanding of finite elements applied to marine and offshore structures.
- To address theoretical and practical aspects of structural response analysis in the marine and offshore field.
- To develop students’ skills in designing and analysing mooring and riser systems. To gain the knowledge and understanding of elemental concepts of drilling engineering.
- To equip students with engineering design, design philosophy, design tactics, design models, adaptive and variant design, the design environment, physical and regulatory influences, tug and multi-purpose workboat design, divergent design solutions, design of fishing vessels, fishing vessel stability and motion analysis, safety and sustainability, the ship design problem, measures of design efficiency, design relationships and initial point design methods, influence of design parameters on performance, mass estimation and contemporary influences on lightship, hull-form distortion, bow and stern refinement, cause and effect understanding through response surfaces, optimization of hull-form for resistance and seakeeping.
- To equip students with the knowledge to understand the interaction between the external loading and structural behaviour of the ocean.
To present an opportunity to undertake advanced research on an appropriate marine related topic working largely alone, and to present in a structured form the results of that research. The research may take the form of a critical review, a computational study, an experimental investigation, or some combination of the two/three. To acquire knowledge in a specialised topic, possibly outside the scope of the taught modules.

Modules (All modules are core units)

- Advanced Marine Engineering Design
- Structural Analysis and Design of Ships and Offshore Structures
- Advanced Hydrodynamics
- Marine and Offshore Project Management
- Structural Dynamics of Ships and Offshore Structures
- Mooring Riser and Drilling System
- Marine Systems Identification Modelling and Control
- Advanced Subsea and Pipeline Engineering
- Surveying Ships and Offshore Installations
- The Regulatory Framework for the Marine Industry
- Advanced Marine Design
- Advanced Offshore Technology
- Dissertation

Minimum Entry Requirement
A 2:2 honours degree, or international equivalent, in a marine technology subject or relevant engineering subject. Relevant experience is desirable, although not essential.

English Language Entry Requirements: IELTS overall 6.5 (with a minimum of 5.5 in all sub-skills) or equivalent.

Course Fees
SGD15,000 per programme, subject to prevailing taxes.

Applicant Eligibility
The course is only available to Singaporeans and Permanent Residents of Singapore.

How to apply
Interested applicants should attend a pre-application counselling session in NewRIIS before applying online at: http://www.ncl.ac.uk/postgraduate/apply/

For more information on the programme and programme preview dates, please contact the NewRIIS team: newriis.research@newcastle.ac.uk / +65 6514 0568.