

# NAVAL SCIENCE

## Admission to Program

This program is only open to Officer Cadets already employed by the UAE Defense Force. Admission to the program is conducted annually by a committee nominated by the General Head Quarters of the Armed Forces (GHQ). The number of cadets admitted to the Naval College is determined by the general policy of GHQ.

## Program Mission

The program provides graduates with the scientific/ technological knowledge, communication and leadership skills required for the exploitation of the increasingly complex technologies involved in modern naval operations. The planned integration of curriculum is aimed at producing graduates with the necessary scientific, technical, communication and cognitive skills which will enable them to function effectively as naval officers, whilst ensuring that the HCT Graduate Outcomes for graduates of the Higher Colleges of Technology are met. The program will produce graduates capable of working as effective executive officers in the UAE Navy.

## Program Description

The program has been designed to provide concurrent academic and military studies. When cadets are at the Naval College, the emphasis of their training will be on academic and professional studies to develop their intellectual capabilities, professional knowledge and vocational utility. The other important emphasis will be on military education and training to develop the qualities of character and leadership that are appropriate to officers in the UAE Naval Forces.

The program includes academic courses with naval relevance and focus, which are integrated with the professional courses and targeted specifically at the future executive officers of the UAE Navy. It provides cadets with the best possible combination of military knowledge, naval science, leadership and management skills and practical professional training.

To provide a broad base of academic skills and intellectual capacity, the program includes a general foundation of management, Emirati studies, physics, mathematics, information technology, scientific and technical courses, in addition to fundamental courses in English language and effective communication. These courses develop cadets' ability to reflect on their personal performance and capability as professional naval officers. They will, in addition, develop awareness of their nation and the world around them. Key communication skills, together with appropriate cognitive skills such as critical thinking and quantitative reasoning, will also be developed during the program.

To complete the cadets' development, the program provides a sequence of professional courses in naval sciences selected to equip them with the knowledge required to assume a leadership position in the UAE Naval Forces. The midshipmen training program works in conjunction with the professional naval courses to provide students with a diverse learning experience.

## Program Goals

The aim of the program is to produce naval leaders of character and vision. Officers will ascribe to the Naval College's core values of integrity first, service before self, and excellence in all that they do. To that end, the curriculum is designed to ensure that each graduate enters the UAE Navy

with the unique combination of education and professional skills required by a naval officer.

*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 Naval science, navigation and technology, suitable for a career as a naval professional.
- Employ the necessary seamanship, communication and navigation skills to safely operate military vessels.
- Show appropriate officer-like qualities of discipline, leadership, management and physical fitness.
- Deploy a range of scientific, technical, communication and transferable skills which will enhance their effectiveness in their chosen career.
- Manage and reflect on their own work, lifelong-learning and professional development.

## Program Learning Outcomes

### Diploma:

PLO 1. Demonstrate traits of sound discipline, leadership, decision making, intellectual curiosity, ability to communicate effectively, work in teams, and the knowledge and determination to uphold the values of UAE.

PLO 2. Demonstrate sound knowledge of General Studies and Naval Science subjects as applied in naval environments.

PLO 3. Apply basic Navigation skills to ensure safe passage at sea. Recognize the navigational aids, their operation, and understand the maritime operating environments.

PLO 4. Recognize seamanship gear and its operation in conduct of operations including anchor and cable work, rope work, boat work, berthing, replenishment, and search and rescue missions

PLO 5. Demonstrate a basic knowledge of naval warfare operations and tactics including, general operations, above water warfare, underwater warfare and air warfare.

### Bachelor:

PLO 1. Ability to exhibit situational appreciation, analytical and leadership qualities. Display effective attitude and beliefs to perform the role of military commanders.

PLO 2. Demonstrate the ability to make rational operational decisions based on sound knowledge of naval equipment, machinery, weapons and sensors.

PLO 3. Ability to take decisions under various Naval Warfare and Operations to ensure safety of naval platforms.

PLO 4. Demonstrate complete understanding of handling naval platforms Damage Control and NBCD states.

PLO 5. Confidently exhibit navigational, communications, and operational skills in multi-platform, multi-threat naval scenarios.

PLO 6. Demonstrate sound knowledge of Rules of Road, and Rules of Engagements at sea.

## Requirements Completion Requirements

### Bachelor of Naval Science with Diploma Exit

#### 2019 Program Matrix

##### Completion Requirement – Bachelor's Degree

Students must successfully complete a minimum of 134 semester credits including

Code	Title	Credit Hours
	General Studies Courses	33
	Naval Science and Engineering Core Courses	30
	Naval Professional Core Courses	56
	Midshipman Sea Training Courses	15
	<b>Total Credit Hours</b>	<b>134</b>

##### Completion Requirement – Diploma Exit

Students must successfully complete a minimum of 110 semester credits including

Code	Title	Credit Hours
	General Studies	33
	Naval Science and Engineering Core Courses	30
	Naval Professional Core Courses	32
	Midshipman Sea Training Courses	15
	<b>Total Credit Hours</b>	<b>110</b>

Code	Title	Credit Hours
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##### Naval Science and Engineering Core Courses

Required Credits: 30

MTH 1203	Calculus I	3
NSE 1003	Fluid Mechanics for Naval Applications	3
NSE 1013	Damage Control	3
NSE 2003	Ship Electrical Technology	3
NSE 2013	Principles of Naval Sensors	3
NSE 2023	Oceanography and Meteorology	3
NSE 2033	Principles of Naval Architecture	3
NSE 2043	Ship Propulsion I	3
NSE 2103	Ship Propulsion II	3
NSE 2203	Electronics for Naval Applications	3

##### Naval Professional Core Courses – Diploma Exit

Required Credits: 32

NAV 1104	Navigation I	4
NAV 2003	Navigation II	3
NAV 2103	Navigation III	3
NAV 2203	Rule of the Road (RoR)	3
NPS 2004	Seamanship I	4
NPS 2113	Seamanship II	3
NPS 2013	Naval Communications	3
NPS 2103	Naval Leadership and Management	3
NWR 1103	Naval Warfare and Operations I	3

NWR 2103	Naval Warfare and Operations II	3
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##### Midshipman Sea Training Courses

Required Credits: 15

NPS 3003	Midshipman Sea Time - Seamanship	3
NPS 3013	Midshipman Sea Time - Navigation	3
NPS 3023	Midshipman Sea Time - Naval Engineering	3
NPS 3033	Midshipman Sea Time - Naval Operations and Communications	3
NPS 3043	Midshipman Sea Time - Fleet Work Simulator	3

##### Naval Professional Elective Courses - Naval Science Bachelor Degree

Required Credits: 24

NAV 4002	OOW Consolidation and Bridge Management	2
NAV 4014	Ocean Navigation	4
NAV 4023	Coastal Navigation	3
NAV 4033	Restricted Waters Navigation	3
NPS 4002	Bridge and Ship Systems	2
NPS 4123	Communications and Intelligence	3
NPS 4133	Capstone Project	3
NWR 4004	Bridge Warfare and Tactical Manoeuvring	4

##### General Studies

Required Credits: 33

##### English, Arabic or other Languages

Required Credits: 12

##### Humanities or Art

Required Credits: 6

##### Information Technology or Mathematics

Required Credits: 6

##### The Natural Sciences

Required Credits: 3

##### The Social or Behavioral Sciences

Required Credits: 6

## Ideal Study Plan Recommended Sequence of Study

### Year 1

Semester 1		Credit Hours
AES 1013	Arabic Communications I	3
LSM 1103	Technical Mathematics	3
LSS 1003	Life and Future Skills	3
PHY 1103	Physics I	3
	<b>Credit Hours</b>	<b>12</b>

### Semester 2

LSC 1103	Professional Communication and Reporting	3
LSC 1503	Academic Spoken Communication	3
LSS 1123	Basic Research Methods	3
PST 1173	Islamic Studies	3
NPS 2004	Seamanship I	4
MTH 1203	Calculus I	3
NAV 1104	Navigation I	4
NSE 2003	Ship Electrical Technology	3
AES 1003	Emirati Studies	3
	<b>Credit Hours</b>	<b>29</b>

Year 2		
Semester 1		
ICT 2013	Computational Thinking and Coding	3
NSE 1003	Fluid Mechanics for Naval Applications	3
NSE 2203	Electronics for Naval Applications	3
NSE 2043	Ship Propulsion I	3
NWR 1103	Naval Warfare and Operations I	3
NSE 1013	Damage Control	3
NAV 2003	Navigation II	3
	Credit Hours	21
Semester 2		
NPS 2113	Seamanship II	3
LSC 3023	Professional English	3
NPS 2103	Naval Leadership and Management	3
NAV 2103	Navigation III	3
NSE 2013	Principles of Naval Sensors	3
NSE 2023	Oceanography and Meteorology	3
NAV 2203	Rule of the Road (RoR)	3
NPS 2013	Naval Communications	3
NSE 2033	Principles of Naval Architecture	3
NSE 2103	Ship Propulsion II	3
NWR 2103	Naval Warfare and Operations II	3
	Credit Hours	33
Year 3		
Semester 1		
At Sea - Midshipman Training		
NPS 3003	Midshipman Sea Time - Seamanship	3
NPS 3013	Midshipman Sea Time - Navigation	3
NPS 3023	Midshipman Sea Time - Naval Engineering	3
NPS 3033	Midshipman Sea Time - Naval Operations and Communications	3
NPS 3043	Midshipman Sea Time - Fleet Work Simulator	3
Diploma Exit		
	Credit Hours	15
Year 4		
Semester 1		
NPS 4002	Bridge and Ship Systems (Elective)	2
NWR 4004	Bridge Warfare and Tactical Manoeuvring (Elective)	4
NAV 4014	Ocean Navigation (Elective)	4
NAV 4023	Coastal Navigation (Elective)	3
NAV 4033	Restricted Waters Navigation (Elective)	3
	Credit Hours	16
Semester 2		
NPS 4133	Capstone Project	3
NPS 4123	Communications and Intelligence (Elective)	3
NAV 4002	OOW Consolidation and Bridge Management (Elective)	2
	Credit Hours	8
	Total Credit Hours	134

NPS 2004 & NPS 2113 are Continuing Courses over 2 semesters

## Faculty and Academic Staff

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