

Maritime College Marine Transportation Department Administrative Policy

Title: Classes offered by the Marine Transportation Department

No: 10-03

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1. The following Classes are offered through the Marine Transportation Department. These classes may be offered at the discretion of the department and depending on the needs of the College in either Fall or Spring semesters as well as a Summer semester.
 - a. Seminar (NAVG 402 and NAUT 408) will be offered in the Fall Semester. If demand warrants it may be offered in the Spring as well. Under no circumstances will these courses be offered in conjunction with the Summer Sea Term.

MT 212 Ship Management

3 class hours, 3 credits. The student will learn fundamental concepts and principles required to manage an international shipping company from the shoreside perspective. Subjects will include the various types of charter agreements, voyage trading data, cargo booking and trading, Bills of Lading, Insurance and the customer/owner relationship.

MT 250 Ship Construction and Stability for Unlimited License 2 class hours, 2 credits. Description of structural components, types of construction, materials and methods of shipbuilding. Principles of ship form, flotation, transverse and longitudinal stability. Application of stability, trim, and stress tables, and stress calculating equipment and software. Merchant marine methodology in stability and trim calculations for intact and damaged vessels. This course satisfies STCW requirements in the areas of ships construction and stability.

MT 321 Introduction to Cargo Operations and Ship Stability

3 class hours, 3 credits. The course is in two sections. The first section is a review of basic ship's construction; structural components, types of construction, materials and methods of shipbuilding. This section will also study the principles of transverse and longitudinal stability, general stability and trim calculations for both intact and damaged vessels as appropriate to the licensed deck officer. The second section of the course focuses on a study of vessel cargo and the role of the ship in integrated transportation systems. Specific topics include a survey of cargo gear, principles and problems of stowage and carriage of general, bulk, refrigerated, dangerous cargo, grain, special cargoes and containers, and the role of the ship's officer related to various types of vessels and cargo operations. A complete project is required dealing with the actual loading and stowage of a vessel, utilizing industry software and actual ship specifications. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisite: ENGR 363 or 371 or MT 250.

MT 322 Marine Cargo Operations

2 class hours, 2 laboratory hours, 3 credits. A study of the tanker industry, and the operational aspects of the tanker; including basic safety and pollution prevention precautions and procedures, layouts of different types of oil tankers, types of cargo, their hazards and their handling equipment, general operations sequence and oil tanker construction and terminology. Pertinent U.S. Coast Guard and OPA '90 regulations will be covered, as well as how they relate to specific duties and responsibilities. Operational exposure to loading/discharging and auxiliary tanker systems will be gained through exercises structured around the school's tanker in a weekly two-hour laboratory. In compliance with

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international STCW requirements, there will be no D or D+ grades in this course. Prerequisite: MT 250 or 321.

MT 350 Hazardous Material and Oil Spill Response 3 class hours, 3 credits. This course will introduce the student to current methods and strategies used to combat oil and hazardous materials spills. The course will review legislation pertaining to facility and vessel response plans, carriage of hazardous materials, and worker safety. The course will familiarize the student with various types of spill response equipment and strategies through both classroom lectures and practical demonstrations.

MT 404 Environmental Management

3 class hours, 3 credits. This class will provide an overview of current international environmental regulations as they pertain to the shipping industry. The discussion will include the place of environmental compliance in the company and the compliance process. Sections of the following Laws pertaining specifically to Vessel Operations will be used: MARPOL, Resource Conservation and Recovery Act, Clean Water Act, Clean Air Act, Montreal Protocol, State Statutes. Public health statutes applicable to shipping and vessel sanitation will also be covered. (USPHS – CDC Reporting Criteria). Case studies will be used throughout the course.

MT 408 International Safety Management

3 class hours, 3 credits. This course will introduce students to the ship management requirements found in the IMO's International Safety Management Code and how those requirements and principles are applied in the international shipping industry. Students will become familiar with the various aspects of the code and how the Code is implemented through such programs as safety management programs. Extensive use of case studies will be made.

MT 426 Maritime Communications

2 class hours, 2 laboratory hours, 3 credits. A Simulator-based training course designed to satisfy the International Maritime Organization (IMO) requirements for training in Global Maritime Distress and Safety Systems. The course provides the student with a good working knowledge of modern marine communications. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisite: MT 510.

MT 430 Principles of Emergency Management Systems

3 class hours, 3 credits. This course uses established guidelines set by FEMA and widely used in business to introduce students to the emergency management system in theory and practice. Discussion will include general topics in emergency management systems with an emphasis on how corporations are including these principles into business continuity planning. The course will include such topics as risk analysis, communications, planning and mitigation. **MT 435 Maritime Security** 3 class hours, 3 credits. Perform Federal Level 1 Anti-Terrorism Training. Instruct in Chemical, Biological and Radiological Defense (CBR-D). Obtain certification as a Company and Vessel Security Officer. Instruction and discussion on current Security issues and technology. The purpose of this course is to provide the student with a fundamental knowledge in Maritime Security and prepare them to be a Company or Vessel Security Officer.

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MT 450 Liquefied Gas Tanker Operations 2 class hours, 2 laboratory hours, 3 credits. The purpose of this course is to meet the training requirements for Liquefied Gas Vessel Person in Charge. The 42 hour course provides individuals with a thorough working knowledge of liquid gas tank ship operations and enables them to conduct safe, pollution free cargo operations. The emphasis of the course is placed on safety and operational aspects of cargo operations in accordance with accepted industry practice and legal requirements. This course covers the mandatory minimum training requirements of a Liquefied Gas Tanker Training Program as listed in Section A-V/1 paragraph 22-34 in the STCW 95 Code and 46 CFR Part 13 Table 13.121(F).

Prerequisites: PS 112, MT 250, 322.

SUMMER SEA TERM (DECK)

MT 510 Ship Operation and Management I (Summer Sea Term I)

6 credits. Communications: Visual communications used in the merchant marine; Morse Code, blinker light and International Code Flags; merchant ship communications systems; use of lifeboat radio apparatus. Navigation: Use of shipboard aids available to the navigator; elementary chart work plotting position, courses and distances; practical supervised piloting; introduction to instruments used in celestial navigation. Operations: Ship activation; boat handling; davit operation; man-overboard drills; hull construction; numbering of compartments, deck doors, firehouse stations and extinguishers; ventilation; drainage; fire and flushing mains; loading marking; deck fittings; preservation, sanitation and maintenance; safety practices; ship deactivation, Basic Rules of Nautical Road. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisites: PE 103, PS 111, 112, NAUT 102, NAVG 112.

MT 520 Ship Operation and Management II, Intermediate (Summer Sea Term II)

6 credits. Communications: Ship's visual communication apparatus; signal practice to obtain a speed of eight words per minute with the blinker light: International code, H.O. 102. Introduction to radio telephone. Navigation: Sextant-review of adjustments and altitude measurements; celestial observations; computing and plotting of lines of position; azimuths and compass error; practical adjustments of the magnetic compass; chart work in conjunction with all phases of piloting and sailing; correction of charts and publications from Notices to mariners. Introduction to electronic aids to navigation. Day's work. Operations: Care of lifeboats and equipment; fire detection and extinguishing systems; use of portable fire extinguishers, emergency lifesaving appliances, cargo booms and winches, grand tackle, line throwing apparatus; tours of foreign port facilities, ships and shipyards. Intermediate Rules of Nautical Road. Meteorology: Plotting and making the weather map; synoptic observations and weather forecasting at sea. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisites: MT 510, METE 201, NAVG 212.

MT 521 Cadet Observer (In Lieu of Summer Sea Term II)

6 Credits. Cadets with exceptional academic status may, upon application to the Department of Marine Transportation, be selected to sail on a commercial ship in lieu of Summer Sea Term II. Cadets will be assigned to vessels exceeding tonnage specified by the U.S. Coast Guard for Unlimited Tonnage, Deep Sea or for a minimum of 90 days, vice the 60 days required for the College's Summer Sea Term. Candidates are selected by the Department of Marine Transportation, based upon academic and regimental performance. An extensive sea project is required. In compliance with international STCW

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requirements, there will be no D or D+ grades in this course. Prerequisites: MT 510, METE 201, NAVG 212.

MT 530 Ship Operation and Management III, Advanced (Summer Sea Term III)

5 credits. Communications: Review of visual signaling and practical work to obtain a speed of six words per minute in blinker; radio auto-alarm; VHF/UHF radiotelephone operations; GMDSS Operators Certificate. Navigation: Practical work in celestial navigation, electronic navigation, relative motion and piloting; analysis of dead-reckoning, running fixes and estimated positions supervising the correction of charts and publications; practical use of the tide and tidal current tables; duties and responsibilities of the navigator. Operations: Steering gear drill, individual ship handling, use of distress signals, preparation of ship for U.S. Coast Guard annual inspection; foreign ports and port facilities; assumption of deck officer's duties and responsibilities. Advanced Rules of the Road. Each cadet on his/her first Class Sea Term must take and pass the written qualifying examination. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisite: NAUT 308, NAVG 312.

MT 601-602 Independent Study in Marine Transportation I-II 1, 2, 3, or 4 credits per term. Independent investigation of special topics in Marine Transportation. Student work will be under the direct supervision of a mentor assigned by the Marine Transportation Department. In the event that the course earns 1 credit, the department has the option of assigning a Pass/Fail grade. Prerequisite: Permission of the department.

MT 610-611 Special Topics in Marine Transportation I-II

3 credits. Significant/varied topics in marine transportation of specialized interest are covered. Topics will be chosen to reflect the interest of both students and instructor. Prerequisites: All required MT courses.

NAUT 102 Introduction to Vessel Operations and Seamanship

2 laboratory hours, 1 credit. This course will introduce the student to the current practice of seamanship and safe work practices afloat and in the maritime environment. Students will be introduced to industry safety protocol and concurrent OSHA requirements for a safe workplace. Corequisite: PS 111.

NAUT 308 Nautical Operations: Safety

1 class hours, 2 laboratory hours, 2 credits. This course is designed to meet two specific licensing requirements: Advanced Firefighting and Survival Craft Crewman. Each of these subjects is an endorsement on the Third Mate and Third Assistant engineer's license. The first seven weeks of this class (21 hours) will be devoted to Advanced Fire Fighting. An additional eight hours of practical training is held at the fire field. The second portion of this class, an additional 21 hours, will concentrate on survival craft operations and shipboard evacuation procedures. Students will learn to plan and implement evacuation plans, conduct drills and gain familiarity with survival craft operations and deployment. The practical assessment for this class will be held during the Pre-cruise period for all cadets. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisite: MT 510 or ENGR 510.

NAUT 314 Rules of the Road

2 class hours, 2 credits. Laws and rules for prevention of collision at sea, pertinent U. S. court decisions, practical application of rules to actual situations. Exposure to visual aspects of rules of the road, through use of the College's bridge simulator. In compliance with international STCW

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requirements, there will be no D or D+ grades in this course. Prerequisite: MT 510. Corequisite: NAUT 315.

NAUT 315 Collision Avoidance

3 class hours, 3 credits. Relative motion as a tool for collision assessment, radar transfer plotting techniques, direct plotting techniques, single and multiple contact situations, resolution of primary, secondary, and tertiary threats. Use will be made of the College's Radar/ARPA simulator. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisite: MT 510. Corequisite: NAUT 314.

NAUT 408 License Seminar

4 class hours, 2 credits. Lecture, discussions and problems dealing with subjects required by the U.S. Coast Guard for federal license as an officer in the merchant marine. In order to complete this course satisfactorily, each candidate for license is required to demonstrate, by qualifying examinations in all areas, his ability to become a fully qualified merchant marine officer. Examinations are administered to replicate conditions under which Federal exams are given. Prerequisite: MT 530.

NAUT 416 Bridge Watchstanding 1 class hour, 2 simulator hours, 3 credits. This course simulator-based course is designed to enhance the potential Third Mate's decision-making skills as it applies to traffic and voyage planning situations. Practical application of Rules of the Road and development of correct bridge procedures will be emphasized. Open sea and harbor conditions will be simulated for day as well as night using the simulator. Each watch team has 2 simulator hours and 1 class hour per week. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisites: NAUT 314, 315, MT 520 or 521 or MTDO 524.

NAUT 420 Piloting & Ship Handling for the Mariner

1 class hour, 3 laboratory hours, 3 credits. Piloting and ship handling for the mariner will serve two vital areas for the mariner. In piloting, the cadet will garner the skills required to pilot, safely and professionally, for a particular waterway. In ship handling, previously learned ship handling characteristics will be reinforced and improved using old and new methods. Prerequisites: PS 111, 112.

NAVG 112 Terrestrial Navigation

4 class hours, 4 credits. Advance piloting techniques and practices including: voyage planning, use of pertinent publications in the determination of the voyage plan, effects of tide and current and their calculations, set and drift problems, visibility of lights, and the Pilot Chart. Analysis and determination of the terrestrial fix. Sailings and their applications, including mid-latitude and great circle sailing problems. Estimated time of arrival and fuel consumption problems. Introduction to time and nautical astronomy. Laboratory hours will continue with practical chart work including basic piloting problems using bearings and ranges, use of, identification and aids to navigation, factors affecting vessel's course and speed. Extensive exposure to bridge simulation and college tug for practical application of piloting and boat handling. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Corequisites: MATH 90, PS 111, 112.

NAVG 212 Celestial Navigation

4 class hours, 4 credits. Topics include: The theory of celestial navigation; the celestial sphere; the navigational spherical triangle; time and its application; Development of the celestial line of position. Celestial sight reduction: spherical trigonometry formulas and sight reduction tables: the use of the Nautical Almanac; determination of latitude; determination of time of celestial phenomena; compass

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error from azimuths and amplitudes of celestial bodies. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisite: NAVG 112.

NAVG 312 Electronic Navigation and Voyage Planning 4 class hours, 4 credits. Theory and operation of electronic navigation systems including ECDIS, Loran C, GPS and Radar as found in an integrated bridge environment; piloting and navigation using radar, ECDIS simulators. Elements of voyage planning and implementation of both a chart based and ECDIS based voyage plan showing waypoints and other appropriate information. A course project will include a complete trans-oceanic voyage plan. In compliance with international STCW requirements, there will be no D or D+ grades in this course. Prerequisites: NAUT 314, 315, MT 520 or 521 or MTDO 524.

NAVG 402 Advanced Marine Navigation

1 class hour, 2 laboratory hours, 2 credits. The transition from navigation as an art to the science of problem solving, in preparation for the Federal License Exam for Third Mate in the US Merchant Marine. Additionally, an intensive review of all general subject matter related to shipboard navigation is accomplished. Examinations are administered to replicate conditions under which Federal exams are given. Prerequisite: MT 530.

Note 1. The United States Coast Guard has approved the Maritime College course offerings in the principles, proper operation and utilization of marine radar equipment, and the College is authorized to issue radar certificates to the students who satisfactorily complete the course requirements.

Note 2. Cardio-Pulmonary Resuscitation (CPR) certification is required of all license candidates. Arrangements are made with the American Red Cross to obtain the certification. The fee is paid to the Red Cross.

PE 411 Medical Care Provider 2 class hours, 1 credit. Study and practice in: the contents of a standard first aid kit, the anatomy and physiology of human body systems, toxicological shipboard hazards, identification of hazardous substances and hazards of exposure, patient assessment, standard isolation techniques, CPR and use of AED, treatment of burns and scalds, heat and cold emergencies, symptoms and treatment of hyperthermia/hypothermia/dehydration, radio medical services, medications, sterilization techniques, prevention of disease transmission, treatment for shock, broken bones, dislocations, splinting, and patient movement and transportation. The student will be certified by the American Red Cross by means of a written exam and practical skills performance. This course meets the STCW competencies as well. In compliance with international STCW requirements, there will be no D or D+ grades in this course.