

CURRICULUM BACHELOR OF SCIENCE in MARINE TRANSPORTATION

FIRST YEAR- FIRST SEMESTER		
Course Code	Course Title	Units
NGEC 4	Mathematics in the Modern World	3
NGEC 5	Purposive Communication	3
NGEC 9	Math, Sciences and Technology	3
NAV 1	Navigational Instruments with Compasses	4
SEAM 1	Ships, Ship Routines and Ship Construction	4
ICT	Software Applications and Network Systems used in Seagoing Ships	2
PATHFIT 1	Movement Competency Training	2
NSTP-CWTS 1	National Service Training Program-Civic Welfare Training Service 1	3
GMATHICS 1	Basic Gymathics 1	3
BSC 1	Being Skills Course 1	1.5
TOTAL		28.5

FIRST YEAR- SECOND SEMESTER		
Course Code	Course Title	Units
MET-O	Meteorology and Oceanography	5
NAV 2	Terrestrial and Coastal Navigation 1	4
SEAM 2	Trim, Stability and Stress	3
COLREGS	Collision Regulations	3
PATHFIT 2	Exercise-Based Fitness Activities	2
GMATHICS 2	Advance Gymathics	3
BSC 2	Being Skills Course 2	1.5
EPC	English Proficiency Course	3
TOTAL		27.5

SECOND YEAR-FIRST SEMESTER		
Course Code	Course Title	Units
NGEC 6	Art Appreciation	3
NAV 3	Terrestrial and Coastal Navigation 2	5
NAV 5	Operational Use of RADAR and ARPA	3
SEAM 3	Cargo Handling and Stowage (NDG)	3
SEAM 4	CHS: Dangerous Goods and Inspection	3
MGMT	Leadership and Teamwork	3
MAR ENV	Protection of Marine Environment	3
PATHFIT 3	Outdoor Activities (Basic Swimming)	2
MTP 1	Maritime Training Program 1 (Technical Writing)	3
TOTAL		28

SECOND YEAR- SECOND SEMESTER		
Course Code	Course Title	Units
NGEC 1	Understanding the Self	3
NGEC 7	Science, Technology and Society	3
NGEC 8	Maritime Ethics	3
MARPOWER	Basic Marine Engineering	3
NAV 4	Celestial Navigation	3
NAV 6	Operational Use of ECDIS	3
SEAM 6	Advance Trim, Stability and Stress	3
PATHFIT 4	Outdoor Activities (Advance Swimming)	2
MTP 3	Maritime Training Program 3 (Entrepreneurship)	3
	TOTAL	26

SECOND YEAR- SUMMER		
Course Code	Course Title	Units
BT	Basic Training	0
SDSD	Ship Security Awareness Training and Seafarers with Designated Security Duty	0
	TOTAL	0

THIRD YEAR- FIRST SEMESTER		
Course Code	Course Title	UNITS
NGEC 3	The Contemporary World	3
NGEC 2	Readings in Philippine History	3
MARCOM	Maritime Communications	4
SEAM 5	Ship Handling and Maneuvering	3
MARLAW	Maritime Law	4
FL	Foreign Language	3
MTP 2	Maritime Training Program 2 (Technical Writing 2)	3
MCR 1	Maritime Comprehensive Review 1	3
	TOTAL	26

THIRD YEAR- SECOND SEMESTER		
Course Code	Course Title	UNITS
NGEC 10	Social Sciences and Philosophy	3
NGEC 11	Arts and Humanities	3
RIZAL	The Life and Works of Dr. Jose Rizal	3
DECK WATCH	Deck Watchkeeping with Bridge Resource Management	4
NAV 7	Voyage Planning	3
MTP 4	Maritime Training Program 4 (OBT Preparation)	3
MCR 2	Maritime Comprehensive Review 2	3
	TOTAL	26 (2)

FOURTH YEAR		
Course Code	Course Title	UNITS
COMPRE	Exit Competency Assessment (Comprehensive Exam and Practical Assessment)	0
OBT	Onboard Training	40
SBTE	Shipboard Training Enrichment	0
	TOTAL	40

Effectivity AY 2023-2024



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Course Description of Professional Subjects
Bachelor of Science in Marine Transportation (3-1)
Academic Year 2023-2024

First Year
First Semester

Course Code : **NAV 1**
Course Title : Navigational Instruments with Compasses
Credit : 4 units
Pre-Requisite : None

Course Description:

The course includes topics on Navigational Instruments such as compasses particularly the gyro and magnetic compasses its principles and corrections to compass course and bearings and basic operation of electronic navigational equipment such as GPS, AIS, echo sounder, gyro and magnetic compass.

Course Code : **SEAM 1**
Course Title : Ships, Ship Routines and Ship Construction
Credit : 4 units
Pre-Requisite : None

Course Description:

The course includes topics such functions of the members of the ships' organization, types of each ships and its parts, the working knowledge of the mooring system and related procedures, performance of the marlinespike seamanship skills and riggings in accordance with shipboard instructions and safety standards, performance of deck maintenance work in accordance with shipboard instructions and safety standards.

Course Code : **ICT**
Course Title : Software Applications and Network Systems used in Seagoing Ships
Credit : 2 units
Pre-Requisite : None

Course Description :

The course deals with the effective use of computer application for shipboard documents, evaluation of shipboard computer network in terms of modularity and expandability. It also deals with computer trouble shooting as per manufacturer's instructions. It also involves the use of specific onboard software for Planned Maintenance System, Spare-parts Control System, Bunkering Software, Fuel Consumption and Monitoring Software, and other deck related software.

Second Semester

Course Code : **MET-O**
Course Title : Meteorology and Oceanography
Credit : 5 units
Pre-Requisite : None

Course Description:

The course includes Ship borne meteorological instruments, the atmosphere, its composition and Physical properties, Atmospheric pressure, wind, cloud and precipitation, visibility. The wind and pressure systems over the ocean, Structure of depressions, Anticyclones and other pressure

systems, weather services for shipping, Recording and reporting weather observations, and weather forecasting.

Course Code : **NAV 2**
Course Title : Terrestrial and Coastal Navigation 1
Credit : 4 units
Pre-Requisite : NAV 1

Course Description:
The course includes topics such as the coordinate system of the earth, charts, datums, distance, and information from Charts, Lists of Lights, other Publications and the Bridge Logbook.

Course Code : **SEAM 2**
Course Title : Trim, Stability and Stress
Credit : 3 units
Pre-Requisite : SEAM 1

Course Description:
This course covers the proper application of draught, trim and stability, cargo calculations and cargo plans. It enables the students to determine the effect on trim and stability from loading and unloading of cargoes and cargo operations.

Course Code : **COLREGS**
Course Title : Collision Regulations
Credit : 3 units
Pre-Requisite : SEAM 1

Course Description:
This course covers the discussion and explanation of the proper application of international Regulation for Preventing Collision at Sea, 1972, as amended when I charge of navigational watch.

Second Year
First Semester

Course Code : **NAV 3**
Course Title : Terrestrial and Coastal Navigation 2
Credit : 5 units
Pre-Requisite : NAV 2

Course Description:
The course covers topics such as nautical charts and publications, sailings and directions, tide tables, notices to mariners, radio navigational warnings and ship’s routeing information. It also includes the sailings, planning and conducting a safe passage.

Course Code : **NAV 5**
Course Title : Operational Use of RADAR and ARPA
Credit : 3 units
Pre-Requisite : COLREGS

Course Description:
This course covers the discussion and explanation of the operation of Radar and Arpa including all features in giving advance information to avoid collision in different situation from fundamental plotting to automatic acquisition applying the International Regulation for Preventing Collision at Sea.

Course Code : **SEAM 3**
Course Title : Cargo Handling and Stowage (NDG)
Credit : 3 units
Pre-Requisite : SEAM 2

Course Description:

This course includes the different dry cargo. Reasons for general inspections of holds, cargo protection, ventilation and control of sweat, deck cargo, refrigerated cargo, cargo handling safety, care of cargo during the voyage, inspection and report defects and report damage to cargo spaces, hatch covers and ballast tanks in compliance with the requirements of STCW '95 Chapter 2 Section A-11/1 (Mandatory minimum requirements for certification of offices in charge of navigational watch on ship 500 Gross tonnage or more).

Course Code : **SEAM 4**
Course Title : CHS: Dangerous Goods and Inspection
Credit : 3 units
Pre-Requisite : SEAM 2

Course Description :

The course includes cargo protection, container cargo, deep tank cargo, dangerous, hazardous and harmful cargoes, bulk cargo handling safety and care of cargo during the voyage.

Course Code : **MGMT**
Course Title : Leadership and Teamwork
Credit : 3 units
Pre-Requisite : None

Course Description :

Be capable of organizing and managing the crew for safe and efficient operation of the ship. Be capable to chair meetings on board and implement shipboard training programs as required by international community (including Model Course 1.39)

Course Code : **MAR ENV**
Course Title : Protection of Marine Environment
Credit : 3 units
Pre-Requisite : None

Course Description:

The course includes topics such as Marine environment protection and prevention, International Convention for the prevention of Pollution from ships and the regulation which helps prevent marine pollution as per MARPOL 73/78. Regulations which involves ship construction and equipment requirements of the ships to attain the safest movement and handling of cargo such as oil, noxious liquid substances, and harmful substances in package form. It also tackle proper disposal of operational and domestic waste like oil, sewage and garbage, Emergency response of ships during oil spill.

**Second Year
Second Semester**

Course Code : **MARPOWER**
Course Title : Basic Marine Engineering
Credit : 3 units
Pre-Requisite : None

Course Description:

The course covers the study of the processes and the function of the different system of the engine and equipment needed for efficient operation, monitoring, watch-keeping and maintenance including the different auxiliary machineries needed for engine operations.

Course Code : **NAV 4**
Course Title : Celestial Navigation
Credit : 3 units
Pre-Requisite : NAV 3

Course Description:

This course focuses on the basic concepts of celestial navigation. This also covers the basic of astronomy and its usefulness to navigation in compliance with the requirements of STCW '78 as amended under Chapter 2 Section AII/I (Mandatory minimum requirements for certification of Officers in Charge of Navigational Watch on ships 500 gross tonnage or more.)

Course Code : **NAV 6**
Course Title : Operational Use of ECDIS
Credit : 3 units
Pre-Requisite : NAV 5

Course Description:

This course covers the discussion and explanation of the proper operational use of Electronic Chart Display Information System of STCW 1972, as amended when in charge of navigational watch.

Course Code : **SEAM 6**
Course Title : Advance, Trim, Stability, and Stress
Credit : 3 units
Pre-Requisite : SEAM 2

Course Description:

This course covers the discussion and explanation to determine whether stresses on the ship are within permitted limits by the use of stress data or calculation equipment, or to make the necessary calculations to ensure adequate stability and to check that shear forces and bending moments are within permitted limits.

**Third Year
First Semester**

Course Code : **MARCOM**
Course Title : Maritime Communications
Credit : 4 units
Pre-Requisite : None

Course Description:

The course includes transmit information by visual and receive information by Morse light and use of International Code of Signal and General Operators Certificate for the GMDSS IMO Model Course (1.25).

Course Code : **SEAM 5**
Course Title : Ship Handling and Maneuvering
Course Credit : 3 units
Pre- requisites : COLREGS

Course Description:

The course includes the development of students’ knowledge in ship handling and maneuvering. This also helps the students understand variable and proven methods and discuss scientific and natural laws involved in the movements of the ship.

Course Code : **MARLAW**
Course Title : Maritime Law
Credit : 4 units
Pre-Requisite : None

Course Description:

This course is designed to develop basic understanding of students to the law of the sea that provides for the regulation, management and governance of ocean spaces. It introduces the study of the foundational principles of the law of the sea; critical overview of the 1982 United Nations Convention of the Law of the Sea; IMO conventions concerning safety of life at SEA, security and protection of the Marine Environment; International Maritime Law Embodied in International Agreements and Conventions and an analysis of subsequent developments, including bilateral, regional and global agreements that supplement the Convention.

Second Semester

Course Code : **DECK WATCH**
Course Title : Deck Watchkeeping with Bridge Resource Management
Credit : 4 units
Pre-Requisite : COLREGS, MGMT

Course Description:

This course covers the discussion on maintaining safe navigational watch as stated in STCW as amended in 2010. It includes topics on steering control systems, principles in keeping a navigational watch, the use of routing, the use of information from navigational equipment for maintaining a safe navigational watch (Including IMO MC 1.34), knowledge of blind pilotage techniques, and the use of reporting in accordance with the general principles for a ship reporting system and with Vessel Traffic System (VTS) procedures.

Course Code : **NAV 7**
Course Title : Voyage Planning
Credit : 3 units
Pre-Requisite : NAV 6

Course Description:

The course includes the topic such as voyage planning and navigation for all conditions, routeing in accordance with the general provisions on ships’ routeing in accordance with the general principles for ship reporting and bridge resource management.