MASSACHUSETTS MARITIME ACADEMY

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DEPARTMENT OF MARINE TRANSPORTATION

MT 2231 Basic Seamanship

Spring 2025

Basic Seamanship Lecture Sections
Monday/Wednesday/ Friday 8:00AM-8:50AM/ Section 2231-11
Monday/Wednesday/ Friday 10:00AM-10:50 AM/ Section 2231-13
Monday/Wednesday/ Friday 12:00 PM-12:50 PM/Section 2231-15
Monday/Wednesday/ Friday 1:00 PM-1:50 PM/Section 2231-16

Basic Seamanship Lab Sections
Monday 1400-1550 Section 2231l-17 Tucker/Brady
Tuesday 1200-1350 Section 2231l-25 Tucker/Kearney
Wednesday 1000-1150 Section 2231l-33 Tucker/Kearney
Wednesday 1400-1550 Section 2231l-37 Tucker/Dias
Friday 1000-1150 Section 2231l-53 Tucker/Kearney
Friday 1200-1400 Section 2231l-55 Tucker/Kearney

Principal Instructor
CDR Brady/ Professor MMA / USCG Licensed Master Unltd.
Office: Bresnahan C305
E-mail: tbrady@maritime.edu
Tel. 508-830-5000 ext. 2106
Cell 508-789-0176
Office hours: Mon 0900-1000/Wed 0900-1000/Friday 0900-1000 on the ship in the Deck Training Office and any other time by appointment. If you need help PLEASE seek me out I WILL FIND THE TIME TO HELP YOU.

Course Overview

The stated general objectives of Basic Seamanship are as follows:

- Enhance knowledge of marlinspike, lifesaving & safety equipment, advanced firefighting techniques, use of deck machinery, and boat handling
- Enhance deck and bridge watchstanding knowledge and skill
- Prepare the student to apply these skills appropriately when in charge of a navigational and/or deck watch

Specific Learning Objectives – gain/expand knowledge of the following:

- Safety – vessel familiarization tour, station bills, enclosed space entry, respiratory equipment, gas detection equipment, JHA, safety meetings, preventative

maintenance, electrical safety, drills, near miss reports, special evolutions (work outside rail, work aloft, welding), documentation, maintenance and inspection of clean safe work areas

- Marlinespike seamanship – categories of line, fiber vs. synthetic, line construction, fiber and synthetic line maintenance and inspection and replacement, breaking strain, wire rope, construction/uses, wire rope fittings, breaking strain, standing vs. running rigging
- Types of weight handling equipment – blocks & tackle, windlass, davit, booms, winch, crane, chain fall, theoretical mechanical advantage vs. actual mechanical advantage, application of electric, hydraulic, and steam power to deck machinery, safety inspections of the above
- Slings and hooks – safe working load, types of hooks, sling and net use, shackles, swivels
- Mooring operations – nomenclature of lines, safety issues, heaving lines, line boats, lines to tugs, line handling devices (chocks, fairleads, winches, capstans), stoppers, line handling commands, mooring alongside other vessels
- Ground tackle – anchors, anchor chain, windlass, stripping bar, pawl, devils claw, wildcat, brake, chain locker, hawse pipe
- Deck officer duties/responsibilities – accountability, watches (at sea/in port), collateral duties (medical, GMDSS, safety, security, training, PPE), reports and inspections, watch turnover, standing orders, logs and records, watch with pilot onboard, watch communications, watch responsibilities during extreme conditions (visibility, weather, traffic), reading draft marks
- Pilot ladder – IMO/IMPA requirements, rigging, relation to freeboard, use of accommodation ladder, boarding the pilot
- Small boats – lifeboats, rescue boats, work boats, launches/tenders, handling under oars (commands), regulations and markings, principles of handling under power, davit types, recovering persons in the water
- Fire prevention and fire fighting – causes, training, fire triangle, fire extinguishing agents, chain reaction, chemistry of fire, pyrolysis, flash point, fire point, flammable liquid, combustible liquid, explosive range, classes of fire, fire tetrahedron, spread of fire (conduction, radiation, convection), fire system components, fire detection systems, sprinklers, foam systems, CO_2 systems
- Life saving and damage control – flooding, stability, free surface, de-watering, pumps/eductors, MOB, MOB maneuvers, lifesaving craft, rescue at sea, steering casualty, groundings, collision
- Vessel management – articles of agreement, certificate of discharge, watch rotation cycles, licensing and certification of merchant seaman, vessel entry and clearance procedures
- Vessel records and certificates – USCG documents (SOLAS), FCC and ABS certificates and surveys, bridge log vs. official log, required placards and posted information, vessel oil record book

The student is expected to have gained a working knowledge of the material covered in this course through MT 1111 and Sea Terms I & II. This course will cover a wide range of topics that will require the student to spend considerable preparation time outside of the classroom. If you feel you are falling behind at any time during the semester, see me for extra help. You are required to participate fully in all scheduled lab sessions.

Textbook and Reference Materials

- The required textbooks for this course are ***Knight's Modern Seamanship*** 18th Edition and ***American Merchant Seaman's Manual*** 7th Edition.
- Additional reference materials include:
    1. Seamanship Notes by Captain P.J. Modic
    2. Formulae for the Mariner by Richard M. Plant, Cornell Maritime Press
    3. Marine Fire Prevention, Firefighting and Fire Safety, Maritime Administration

Outcome Assessment Methods

Three regular exams and a Final Exam will account for 70% of your Final Grade . (20/20/20/40). An additional 5% of your Final Grade will be for attendance, participation and homework. Your lab grade is then factored in as 25% of your total **MT-2231 Basic Seamanship Grade.**
Cadets are required to be in attendance for all scheduled classroom and lab sessions. **Unexcused absence from any lecture or lab will result in the individual being placed on report and a five point reduction in your final average.** If unavoidable circumstances require you to miss a lecture or lab you must notify the instructor as far in advance as possible. Cadets missing any combination of **five** or more class hours or lab hours **for any reason** will receive a **failing grade** for the course. Any missed lab must be made up and it is your responsibility to meet with your lab instructor to arrange such make-up. Eating, drinking or the use of tobacco products is prohibited from all classes. Cell phones are not permitted in any class. If the instructor removes a cadet from class for whatever reason, you will be marked absent for the class.

WEEKLY TOPICS

Week One Safety – vessel familiarization tour, station bills, enclosed space entry, respiratory equipment, gas detection equipment, JHA, safety meetings, preventative maintenance, electrical safety, drills, near miss reports, special evolutions (work outside rail, work aloft, welding), documentation, maintenance and inspection of clean safe work areas

Week Two Marlinespike seamanship – categories of line, fiber vs. synthetic, line construction, fiber and synthetic line maintenance and inspection and replacement, breaking strain, wire rope, construction/uses, wire rope fittings, breaking strain, standing vs. running rigging.

Week Three Types of weight handling equipment – blocks & tackle, windlass, davit, booms, winch, crane, chain fall, theoretical mechanical advantage vs. actual mechanical advantage, application of electric, hydraulic, and steam power to deck machinery, safety inspections of the above

Week Four Slings and hooks – safe working load, types of hooks, sling and net use, shackles, swivels

Week Five Mooring operations – nomenclature of lines, safety issues, heaving lines, line boats, lines to tugs, line handling devices (chocks, fairleads, winches, capstans), stoppers, line handling commands, mooring alongside other vessels

Week Six Ground tackle – anchors, anchor chain, windlass, stripping bar, pawl, devils claw, wildcat, brake, chain locker, hawse pipe

Week Seven Deck officer duties/responsibilities – accountability, watches (at sea/in port), collateral duties (medical, GMDSS, safety, security, training, PPE), reports and inspections, watch turnover, standing orders, logs and records, watch with pilot onboard, watch communications, watch responsibilities during extreme conditions (visibility, weather, traffic), reading draft marks

Week Eight Pilot ladder – IMO/IMPA requirements, rigging, relation to freeboard, use of accommodation ladder, boarding the pilot

Week Nine Small boats – lifeboats, rescue boats, work boats, launches/tenders, handling under oars (commands), regulations and markings, principles of handling under power, davit types, recovering persons in the water

Week Ten Fire prevention and firefighting – causes, training, fire triangle, fire extinguishing agents, chain reaction, chemistry of fire, pyrolysis, flash point, fire point, flammable liquid, combustible liquid, explosive range, classes of fire, fire tetrahedron, spread of fire (conduction, radiation, convection), fire system components, fire detection systems, sprinklers, foam systems, CO_2 systems
Week Eleven Life saving and damage control – flooding, stability, free surface, de-watering, pumps/eductors, MOB, MOB maneuvers, lifesaving craft, rescue at sea, steering casualty, groundings, collision

Week Twelve Vessel management – articles of agreement, certificate of discharge, watch rotation cycles, licensing and certification of merchant seaman, vessel entry and clearance procedures

Week Thirteen Vessel records and certificates – USCG documents (SOLAS), FCC and ABS certificates and surveys, bridge log vs. official log, required placards and posted information, vessel oil record book

BASIC SEAMANSHIP (MT 2231) Lab Syllabus

Lab Objective

The stated general objectives of Basic Seamanship are as follows:

- Enhance knowledge of marlinspike, lifesaving & safety equipment, advanced firefighting techniques, use of deck machinery, and boat handling
- Enhance deck and bridge watchstanding knowledge and skill
- Prepare the student to apply these skills appropriately when in charge of a navigational and/or deck watch

Specific Lab Learning Objectives - "the expected learning outcome will provide knowledge of and practical experience in" the following:

- ******Weather Constraints often affect Lab scheduling******
- Lab 1 – Handling Small Boats Under Power: MWB propulsion/controls, pre-deparure preparation (safety gear), thru-hulls, coolant, electrical and fuel /lube checklist. Starting of engine, nomenclature of mooring lines,
- Lab 2 –Start up and undocking MWB maneuver off dock and practice approaches for docking using existing environmental conditions, head on docking vs angle of approach.
- Lab 3 –use of spring lines, use of wind and current, docking – speed control, spring lines, angle of approach under direction.
- Lab 4 – MWB Practice operation under student command using all learned skills
- Lab 5 – Mooring Lines: Commands and signals used by mooring officer, safety precautions, fairleads, bending on heaving lines, rigging stoppers, making mooring lines fast
- Lab 6 – Mooring Lines 2: Commands and signals used by mooring officer, safety precautions, fairleads, bending on heaving lines, rigging stoppers, making mooring lines fast.
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- Lab 7 –MWB Qual students will now be scored in displaying their skills in a qualitative method
- Lab 8 –Heaving Lines: Use of and art of properly throwing a heaving line from deck of ship to shore and dock to ship
- Lab 9 – Knots: bowline, figure eight, square knot, sheepshank, sheet bend, timber hitch, fishermens bend, becket bend, carrick bend, barrel hitch, rolling hitch, double becket, French bowline, round turn and two half hitches, Spanish Windlass
- Lab 10- Splices/Whippings: Eye, Long and Back splices, temporary and Permanent Whippings

- Lab 11-Rigging: Staging: components, hitches, safety lines / bosun chair components, hitches, safety lines (safety procedures)

- Lab 12- Survival Suits and Liferafts: survival suit components, function, donning, proper techniques for going into the water, stowage and maintenance/ keeping survivors together: combatting hypothermia / Inflatable liferafts: hydrostatic release, boarding, components and function,

- Lab 13 Lab Quals and Make up date

The student is expected to have gained a working knowledge of the material covered in lab through MT 1111 and Sea Terms I & II. This course will cover a wide range of topics that will require the student to spend considerable preparation time outside of the classroom. You are required to participate fully in all scheduled lab sessions.

Texts

- **Knight's Modern Seamanship** 18th Edition
- **American Merchant Seaman's Manual** 7th Edition
- Additional Reference Materials:
  - **Seamanship Notes** by Capt. P.J. Modic
  - **Marine Fire Prevention, Firefighting and Fire Safety** Maritime Administration

Grading

Your Lab Grade will be made up of participation, practical skill assessment, and quizzes. Lab grades account for 25% of your term grade for Basic Seamanship. Lab attendance is mandatory and will be counted in the absences allowed for the semester in Basic Seamanship – ***more than four absences results in a failing grade for the course.*** If labs are missed, students must schedule a make-up with their instructor.

Miscellaneous

A. The Academic Code of Conduct will be strictly enforced.

B. Each student is responsible for assignments and work covered in the scheduled training evolution whether he/she is present or not.

C. Student / Office hours are established to allow the student the opportunity to consult with the instructor. Office hours are the ideal forum to discuss individual professional progress and to answer additional questions. If you are having a problem, do not hesitate to see your instructor. The instructor will be pleased to schedule tutoring.

D. You will be treated and expected to behave as the professionals you are aspiring to be.

E. The required lab uniform is MMA coveralls, hard hat and steel-toed boots. A knife, gloves and weather appropriate outdoor clothing is also required (ball or stocking cap, foul weather gear)

Uniform

Cadets will wear the uniform of the day to all lecture sessions. The required lab uniform is a clean working uniform (MMA coveralls) and steel toed work boots with hardhat. Note that Basic Seamanship labs are often outdoors and proper outdoor clothing (protection from cold and rain) is always recommended. Also note a PFD (work vest) is required whenever you are attending a waterfront lab.

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Please Note: Massachusetts Maritime is committed to providing reasonable accommodations to students with documented disabilities. Students who believe that they may need accommodations in this class are required to contact Dr. Elaine Craghead, Asst. Dean ABSIC 320 Ext 5120 (Karen Nahigian) ADAcompliance@maritime.edu
(We're here 8-4, Monday-Friday)

Please note also that students with documented disabilities while not required to disclose them are best advantaged by disclosing to the instructor early in the semester so issues can be dealt with before they become problems