MARA A210: USCG LICENSE EXAM PREPARATION

Item	Value
Curriculum Committee Approval Date	10/07/2020
Top Code	095900 - Marine Technology
Units	4 Total Units
Hours	80 Total Hours (Lecture Hours 68; Lab Hours 12)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	Yes
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)

Course Description

Students will learn the required material to take the USCG exams for an OUPV or 100 Ton Master/Mate endorsement. Topics include rules of the road, navigation and chart plotting, deck general, deck safety and environmental protection, and navigation general. ADVISORY: Due to the requirements to obtain a license from the US Coast Guard, students are expected to have 360 days of documented sea service; If a student has less than 360 days documented, then prior approval from the instructor is required. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Students will demonstrate correct and accurate use of chart plotting skills.
2. Students will simulate potential collision scenarios utilitizing the International Rules of the Road to avoid collisions at sea.
3. Students will demonstrate navigational concepts.
4. Students will explain deck safety regulations.

Course Objectives

- I Chart plotting
- I. 1. Use plotting tools to determine vessel position.
- I. 2. Distinguish published symbols in order to identify features on paper charts.
- I. 3. Apply speed, distance, time formulas to advance vessels position.
- I. 4. Apply tide and current calculations to plot safe voyages.
- II International Rules of the Road
- II. 1. Recognize the light characteristics of different types of vessels to determine right of way and danger of collision.
- II. 2. Identify the sound signals for different types of vessels to determine right of way and danger of collision.
- II. 3. Apply knowledge of the rules to determine which vessel has right of way.
- II. 4. Recognize the sound signals used by vessels to communicate passing arrangements.
- III Deck Safety Regulations
- III. 1. Summarize environmental protection requirements for inspected vessels.
- III. 2. Demonstrate ability to interpret information in the Federal Code of Regulations in order to identify specific safety requirements for inspected vessels.
- III. 3. Recognize knots, block and tackle, and mooring lines by name in order to communicate effectively and safely on a vessel.
- III. 4. Outline procedures for man-overboard scenarios.
- III. 5. Outline procedures for abandon ship scenarios.
- III. 6. Identify specific emergency duties required of crew on the station bill.
- IV General Navigation
- IV. 1. Solve tide and current problems to select appropriate time of day for safe navigation.
- IV. 2. Identify navigation aids by shape and color.
- IV. 3. Utilize reference books to find detailed information about ports and harbor approaches.
- IV. 4. Utilize reference books to find light characteristics of navigational aids to confirm navigational position.

Lecture Content

Regulations Understanding Merchant Mariner Credential / licensing hierarchy Explain Manning Requirements Shipping Discharge Pollution Documentation Log books Code of Federal Regulations Navigation Charts Publications Speed, Distance, Time calculations Magnetic compass Aids to Navigation Visibility of Lights Electronic navigation and communications COLREGS US Inland Rules Vessel Topics Ship construction terminology Hardware Stability and trim Emergencies Fire prevention, regulations, and marine firefighting Temporary repairs Drills: Fire, explosion, Person Overboard, Rescue survivors Anchoring, boathandling, and watchkeeping Heavy weather: Operations, Boats/Rafts, Survivors Weather for the Mariner Sail Option Review terminology and define Auxiliary Sail endorsement Assistance Towing Understanding the rules and regulations for safe towing

Lab Content

Plotting Lab Chart Overview Fixes Running Fixes Estimated Position Vessel Topics Small Engines Marlinspike

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- Lab (04)
- DE Live Online Lab (04S)

Instructional Techniques

LectureDiscussionDemonstrationPractical application with student participation

Reading Assignments

Excerpts: Elbert S. Maloney, “Chapmans Piloting and Seamanship” (67th edition), Hearst Books , New York, New York 2013 ISBN-13: 9781588169617 Anticipated allotment of time: 3 hours / week Current edition of Navigation Rules: International – Inland Anticipated allotment of time: 2 hours/week

Writing Assignments

Multiple choice take-home quizzes Anticipated allotment of time: 1 hours /week Chart plotting scenarios Anticipated allotment of time: 3 hours/ week

Out-of-class Assignments

Student Workbook Study Guide (5th ed.) by Mereld Keys, adapted specifically for use in this course by Dr. Keys and Commander Scott Smith, USCG Anticipated allotment of time: 2 hours / week

Demonstration of Critical Thinking

Students will demonstrate critical thinking through completion of short quizes on each lecture topic.

Required Writing, Problem Solving, Skills Demonstration

Students will demonstrate navigation, safety, regulatory, and other maritime skills and knowledge through the completion of the following: A short writing assignment Quizzes for each topic The option to sit for the USCG exams.

Eligible Disciplines

Marine diving technology: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience. Marine engine technology: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience. Ship and boat building and repair: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Dept of Homeland Security / USCG. USCG Navigation Rules and Regulations Handbook, ed. Paradise Cay, 2018 2. Required Jonathan Eaton. Chapman Piloting Seamanship, 68 ed. Hearst, 2017 3. Required Mereld Keys. A Student Workbook Study Guide, 5th ed. Re-printed with permission, 2019

Other Resources

1. Code of Federal Regulations, Title 33 and 46, current and past editions 2. Light Lists and U.S. Coast Pilot, various volumes and editions 3. Tide Tables and Tidal Current Tables for both the Atlantic and Pacific coasts 4. Local Notice to Mariners, 11th USCG District 5. American Merchant Seamans Manual, Cornell Maritime Press 6. Merchant Vessel Deck Officers Handbook, Cornell Maritime Press 7. Lifeboatman Able-Bodied Seamans Study Guide, Cornell Maritime Press, paperback 8. Knights Modern Seamanship, current edition 9. Bowditch: The American Practical Navigator, Pub. 9, DMA-Naval Hydrographic Office 10. Schufeldt Dunlap, Piloting Dead Reckoning, 4th edition, Naval Institute Press