

## HIGHER NITEC IN MARINE ENGINEERING

### CERTIFICATION

Credits required for certification:

Core Modules	: 55
Life Skills Modules	: 9
Elective Modules	: 4
<u>Total</u>	<u>: 68</u>

### COURSE STRUCTURE

Module Title	Credits
<b>CORE MODULES</b>	
Quality Engineering	8
Ship Systems	8
Marine Propulsion System	7
Marine Workshop Technology	7
Marine Auxiliary Systems	8
Marine Control Systems and Instrumentation	9
Industry Attachment	8
<b>ELECTIVES (COURSE SPECIFIC)</b>	
Engineering Watchkeeping	2
Shipboard Legislation and Resource Management	2
Green Marine Technology	2
Powered Watercraft Driving Essentials	2
<b>ELECTIVES (INTER-DISCIPLINARY)</b>	
Basic Naval Architecture	3
Ship and Offshore Survey	3
Marine Project Planning and Management	2
<b>ELECTIVES (GENERAL) AND LIFE SKILLS MODULES</b>	
For details, click <a href="#">here</a>	

*Note: The offer of electives is subject to the training schedule of respective ITE Colleges. Students are advised to check with their Class Advisors on the availability of the elective modules they intend to pursue.*

### MODULE OBJECTIVES

#### Core Modules

##### Quality Engineering

On completion of the module, students should be able to conduct preliminary safety inspection, perform hazard identification and risk assessment. Students should also be able to verify general arrangement drawings, monitor quality control systems, perform inspection work on brazed joints, heat treatment of materials, cable arrangement, electrical circuits, and perform dimensional checks of engineering components.

### Ship Systems

On completion of the module, students should be able to service, maintain propulsion components system, pneumatic and hydraulic control system components and perform inspection work on deck machinery and alignment of marine machinery.

### Marine Propulsion System

On completion of the module, students should be able to troubleshoot and rectify faults in marine propulsion systems, recondition engine components, perform defect diagnosis, measure and adjust engine functional clearances.

### Marine Workshop Technology

On completion of the module, students should be able to produce 2-D CAD drawings, perform basic arc welding, gas cutting, machine screw threads and components most commonly used in shipboard repairs. Students should also be able to design, modify and fabricate jigs and fixtures.

### Marine Auxiliary Systems

On completion of the module, students should be able to inspect, troubleshoot and rectify machinery components of marine auxiliary systems typically installed on board marine vessels.

### Marine Control Systems and Instrumentation

On completion of the module, students should be able to produce electrical single-line drawings, maintain DC and AC equipment, check simple magnetic circuits and systems' parameter, adjust governor setting, and perform functional tests on control systems typically installed on marine vessels.

### Industry Attachment

Students will undertake a 6-month industry attachment at shipyards, marine related workshop or work place to gain hands-on marine related practical training.

## Electives (Course Specific)

### Engineering Watchkeeping

On completion of the module, students should be conversant with the requirements to maintain a safe engineering watch and seaworthiness of the ship, operate main and auxiliary marine machinery and control systems, operate marine electrical power distribution and to ensure compliance with marine pollution prevention requirements.

### Shipboard Legislation and Resource Management

On completion of the module, students should be conversant with maintaining operational and maintenance documentation, monitoring compliance with maritime legislative requirements, managing human factor errors and practicing good leadership and teamwork on board ships.

### Green Marine Technology

On completion of the module, students will have an understanding on the need to reduce the environmental impact of shipping and other related marine activities and to promote clean and green technology for the maritime industry.

### Powered Watercraft Driving Essentials

On completion of the elective module, students will be provided with the necessary knowledge and skills in good seamanship for safe handling and navigating of powered pleasure watercraft within Singapore waters.

## Electives (Inter-disciplinary)

### Basic Naval Architecture

On completion of the module, students should be able to produce lines plans drawings from offset tables, perform ship form and stability calculations.

### Ship and Offshore Survey

On completion of the module, students should be able to co-ordinate vessel survey activities, perform survey on steelwork and produce survey report on recommendations of rectified works.

### Marine Project Planning and Management

On completion of the module, students should be able to plan, track and monitor projects using project management software.

### Electives (General) and Life Skills Modules

For details, click [here](#).