

# MARINE ENGINEERING TECHNOLOGY : BACHELOR OF APPLIED SCIENCE

## Overview

### Program Mission

The mission of the degree program is to give education and training to cadets to enable them to pursue a career as a marine engineering officer at sea. The degree program includes the required academic component for the certificates of competency up to Chief Engineer's level. These certificates will be issued by the Federal Transport Authority once the cadets have sufficient seagoing experience.

### Program Description

This program educates students in the field of Marine Engineering Technology, to prepare them to work in a wide range of maritime related industries in the UAE including: the offshore industry; shipyards; classifications societies; ship design consultancies; ship owners, and ports.

### Program Goals

The aim of the program is to produce merchant engineering officers of character and vision. The internationally recognized curriculum is designed to ensure that each graduate enters the UAE merchant navy profession as an engineering officer with the unique combination of education and professional skills required by a engineering officer leading up to ship's chief engineer.

In addition to the generic graduate outcomes related to graduates of the Higher Colleges of Technology, cadets, upon completion of the program, will be able to:

- Demonstrate a knowledge base in marine engineering and technology, suitable for a career as an engineering officer.
- Employ the necessary communication and engineering skills to safely operate merchant vessels.
- Show appropriate officer-like qualities of discipline, leadership, management and teamwork.
- Manage and reflect on their own work, lifelong-learning and professional development.

### Program Learning Outcomes

Upon graduation, a HCT graduate in Bachelor of Applied Science in Marine Engineering Technology should have the ability to:

1. Demonstrate the competency to undertake the tasks, duties and responsibilities of a ship's chief engineer
2. Demonstrate a knowledge base in relevant marine related topics suitable for a career as a marine professional
3. Effectively lead, work and communicate in a team
4. Expand knowledge and capabilities through continuing education or other lifelong learning experiences.

## Requirements Completion Requirements

Bachelor of Applied Science in Marine Engineering Technology

*Students must successfully complete a minimum of 169 credits, including:*

Code	Title	Credit Hours
Program Core Courses		100
Sea Time Core Courses		30
General Engineering Core Courses		6
General Studies course		33
Total Credit Hours		169

Code	Title	Credit Hours
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#### Marine Engineering Core Courses

Required Credits: 100		
MAR 1113	Fabrication and Repair I	3
MAR 1122	Introduction to Marine Engineering	2
MAR 1132	Marine Chemistry	2
MAR 2303	Mathematics for Marine Engineering	3
MAR 2313	Marine Engineering Knowledge	3
MAR 2403	Fluid Mechanics for Marine Engineering	3
MAR 2413	Applied Marine Mechanics I	3
MAR 2423	Ship Stability	3
MAR 2433	Fabrication and Repair II	3
MAR 2442	Marine Material Technology I	2
MAR 3603	Applied Marine Mechanics II	3
MAR 3613	Ship Construction	3
MAR 3623	Marine Engineering Control I	3
MAR 3633	Marine Electrical Systems I	3
MAR 3643	Diesel Engine Maintenance	3
MAR 4804	Engineering Knowledge - Diesel	4
MAR 4814	Engineering Knowledge - Steam	4
MAR 4823	Marine Airconditioning and Refrigeration	3
MAR 4223	Marine Engineering Control II	3
MAR 4843	Marine Electrical Systems II	3
MAR 5005	Leadership for Chief Engineers	5
MAR 5014	Marine Machinery Operations	4
MAR 5024	Advanced Ship Regulation and Survey	4
MAR 5903	Marine Material Technology II	3
MAR 5914	Ship Design and Technology	4
MAR 5924	Advanced Marine Engineering Knowledge	4
MAR 5934	Marine Engineering Project	4
MTR 1003	Maritime English Communication	3
MTR 2003	Marine Physical Science	3
MTR 2012	Shipboard Operational Leadership	2
MTR 2102	Ship Regulation and Survey	2
MTR 2103	Ship Operational Safety	3

#### General Engineering Core Courses

Required Credits: 6		
EGN 1133	Design Thinking in Technology	3

MCE 2403	Thermodynamics	3
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**Sea Time Core Courses**

Required Credits: 30

MAR 1210	Marine Engineering Seetime I	10
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MAR 3510	Marine Engineering Seetime II	10
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MAR 4710	Marine Engineering Seetime III	10
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**General Studies**

Required Credits: 33

**English, Arabic or other Languages**

Required Credits: 12

LSC 1103, AES 1013, AES 1033 and LSC 2223

**Humanities or Arts**

Required Credits: 3

AES 1003

**Information Technology and Mathematics**

Required Credits: 6

ICT 2013 and LSM 1103

**The Natural Sciences**

Required Credits: 3

PHY 1103

**The Social or Behavioral Sciences**

Required Credits: 9

LSS 1003, LSS 1123 and BUS 2403

Description	Data
Total Required Credits	169
Maximum Duration of Study	7 years
Minimum Duration of Study	5 years
Cost Recovery Program	Yes
Program Code	BMAREG
Major Code	MET

## Ideal Study Plan Recommended Sequence of Study

Year 1		Credit Hours
<b>Semester 1</b>		
EGN 1133	Design Thinking in Technology	3
LSM 1103	Technical Mathematics	3
LSS 1003	Life and Future Skills	3
MAR 1113	Fabrication and Repair I	3
MAR 1122	Introduction to Marine Engineering	2
MAR 1132	Marine Chemistry	2
MTR 1003	Maritime English Communication	3
PHY 1103	Physics I	3
<b>Credit Hours</b>		<b>22</b>
<b>Semester 2</b>		
MAR 1210	Marine Engineering Seetime I *	10
<b>Credit Hours</b>		<b>10</b>
<b>Year 2</b>		
<b>Semester 3</b>		
AES 1013	Arabic Communications	3
LSC 1103	Professional Communication and Reporting	3
MAR 2303	Mathematics for Marine Engineering	3
MAR 2313	Marine Engineering Knowledge	3

MTR 2003	Marine Physical Science	3
MTR 2012	Shipboard Operational Leadership	2
MTR 2102	Ship Regulation and Survey	2
MTR 2103	Ship Operational Safety	3

**Credit Hours**

**22**

**Semester 4**

AES 1033	Islamic Culture	3
MCE 2403	Thermodynamics	3
MAR 2403	Fluid Mechanics for Marine Engineering	3
MAR 2413	Applied Marine Mechanics I	3
MAR 2423	Ship Stability	3
MAR 2433	Fabrication and Repair II	3
MAR 2442	Marine Material Technology I	2

**Credit Hours**

**20**

**Year 3**

**Semester 5**

MAR 3510	Marine Engineering Seetime II	10
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**Credit Hours**

**10**

**Semester 6**

AES 1003	Emirati Studies	3
ICT 2013	Computational Thinking and Coding	3
MAR 3603	Applied Marine Mechanics II	3
MAR 3613	Ship Construction	3
MAR 3623	Marine Engineering Control I	3
MAR 3633	Marine Electrical Systems I	3
MAR 3643	Diesel Engine Maintenance	3

**Credit Hours**

**21**

**Year 4**

**Semester 7**

MAR 4710	Marine Engineering Seetime III **	10
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**Credit Hours**

**10**

**Semester 8**

LSS 1123	Basic Research Methods	3
MAR 4804	Engineering Knowledge - Diesel	4
MAR 4814	Engineering Knowledge - Steam	4
MAR 4823	Marine Airconditioning and Refrigeration	3
MAR 4223	Marine Engineering Control II	3
MAR 4843	Marine Electrical Systems II	3

**Credit Hours**

**20**

**Year 5**

**Semester 9**

LSC 2223	Future Skills Capstone	3
MAR 5903	Marine Material Technology II	3
MAR 5914	Ship Design and Technology	4
MAR 5924	Advanced Marine Engineering Knowledge	4
MAR 5934	Marine Engineering Project	4

**Credit Hours**

**18**

**Semester 10**

BUS 2403	Innovation and Entrepreneurship	3
MAR 5005	Leadership for Chief Engineers	5
MAR 5014	Marine Machinery Operations	4
MAR 5024	Advanced Ship Regulation and Survey	4

**Credit Hours**

**16**

**Total Credit Hours**

**169**

\*Students need to take the following STCW Basic Safety Training courses before MAR 1210:

- Elementary First Aid
- Fire Prevention and Fire Fighting
- Personal Safety & Social Responsibilities

- Personal Survival Techniques
- Security Awareness Training

\*\*Students need to take the following STCW Basic Safety Training Courses before MAR 4710:

- Advanced Fire Fighting
- Medical First Aid
- Proficiency in Survival Craft & Rescue Boats

## Faculty and Academic Staff

**Farhan saeed**, Master Mariner; PhD (Maritime Operations), Liverpool John Moores University, United Kingdom.

**Isikeli Waqa**, Chief Engineer; B.Eng. (Ocean Engineering), Australian Maritime College, Australia; MSc (Maritime Education and Training), World Maritime University, Sweden.

**Kaushik Samanta**, Master Mariner; B.Sc (Nautical Science); MBA in Logistics and Supply Chain Management, Bharathiar University, India.

**Mohab Abouelkawam**, Master Mariner; MSc. (Maritime safety and environmental protection), WMU Sweden; PhD. (Maritime Law) Cardiff University, UK.

**Saud Zambarkji**, Masters High Sea's, Arab Academy for Science and Technology and Maritime Transport, Egypt.

**Syed Ahmed**, Master Mariner, PGC in TQFE (Engineering), University of Stirling; B.Sc. (Maritime Studies), Karachi University, Pakistan.