HIGHER NITEC IN OFFSHORE & MARINE ENGINEERING DESIGN

CERTIFICATION

Credits required for certification:

Core Modules	:	50
Life Skills Modules	:	9
Elective Modules	:	4
Total	:	63

COURSE STRUCTURE

Module Title	Credits
CORE MODULES	
Engineering Graphics	7
Offshore and Marine Structure Design	8
Offshore and Marine Electrical System Design	7
Offshore and Marine Piping System Design	8
Offshore and Marine HVAC System Design	6
Marine Structure and System Modelling	6
Industry Attachment	8
ELECTIVES (COURSE SPECIFIC)	
Solid Modelling	2
Engineering Project Management	2
ELECTIVES (INTER-DISCIPLINARY)	
Ship and Offshore Survey	3
Basic Naval Architecture	3
Green Marine Technology	2
Powered Watercraft Driving Essentials	2
ELECTIVES (GENERAL) AND LIFE SKILLS MODULES	
For details, click here	

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

Engineering Graphics

On completion of the module, students should be able to produce technical sketches, engineering detailed drawings, 3D solid model, and assembly drawings in accordance with ISO standards.

Offshore and Marine Structure Design

On completion of the module, students should be able to perform offshore and marine initial design and prepare general arrangement and structural drawings in accordance with standards and appropriate classification society requirements.

Offshore and Marine Electrical System Design
On completion of the module, students should be able to design electrical system of a ship, including control and communication system, and prepare the drawings in accordance with standards and appropriate classification society requirements.

Offshore and Marine Piping System Design
On completion of the module, students should be able to design mechanical piping, marine system, life safety and firefighting appliance of a ship, and prepare the drawings in accordance to standards, appropriate classification society, Safety of Life at Sea (SOLAS) and International Maritime Organization (IMO) requirements.

Offshore and Marine HVAC System Design
On completion of the module, students should be able to estimate the cooling load of a ship, design air-conditioning and mechanical ventilation ducting, heating system and prepare working drawings for ducting layouts and related pipe work in accordance with ISO standards and appropriate classification society requirements.

Marine Structure and System Modelling
On completion of the module, students should be able to use the latest 3D modelling software to support the design of both conventional offshore platforms and other marine vessels in accordance with industry requirements.

Industry Attachment
Students will undertake a 6-month industry attachment at the shipyards and design consultancy companies in the marine sector to complement and reinforce the skills and knowledge acquired at ITE to develop other competencies in other specialised areas.

Electives (Course Specific)

Solid Modelling
On completion of the module, students would be able to appreciate the benefits of parametric modelling and be able to use the 3D modelling software to perform mechanical design and prepare working and presentation drawings.

Engineering Project Management
On completion of the module, students should be able to apply the tools and techniques that enable the project team to organise and manage their project work to meet requirements and challenges.

Electives (Inter-disciplinary)

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.

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.

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 (General) and Life Skills Modules
For details, click here.

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