

MTR-MARINE TRANSPORT (MTR)

MTR 1003 Maritime English Communication (3-1-3)

Covers the requirements of STCW Convention for the English language proficiency of ship's officers. It includes the composition and structure of the language in respect of marine terminology, and satisfies the requirements of the IMO Model Course 3.17. It is intended for students who are undertaking BAS (Marine Transport) to become navigating officers and BAS (Marine Engineering Technology) to become marine engineering officers on board ships.

Corequisites: MTR 1023

MTR 1013 Fundamentals of Marine Navigation (2-2-3)

Covers basic concepts of marine navigation in addition includes the fundamentals of coastal and ocean navigation. Introduces knowledge of skills and knowledge to plot positions to a level appropriate in order for him to be able to assist the officer of the watch in the safe navigation of the vessel. It meets the competency standards stipulated in Table A-II/1 of STCW Convention.

MTR 1023 Maritime Industry Overview (3-1-3)

Introduces the maritime industry to students with emphasis on the shipping sector. It includes introduction to maritime organisations, vessel design and categorization, vessel operations, and rules and regulations governing shipboard operations. It meets the competency standards stipulated in Table A-II/1 of STCW Convention.

MTR 1033 Nautical Knowledge (2-2-3)

Covers information and guidance to work on board vessels. It provides basic seamanship and shipboard communication skills and introduces concepts of safe watchkeeping to students so that they could play a supporting role to the officer of the watch during their seagoing training period. This course meets the competency standards stipulated in Table A-II/1 of STCW Convention.

MTR 1206 Shipboard Support-Level Experience (10-20-6)

Engage in practical work experience to undertake training at sea under the supervision of an officer on board the vessel. The material will include Shipboard Familiarisation, Seamanship, Equipment, Watchkeeping, Navigation, and Ship Knowledge. A detailed record of tasks and duties performed under the supervision of ships officers will be kept in a training record book, dated and signed by the supervising officers.

Prerequisites: MTR 1013, MTR 1023, MTR 1033

MTR 2003 Marine Physical Science (3-1-3)

Covers the knowledge of the physical science principles which determine the behaviour of a ship in relation to its design, load condition and the environment in which it operates and, the operation of shipboard equipment. Laboratory work will be carried out to stress the importance of these principles using the experimental method for investigating and reporting results. This course in conjunction with PHY 1103 covers the Physical Science syllabus of the IMO Model Course 7.03.

Prerequisites: PHY 1103

MTR 2012 Shipboard Operational Leadership (2-1-2)

Engage in practical work experience which provides students with the knowledge, skills of leadership and teamwork at the operational level on board a ship. It meets the competency standards stipulated in Table A-II/1 of STCW Convention and the requirements of IMO Model Course 1.39: Leadership and Teamwork.

MTR 2102 Ship Regulation and Survey (2-1-2)

Covers knowledge of the laws and regulations that govern the shipboard safety and operations with particular emphasis on ships survey and inspection. It meets the competency standards stipulated in Table A-II/1 of STCW Convention.

MTR 2103 Ship Operational Safety (3-1-3)

Covers the fundamentals with skills and knowledge to take measures safely enter a confined space, apply International Safety Management (ISM) procedures on board, act promptly and correctly in a damage/flooding situation on board and follow safe working practices on board including when bunkering. The course meets the competency standards stipulated in Table A-II/1 of STCW Convention.

MTR 2203 Near-Coastal Navigation (3-1-3)

Covers the fundamentals with the skills and knowledge required to plan and conduct a safe navigational passage and, determining the vessel's position and plot it on a navigational chart, the competency standards stipulated in STCW Convention. Includes a variety of chartwork exercises covering a range of shipboard navigational scenarios.

Prerequisites: MTR 1013

MTR 2303 Ship Characteristics and Maintenance (3-1-3)

Includes an insight into vessel design, and aims to build on the knowledge gained from MTR 1023. Covers practical aspects of vessel design, including purpose of key features, vessel types and their principal design differences, and the function of machinery. Includes shipboard repair and planned maintenance procedures. This course meets the competency standards stipulated in Table A-II/1 of STCW Convention.

MTR 2314 Marine Navigational Watchkeeping (3-2-4)

Covers watchkeeping theory and case studies using the marine simulator. It includes the operation of range of bridge equipment, application of International Regulations for Preventing Collision at Sea, search and rescue procedures and the use of International Code of Signals. Covers the competency standards stipulated in STCW Convention.

Corequisites: MTR 2324

MTR 2324 Marine Electronic Navigation (3-2-4)

Explore the knowledge and skills required to safely maintain a navigational watch through use of various electronic navigation systems on a vessel. The competency standards stipulated in STCW Convention is covered. It includes the setting up and initialisation of electronic navigation instruments such as radars, GPS and Automatic Identification systems. Includes terminology and operating principles and the ability to interpret the data produced by instruments with allowances made for their limitations and errors.

Prerequisites: MTR 2203

Corequisites: MTR 2314

MTR 2332 Ship Manoeuvring and Control (1-2-2)

Explore the knowledge and skills required to control a power-driven vessel as officer of the watch, including basic handling and manoeuvring of the vessel under normal operations when berthing, mooring and anchoring. Builds on the knowledge gained in year 1 and meets the competency standards stipulated in Table A-II/1 of STCW Convention.

MTR 3012 Shipboard Operational-Level Experience (10-15-12)

Engage in practical work experience under the supervision of the shipboard training officer while the student is at sea. A detailed record of tasks undertaken and duties performed under the direction of ships officers will be kept in a training record book (TRB), dated and signed by the supervising officers. This TRB together with a number of project work and assignments will be assessed for completion by HCT staff at the end of the following semester. The TRB covers Seamanship, Equipment, Watchkeeping Practice, Navigation, and Cargo Operations.

Prerequisites: MTR 2103, MTR 2203

MTR 3013 Marine Weather Watchkeeping (3-1-3)

Present with skills and knowledge required to demonstrate a comprehension of weather systems encountered at sea and observe, interpret and record the state of the marine environment and use this information for safe navigation. It builds on the knowledge gained in MTR 1033 Nautical Knowledge and, meets the competency standards stipulated in Table A-II/1 of STCW Convention.

MTR 3023 Marine Transport Operations (3-1-3)

Covers the basic aspects with the skills and knowledge required to supervise the safe handling, stowage and carriage of cargoes including dangerous goods and the care of passengers on board a variety of vessels, in accordance with the international regulations and best practice.

Prerequisites: MTR 1033

MTR 3033 Electronic Chart Display and Information System (ECDIS) (2-2-3)

Introduce the knowledge and skills necessary to fully utilise the features of ECDIS in order to enhance safety of navigation. It meets the competency standards stipulated in Table A-II/1 of STCW Convention and IMO Model Course 1.27: The Operational Use of ECDIS.

Prerequisites: MTR 2203, MTR 2314, MTR 2324

MTR 3103 Ship Stability and Stress (3-1-3)

Apply the basics of stability of vessels to enable seagoing officers to understand issues associated with loading, unloading and moving of weights on board. The course builds on the knowledge gained in 'MTR 1023 Maritime Industry Overview' and, meets the competency standards stipulated in Table A-II/1 of STCW Convention. It will provide the students with skills and knowledge required to calculate static stability of a ship while acknowledging the importance of dynamical stability and demonstrate a comprehension vessel's stress.

Prerequisites: (LSM 1103 or MTH 1103), PHY 1103

MTR 3113 Ocean Navigation (3-1-3)

Introduce the skills and knowledge required to determine courses and distances on the earth's surface to fix the ship's position by observation of celestial bodies. It meets the competency standards stipulated in Table A-II/1 of STCW Convention. Includes spherical trigonometry, determination of astronomical events, knowledge to calculate compass error by celestial bearings. The difficulties encountered when navigating in high latitudes will also be covered.

Prerequisites: (LSM 1103 or MTH 1103), MTR 2203

MTR 4012 Shipboard Management-Level Experience (10-15-12)

Engage in practical work experience undertaken under the supervision of the shipboard training officer while the student is at sea. It meets wholly the requirements of the STCW Convention for the training of deck officers at Management Level and will prepare the student for Management Level studies.

Prerequisites: MTR 2303, MTR 2314, MTR 2324, MTR 3012

MTR 4024 Leadership in Shipboard Management (4-1-4)

Present knowledge and skills that a senior officer requires to organise the efficient running of a merchant ship, with emphasis in leading and managing multicultural crews and maintaining an effective interface with other industry stakeholders. It includes the concept of leadership; and the importance of vision, motivation and communication. Selected leadership theories and styles are included and examples which apply to senior officers at sea given.

Prerequisites: MTR 2012, MTR 3012

MTR 4114 Marine Environmental Dynamics (4-1-4)

Explain in detail with the knowledge and skills to be able to forecast weather and sea conditions with particular emphasis on avoidance of potentially dangerous weather conditions and formulate reasoned questions concerning environmental and climate issues. It expands on the basic concepts of meteorology introduced in MTR 3013 Marine Weather Watchkeeping and, meets the competency standards stipulated in Table A-II/2 of STCW Convention.

Prerequisites: MTR 3012, MTR 3013

MTR 4124 Advanced Techniques in Marine Navigation (4-1-4)

Gain relevant concepts and principles underlying various methods of position fixing, and evaluation of the quality of position fixes. It encompasses the study of different models of the shape of the earth, the understanding of nautical astronomy, use of information to predict tidal heights and times and in-depth study of errors and limitations of the ship's compasses. Students will also be introduced to statistics. This course meets the competency standards stipulated in Table A-II/2 of STCW Convention.

Prerequisites: MTR 2203, MTR 3012, MTR 3113

MTR 4133 Ship Design and Seaworthiness (3-1-3)

Covers knowledge and skills required to maintain and operate their vessels in a safe and seaworthy condition and to be able to understand and manage consequences related to main propulsion and auxiliary machinery malfunction. It complies with the competency standards stipulated in Table A-II/2 of STCW Convention.

Prerequisites: MTR 2303, MTR 3012

MTR 5003 Ship Operations Project (1-3-3)

An appropriate project will be chosen by the student with guidance from relevant faculty members. Undertaking the project will integrate many of the skills and knowledge obtained during the program and develop independent learning. Students are expected to submit, and defend, their project in the presence of their peers, and faculty members.

Corequisites: LSS 1123, MTR 4012

MTR 5004 Shipboard Commercial Operations (4-1-4)

Covers knowledge of the legal framework within which a ship operates, essential aspects of the shipping business environment and an understanding of shipping economics and its risks. Covers deadweight and draught survey calculations. It fulfills the competency standards stipulated in Table A-II/2 of STCW Convention.

Corequisites: MTR 4012, MTR 5024

MTR 5014 Maritime Law and Ship Protection (4-1-4)

Covers knowledge of the legal framework within which a ship operates. Understanding the important international maritime legislation, along with their application to management of ship operations. An insight into marine insurance risks involved with shipping is given. Knowledge with extensively with survey and certification of ships. This course meets the competency standards stipulated in Table A-II/2 of STCW Convention.

Prerequisites: MTR 2102, MTR 4012

MTR 5023 Ship Administration (3-1-3)

Guide students for command of vessels. The duties of the master are covered, along with various leadership strategies to best meet the challenges of leading and shaping a diverse group of officers and crew on a vessel. In addition, the differences between shipboard command and senior leadership positions ashore are discussed and, the leadership skills and techniques to be employed in a variety of on board emergency situations are covered.

Corequisites: MTR 4012

MTR 5024 Marine Transport Management (3-1-4)

Covers knowledge and skills necessary to safely load, carry, care and unload a variety of cargoes from a majority of vessel types. Covers procedures for and best practices of safe cargo handling in accordance with the provisions of the relevant legislation, including IMDG Code; IMSBC Code; and MARPOL with emphasis on the carriage of dangerous, hazardous and harmful cargoes. It meets the competency standards stipulated in Table A-II/2 of STCW Convention.

Prerequisites: MTR 3023

Corequisites: MTR 4012

MTR 5105 Ship Stability and Dynamics (5-1-5)

Focuses on the conceptual knowledge and practical application of ship stability. Able to control and manage the stability of the vessel while at sea and in port and to increase the safety and proper care of the vessel, its cargo and crew. Advanced concepts, including damaged stability. Includes progressive flooding; transverse stability; sinkage and trim; and residual stability after damage. Other issues such as dry docking and stability when aground are also covered.

Prerequisites: MTR 3103, MTR 4012

MTR 5124 Shipboard Command Operations (4-2-4)

Covers detailed knowledge and skills necessary to handle large power driven vessels safely on passage and in and out of port in extreme weather conditions and emergencies. Covers emergencies involving steering and towing and includes berthing, un-berthing and anchoring under various weather conditions. Requirements meet the competency standards stipulated in Table A-II/2 of STCW Convention.

Prerequisites: MTR 2332, MTR 4012

Corequisites: MTR 5125

MTR 5125 Marine Navigation Management (4-3-5)

Engages skills and knowledge to plan and manage a voyage using advanced navigational techniques and to lead and manage the bridge team under differing circumstances including search and rescue scenario. The course meets the competency standards stipulated in Table A-II/2 of STCW Convention.

Prerequisites: MTR 2314, MTR 2324, MTR 2332, MTR 4012