HIGHER NITEC IN MARINE & OFFSHORE ENGINEERING (3 YEARS)

CERTIFICATION

Credits required for certification:

Sector Foundation Modules	:	24
Specialisation Modules	:	33
Internship Programme	:	12
LifeSkills Modules	:	10
Cross-Disciplinary Core Modules	:	9
Electives	:	8
Total	:	96

COURSE STRUCTURE

Module Title	Credits
SECTOR FOUNDATION MODULES	
Workplace Safety, Health & Environment	3
Data & Digital Essentials	3
Electrical Fundamentals	3
Engineering Drawing	3
Sustainable Engineering	3
IoT for Engineering	3
Mechanical Fundamentals	3
Coding Essentials	3
SPECIALISATION MODULES	
Electrical & HVAC Design	3
Marine Engineering Systems	3
Fundamentals of Naval Architecture	3
Marine Production Technology	3
Piping Systems Design	3
Marine Electrotechnology & Controls	3
Marine & Offshore Structural Design	3
Marine Commissioning Systems	3
Marine Propulsion System	3
Marine Auxiliary Systems	3
Marine Digitalization & Sustainability	3
INTERNSHIP MODULES	
Internship Programme 1	4
Internship Programme 2	8
LIFE SKILLS MODULES	

Module Title	Credits
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

Sector Foundation Modules

Workplace Safety, Health & Environment
On completion of the module, students should be able to apply Workplace Safety and Health (WSH) policies, Environmental Management System procedures and practices in the planning, preparation and execution of work activities to ensure a safe and reliable workplace environment.

Data & Digital Essentials
On completion of the module, students should be able to prepare data for analysis, use online tools for collaborative work and maintain information security when online.

Electrical Fundamentals
On completion of the module, students should be able to interpret circuit schematic and board layout, perform DC circuit connection and in-circuit measurement.

Engineering Drawing
On completion of the module, students should be able to interpret and create engineering drawings in accordance with ISO standards.

Sustainable Engineering
On completion of the module, students should be able to determine key contributors to environmental changes and the challenges involved in implementing sustainable initiatives, and propose effective strategies to promote sustainability and address environmental challenges across various industries.

IoT for Engineering
On completion of the module, students should be able to set up an IoT, configure the controller to transmit sensor's collected data wirelessly to an IoT platform.

Mechanical Fundamentals
On completion of the module, students should be able to measure and fabricate mechanical components for assembly.

Coding Essentials
On completion of the module, students should be able to perform basic coding to solve general problems as well as develop programmable board-based engineering applications.

Specialisation Modules

Electrical & HVAC Design
On completion of the module, students should be able to produce detailed electrical, HVAC system drawings, and lighting layouts.

Marine Engineering Systems
On completion of the module, students should be able perform measurements of engineering components, maintenance of marine systems and alignment of machinery.

Fundamentals of Naval Architecture

On completion of the module, students should be able to prepare ship arrangement drawings, block lifting and assembly plans and documentation for ship delivery.

Marine Production Technology
On completion of the module, students will be able to plan and prepare materials for marine structures, perform welding using various techniques, and fabricate pipe spools for marine systems.

Piping Systems Design
On completion of the module, students should be able to create 3D models of piping systems, produce piping arrangement drawings and generate spool drawings.

Marine Electrotechnology & Controls
On completion of the module, students should be able to troubleshoot and service electro-pneumatic and electro-hydraulic marine control systems.

Marine & Offshore Structural Design
On completion of the module, students should be able to perform offshore and marine hull structural drawings, outfitting drawings and welding schedule.

Marine Commissioning Systems
On completion of the module, students should be able to develop commissioning procedures and perform system commissioning.

Marine Propulsion System
On completion of the module, students should be able to perform predictive maintenance analysis and conduct rectification of faults and defects in engine propulsion systems.

Marine Auxiliary Systems
On completion of the module, students should be able to service and perform defect diagnosis of marine shipboard systems as well as perform non-destructive testing and destructive testing on components.

Marine Digitalization & Sustainability
On completion of the module, students should be able to apply additive manufacturing system in fabrication of components and carry out sustainability feasibility studies in terms of asset management, environmental impact and risk management.

Internship Modules

Internship Programme 1
Students will undergo a 3-months internship with marine and offshore companies where they will apply and integrate the technical, social and methodological competencies in carrying out related industry projects.

Internship Programme 2
Students will undergo a 6-month internship with with marine and offshore companies where they will apply and integrate the technical, social and methodological competencies in carrying out related industry projects.

Life Skills Modules
For details, click here.