DEPARTMENT OF MARITIME TRANSPORTATION

This program combines studies in the humanities and sciences with instruction and training in maritime disciplines to provide the U.S. Maritime Service Cadet with a broad-based education. The student who successfully completes the license program will be qualified to sit for the U.S. Coast Guard license examination as a Third Mate of any gross tonnage upon oceans, steam, or motor vessels and issuance of Standards of Training, Certification and Watchkeeping (STCW) credentials. Cadets are also provided with solid fundamentals in business topics related to the maritime industry, ashore and afloat. Cadets who enroll in and apply to graduate in Marine Transportation must successfully complete the license examination for Third Mate in order to graduate from Texas A&M University.

Courses earning USCG or STCW qualifications, sea-time remission or STCW competency certification require a minimum grade of C (70%). In addition, all STCW proficiencies must be satisfactorily completed with a grade of 70% or better (See applicable course outlines available through the department).

Faculty

Cleary, James P, Associate Professor of the Practice
Maritime Transportation
MA, American Public University, 2011

Coonrod, James W, Lecturer
Maritime Transportation
BS, Texas A&M University, 1967

Fossati, Kate E, Assistant Professor of the Practice
Maritime Transportation
BS, Texas A&M University, 2011

Luna, Amy V, Lecturer
Maritime Transportation
BS, Texas A&M University, 2007

McCrighth, Michael J, Lecturer
Maritime Transportation
CERT, US Coast Guard, 1995

Nelick, Timothy F, Assistant Professor of the Practice
Maritime Transportation
BS, Texas A&M University Galveston, 1987

Roth, Augusta D, Associate Professor of the Practice
Maritime Transportation
MBA, University of Phoenix, 2008

Vechan, Ryan J, Assistant Professor of the Practice
Maritime Transportation
JD, University of Houston, 2014

Walling, Herbert M, Associate Professor of the Practice
Maritime Transportation
MS, Maine Maritime Academy, 1987

Majors

- Bachelor of Science in Marine Transportation (http://catalog.tamu.edu/undergraduate/galveston/maritime-transportation/maritime-transportation-bs)

Courses

MART 103 Basic Safety and Lifeboatman Training
Credits 3. 2 Lecture Hours. 3 Lab Hours.
Introduction to lifesaving equipment and apparatus, personal survival techniques, personal social and environmental responsibility and introductory medical first aid and CPR; practical lifeboat and survival training for the U.S. Coast Guard certification as life boatman.
Prerequisite: Admission to license option program.

MART 115 Seamanship I
Credits 3. 2 Lecture Hours. 3 Lab Hours.
(STCW). Theory and application of traditional seamanship, such as handling of natural fiber, synthetic and wire ropes, block and tackle and marlinespike; introduction to competencies of the deck department, including safe systems of work, inspections and maintenance, anchoring, mooring operations, ladder use, crane operations and duties of the lookout and quartermaster.
Prerequisite: Admission to deck license option program.

MART 200 Deck Sea Training I: Basic Communications, Navigation and Seamanship
Credits 4. 4 Other Hours.
Practical application of shoreside studies aboard training ship during first training cruise; basic projects in communications, navigation, seamanship and rules of the road.
Prerequisites: Grade of C or better in MART 103, MART 115 or MART 203, MART 201, and MART 204, or concurrent enrollment, or approval of MART department head; admission into Deck License Option Program.

MART 201 Vessel Structure and Ship Knowledge
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Introduction to ship nomenclature and design, types and methods of ship construction, admeasurement and typical outfitting of various types of commercial vessels; classification societies, shipbuilding materials and methods, structural components and appurtenances of vessels.
Prerequisite: Admission to deck license option program.

MART 202 Ship Stability and Trim
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Principles of flotation and buoyancy; inclining experiments; free surface; transverse and longitudinal stability; trim; motion of ship in waves and seaways; application of stability, trim and stress tables; effect of center of gravity on seaworthiness and stability; actions in event of partial loss of intact buoyancy; fundamentals of watertight integrity.
Prerequisites: MART 200 or NAUT 200; MART 103, MART 115, MART 201 and MART 204 or concurrent enrollment, or approval of MART department head.

MART 204 Terrestrial Navigation
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Fundamentals of piloting, chart construction and development, aids to navigation, useful publications, principles of magnetism and the magnetic compass, great circle, Mercator and middle latitude sailing.
Prerequisites: Admission to deck license option program; algebra and trigonometry recommended.
MART 204 Marine Surveying
Credits 3. 3 Lecture Hours.
Fundamentals of marine surveying using the various types of maritime surveys; writing survey reports by meeting regulatory and industry standards for submission to maritime clients.
**Prerequisites:** Grade of C or better in MART 115 or MART 203, and MART 202 (MART majors); or MARA 205 (MARA majors); or MARR 101 (MARR majors); or MARE 100 (MARR-NLO majors); or approval of instructor.

MART 208 Maritime Meteorology
Credits 3. 3 Lecture Hours.
Weather and forecasting techniques used by merchant mariners to determine cloud formation, precipitation, visibility, atmospheric pressure, fronts, ocean currents, weather and voyage routing and ship maneuvering based upon ship’s technology and reporting equipment; ocean passage planning.
**Prerequisite:** MART 204 or concurrent enrollment or approval of department head.

MART 210 Integrated Navigation I: RADAR/ARPA/ECDIS
Credits 4. 3 Lecture Hours. 3 Lab Hours.
Theory, operation and interpretation of marine radar and automatic radar plotting aids (ARPA) and Electronic Chart Display Systems (ECDIS); introductory level watchkeeping, including applied use of radar, ARPA and ECDIS; U.S. Coast Guard Certification as “RADAR Observer” and Standards of Training, Certification and Watchkeeping (STCW) Radar and ARPA endorsements.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade of C or better in MART 103, MART 115 or MART 203, MART 201 and MART 204, or concurrent enrollment or approval of department head.

MART 212 Marine Dry Cargo Operations
Credits 3. 3 Lecture Hours.
Modern dry cargo principles associated with handling general cargo, bulk cargo, refrigerated cargo, dangerous cargo, containers, roll-on roll-off; cargo ventilation, securing of cargo, stability and trim, cargo gear stresses and heavy lift operations; documentation required for cargo operations, along with practical cargo stowage problems.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade of C or better in MART 103, MART 115 or MART 203, MART 201 and MART 204, or concurrent enrollment or approval of department head.

MART 213 Liquified Gas Tankers
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Preparation as cargo officer for loading, discharging and transit of liquefied gas cargoes; emphasis on physical and chemical properties, operations, safety, firefighting and pollution prevention.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200, or concurrent enrollment or approval of department head.

MART 215 Seamanship II
Credits 3. 2 Lecture Hours. 3 Lab Hours.
Topics include mechanical appliances aboard ship, accident prevention, vessel sanitation, vessel operations, marine inspection laws and regulations, communications, ship’s business and International Conventions.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade of C or better in MART 103, MART 115 or MART 203, MART 201 and MART 204, or concurrent enrollment or approval of department head.

MART 285 Directed Studies
Credits 1 to 4. 1 to 4 Lecture Hours.
Directed study in problems in marine transportation not covered by other courses in the department.
**Prerequisite:** Approval of department head.

MART 289 Special Topics in Marine Transportation
Credits 1 to 4. 1 to 4 Lecture Hours.
Study of selected topics in an identified area of marine transportation or nautical science.
**Prerequisite:** Approval of department head.

MART 300 Deck Sea Training II: Intermediate Communications, Navigation and Seamanship
Credits 4. 4 Other Hours.
Practical application of shoreside studies aboard training ship during second training cruise; intermediate projects in communications, navigation, seamanship and rules of the road.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade of C or better in MART 202, MART 210 or MART 306, MART 212 or MART 312, MART 215 or MART 301, MART 303 and MART 321, or concurrent enrollment; junior or senior classification or approval of MART department head.

MART 303 Celestial Navigation
Credits 3. 2 Lecture Hours. 3 Lab Hours.
Full range of celestial navigation; survey of nautical astronomy, sight reduction, sextants, compass error determination, and solutions of the navigational triangle by various methods.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade of C or better in MART 103, MART 115 or MART 203, MART 201 and MART 204, or concurrent enrollment or approval of MART department head.

MART 305 Ship Construction and Stability
Credits 3. 2 Lecture Hours. 3 Lab Hours.
Shipbuilding nomenclature, dimensions, construction and classification. Classification societies, shipbuilding materials and methods, structural components. Ship’s line drawing and form calculations; principles of flotation and buoyancy; inclining experiments; free surface; transverse stability; trim and longitudinal stability; motion of ships in waves, seaays and dynamic loads; ship’s structure tests and propulsion; labs focus on manual and computer-based stability and trim calculations using standard industry-based software.
**Prerequisites:** Junior or senior classification; MART 103, PHYS 201 or PHYS 218 or approval of instructor.

MART 307 Global Maritime Distress Safety System
Credits 3. 2 Lecture Hours. 3 Lab Hours.
Requirements, regulations, equipment, principles and hands-on operating procedures of each Global Maritime Distress Safety System subsystem, including: SARTS, EPIRBS NAVTEX, INMARSAT, SAFETYNET, VHF Survival Craft Transceivers, DSC, and HF Radio telephone; USCG and FCC certification as GMDSS Operator and Maintainer; minimum passing grade 75%.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade of C or better in MART 103, MART 115 or MART 203, MART 201 and MART 204, or concurrent enrollment or approval of department head.
MART 308 Fast Rescue Craft
Credits 3. 2 Lecture Hours. 3 Lab Hours.
Search and rescue techniques through fast rescue craft maneuvers and
team management; description of various rescue craft and U.S. Coast
Guard "Fast Rescue Craft" Standard of Watchkeeping endorsement.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade
of C or better in MART 103, MART 115 or MART 203, MART 201 and
MART 204, or concurrent enrollment or approval of department head.

MART 310 Integrated Navigation II: Electronic Navigation
Credits 2. 1 Lecture Hour. 3 Lab Hours.
Theory, operation and application of marine electronic navigation
systems and aids; includes marine gyrocompass, vessel steering
systems, hydrosonic systems, satellite navigation systems, AIS and VDR;
intermediate level watchkeeping, including applied use of radar, ARPA
and ECDIS.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade
of C or better in MART 204, MART 210 or MART 306, MART 303 and
MART 321, or concurrent enrollment or approval of MART department
head.

MART 311 Tug and Towing Operations
Credits 3. 2 Lecture Hours. 3 Lab Hours.
Knowledge associated with the safe, efficient operation of towing vessels
through classroom discussion and through underway, hands-on vessel
training aboard the T/V Ranger and barges.
**Prerequisites:** MART 300 or MART 350 or NAUT 300, or concurrent
enrollment or approval of department head.

MART 313 Marine Liquid Cargo Operations
Credits 3. 2 Lecture Hours. 2 Lab Hours.
Principles and practice of bulk liquid, gas handling and carriage by water
craft; theoretical and practical problems involved in loading, stowing and
discharging of petroleum, chemical, elevated temperature and cryogenic
cargoes; marine pollution abatement, personnel safety and firefighting
techniques and systems.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade
of C or better in MART 103, MART 115 or MART 203, MART 201 and
MART 204, or concurrent enrollment or approval of department head.

MART 315 Seamanship III
Credits 2. 1 Lecture Hour. 3 Lab Hours.
Principles and methods of propulsion and steering of ships including hull,
propeller and rudder design; ship handling at sea, in narrow channels,
docking, undocking, mooring; study of the principles of hydrodynamics
that govern ship movement.
**Prerequisites:** MART 300 or MART 350 or NAUT 300, or concurrent
enrollment or approval of instructor.

MART 321 Navigation Rules, International and Inland
Credits 2. 2 Lecture Hours.
Purpose, application and knowledge of the International Regulations for
Preventing Collision at Sea (COLREGS) and the Inland Navigation Rules
and Regulations (Inland Rules).
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200; grade
of C or better in MART 103, MART 115 or MART 203, MART 201 and
MART 204, or concurrent enrollment or approval of department head.

MART 350 Deck Sea Training II – Commercial Internship
Credits 4. 4 Other Hours.
Practical application of shoreside studies aboard an assigned
merchant vessel during second training cruise; intermediate projects
in communications, navigation, seamanship, rules for the road and
other subjects pertaining to the maritime industry. Must be taken on a
satisfactory/unsatisfactory basis.
**Prerequisites:** Grade of C or better in MART 200 or NAUT 200, MART 202,
MART 210 or MART 306, MART 212 or MART 312, MART 215 or MART
301, MART 303, and MART 321, or concurrent enrollment; junior or senior
classification or approval of MART department head.

MART 400 Deck Sea Training III: Advanced Communications, Navigation
and Seamanship
Credits 4. 4 Other Hours.
Practical application of shoreside studies aboard training ship during
third training cruise; advanced projects in communications, navigation,
seamanship and rules of the road.
**Prerequisites:** Grade of C or better in MART 300, MART 350, or NAUT 300;
grade of C or better in MART 307, MART 310 or MART 304, and MART 313
or MART 406, or concurrent enrollment; junior or senior classification or
approval of MART department head.

MART 401 Maritime Security
Credits 3. 3 Lecture Hours.
Presentation and analysis of historical and current maritime security
issues, leading to the understanding of, and proficiency in, security-
related duties and responsibilities of licensed Deck Officers aboard ship
and of maritime industry personnel ashore.
**Prerequisites:** MART 300 or MART 350 or NAUT 300, or concurrent
enrollment or approval of department head.

MART 403 Advanced Topics in Shipboard Operations
Credits 2. 2 Lecture Hours.
Advanced shipboard operations for the Third Mate, AGT, Oceans as a
bridge watchstander or cargo officer on container vessels, bulk carriers,
tankers or gas carriers; focus on all areas of concern to a watchstander.
**Prerequisites:** MART 300 or MART 350 or NAUT 300, or concurrent
enrollment or approval of department head.

MART 404 The Navigator
Credits 2. 1 Lecture Hour. 3 Lab Hours.
Intensive application all available means of navigation; including
principles of electronic, terrestrial and celestial; demonstration
of knowledge, understanding and proficiency in U.S. Coast Guard
examination topics.
**Prerequisites:** MART 300 or MART 350 or NAUT 300, or concurrent
enrollment or approval of department head.

MART 410 Integrated Navigation III: Bridge Watchstanding
Credits 2. 1 Lecture Hour. 3 Lab Hours.
Advanced level Bridge Watchkeeping; integration of navigation,
communications and seamanship in Bridge Resource Management
(BRM) training required under the International Convention on the
Standards for Training and Certification of Watchkeepers, using
simulator-based teaching techniques.
**Prerequisites:** Grade of C or better in MART 300, MART 350, or NAUT 300;
grade of C or better in MART 321, MART 210 or MART 306, and MART 310
or MART 304, or concurrent enrollment or approval of MART department
head.
MART 484 Internship  
Credits 0 to 6. 0 to 6 Other Hours.  
Special topics and problems in field and/or laboratory work suited to analysis by individuals or small groups concerning internships of marine transportation; may require a report describing techniques and results. May be repeated for credit. Must be taken on a satisfactory/unsatisfactory basis.  
Prerequisites: Junior or senior classification or approval of department head.

MART 485 Directed Studies  
Credits 1 to 4. 1 to 4 Lecture Hours.  
Directed study in problems in marine transportation not covered by other courses in the department.  
Prerequisite: Senior classification or approval of department head.

MART 489 Special Topics in Marine Transportation  
Credits 1 to 3. 1 to 3 Lecture Hours. 0 to 3 Lab Hours.  
Study of selected topics in an identified area of marine transportation or nautical science.  
Prerequisites: Approval of MART department head. Junior or senior classification or approval of instructor.

MART 491 Research in Marine Transportation  
Credits 0 to 4. 0 to 4 Other Hours.  
Research conducted under the direction of faculty member in Marine Transportation. May be repeated 2 times for credit. See academic advisor in department. Registration in multiple sections of this course is possible within a given semester provided that the per semester credit hour limit is not exceeded.  
Prerequisites: Junior or senior classification and approval of instructor.

MART 498 Maritime Medical Care  
Credits 2. 1 Lecture Hour. 3 Lab Hours.  
Basic and advanced training for medical care of the sick and injured in the maritime environment; fundamentals of identification and assessment of and appropriate interventions for life-threats and other medical or trauma related conditions commonly encountered at sea; must complete course within one year of graduation.  
Prerequisites: MART 300 or MART 350 or NAUT 300, or concurrent enrollment, or approval of MART department head.