Nautical Science Program – Naut. 302b
Master’s – Advanced Navigation & Seamanship, level 4
USCG Merchant Mariners Masters Credential Preparation Course

Academic Units: 2

Offered: Spring Semester Only
Class Days: Wednesday’s 3:00PM – 4:50PM

Contact Hours: Total 252 hrs.
Campus Lectures – 28 hours
Sea-time Laboratories – 224 hours:
8-hour “Skipper Preparedness Training”
24- hours “Performance Boat II” Instruction
8- hours “002B Practical Instruction”
48-hours “NROTC Midshipmen Crew Training Sail”
24- hours 2nd Mate Training Sail
96- hours 1st mate voyages as crew for 001A
8- hours “Marine Engine Function and Maintenance” Course, Martin Ball
4- hours CPR, AED, and First Aid- Instructor TBA

Location:
http://priceschool.usc.edu/naut/
USC Campus for weekly lectures.
Off campus laboratories- San Pedro, Long Beach and Port of Los Angeles.

Instructors:
Captain Lars Harding, Program Administrator & Staff
Office: Physical Education Building - PED 104
Office Hours:
Capt. Harding, By appointment or drop-ins on Wed’s 1:30-2:30PM
Contact Info:
Captain Harding - (562) 230-5277, lharding@usc.edu
Phone and email messages will be returned within 48 hrs.
Note: When engaged in offshore voyages with students there may be a delayed response.
USCG Accreditation:
This course is Certificated by the United States Coast Guard (USCG) for sea time toward a “U.S. Coast Guard Merchant Mariners Masters Credential”. (USCG Certificate UNIVSC-155).

Course Description:
This course is the culmination of four semesters of training, classroom work and sea time laboratories taught at the University of Southern California’s Nautical Science Program. Designed for advanced level students who wish to pursue a “Merchant Mariner’s Masters Credential” issued by the United States Coast Guard (USCG). Successful students leave this accredited training course with the necessary skills and understanding to safely navigate a passenger vessel at sea under power or sail. Upon completion, students in this course apply the following concepts and skills as necessary for safe navigation: Traditional navigation methods, charting and piloting knowledge, electronic navigation equipment including; GPS, Radar, Sonar, AIS and VHF. Marine weather meteorology, modeling and forecasting, admiralty law as applied to collision avoidance and coastal piloting. Department of Homeland Security and United States Coast Guard navigation rules for all ships operating in inland and international waters. Damage control and emergency procedures for fire, sinking, grounding, injuries, CPR, AED and 1st Aid. Seamanship, sail handling, sail trim, maneuvering both under power and sail. And lastly, an understanding of environmental laws and acceptable USCG practices for discharge and stowage of all types of marine fuels, combustibles, sewage and effluents.

At-Sea laboratories will include practical application of advanced sail training and handling skills, advanced vessel maneuvering skills under both power and sail, application of advanced navigation and piloting skills, operation of navigational marine electronics, advanced anchoring, docking, mooring skills, man-overboard recovery, engine maintenance course and skipper/command preparedness practical.

Learning Objectives:
Students gain knowledge and understanding of the following vessel command skills:
- USCG licensing requirements
- Piloting Rules for “Lights, Shapes and Sound Signals aboard ship”
- Advanced Navigation
- Advanced Marine Weather
- Boat Handling and Seamanship
- Admiralty laws regarding piloting of vessels
- Damage control, emergency procedures, lifesaving skills

Prerequisite(s): Nautical Science 001A and 001B
Co-Requisite(s): None
Concurrent Enrollment Options: Special dispensations for concurrent enrollment may be discussed in person and approval will be given by program administrator and based upon experience.

Course Notes:
Course enrollment is allowed for Letter Grade, Pass/Not Pass and Audit. Attendance at all lectures, off-campus laboratories and sailing events is required. Dates for these components of the course will be arranged during the first three weeks of lectures. Copies of the lecture slides, instructional videos and other class information will be posted on Blackboard. United States Coast Guard license track students must enroll for a letter grade. Students must complete all “at sea labs” to receive exponential sea time issued by the USCG for license track.
**Required Readings and Supplementary Materials**
The following are available at the USC Book Store and Safe Navigation Stores

**Text:**
- USDHS-USCG Navigation Rules Int. and Inland (Required)
- Piloting, Seamanship & Small Boat Handling, Chapman (provided for reference)
- Celestial Navigation Tom Cunliffe

**Charts:**
- 1210 TR Martha’s Vineyard to Block Island (provided)
- 18746 U.S. West Coast- San Pedro Channel (provided)
- 18749 U.S. West Coast – San Pedro Bay (provided)

**Description and Assessment of Assignments:**
A mid-term examination will be given during the 7th-9th week of classes. Attendance is mandatory to all off campus laboratories. The final examination will require significant demonstration of charting, navigation and seamanship skills acquired during off campus events.

**Grading Breakdown:**
- 5% Lecture Attendance. Note that attendance is required to participate in the off-campus laboratories
- 30% Midterm Examination
- 20% “Performance Boat II, 002B Practical Day Sail, Engine Maintenance, Skipper Preparedness”.
- 45% Final Exam

**Grading of Final Examination**
(Due to the challenging nature of this exam and historical results the following curve is used)
- A 95-100
- A- 80-94
- B+ 77-79
- B 66-76
- B- 60-65
- C+ 57-59
- C 53-56
- C- 50-52
- D+ 47-49
- D 43-46
- D- 40-42
- F 39 and below

**Course Grading Scale**
≥ 90% = A, ≥ 80% = B, ≥ 70% = C, ≥ 60% = D, Failing Work < 45% or missing assignments or attendance

**Assignment Submission Policy**
Mid-term examination must be taken during the scheduled lecture. Participation in off-campus instructional laboratories and multiple sailing voyages are mandatory. Off-campus activities will be scheduled during the first three weeks of class. Changes to scheduled “at-sea voyages” may only be made with advanced notice and in person with compelling and legitimate conflict or documented illness.

**Grading Timeline**
Final class grades will be submitted per standardized university policies and procedures.

**Special Needs Students are Welcome!**
Please contact Capt. Lars P. Harding, Program Administrator to discuss accommodations
### Course Schedule: A Weekly Breakdown

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics / Daily Activities</th>
<th>Learning Objectives</th>
<th>Readings and Homework</th>
<th>Deliverable/ Due Dates</th>
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</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Course/ Syllabus review, laboratory scheduling, “Sea book” time logging,</td>
<td>USCG requirements for Master’s Credential license track students Participating as a teaching assist.</td>
<td>Blackboard slides “Sea book” for time documentation</td>
<td>Classroom work</td>
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<tr>
<td>Week 2</td>
<td>Scheduling Labs, Marlinspike seamanship, line handling</td>
<td>Seamanship skills</td>
<td>Knot booklet, splicing, whipping hand-outs</td>
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<tr>
<td>Week 3</td>
<td>Navigation proficiency Charting, piloting review</td>
<td>Advanced navigational &amp; traditional charting skills</td>
<td>Blackboard slides and online videos Hand-outs</td>
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<tr>
<td>Week 4</td>
<td>Advanced Navigation &amp; Charting, electronic Navigation</td>
<td>Students apply traditional or electronic navigation skills as situation demands</td>
<td>Blackboard slides and online videos Hand-outs</td>
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<tr>
<td>Weeks 5-6</td>
<td>Navigation, Advanced safety at sea, anchoring, docking maneuvering, line safety and hazards</td>
<td>Seamanship skills, passenger, crew and ship safety</td>
<td>Blackboard slides and online videos</td>
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<td>Week 7</td>
<td>USCG requirements for stowage and discharge of fuels, combustibles, sewage</td>
<td>Seamanship and command skills USCG Laws and responsibilities</td>
<td>Blackboard slides and online videos</td>
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<td>Week 10-11</td>
<td>USCG/DHLS Rules lights/sounds aboard</td>
<td>Boat Handling and Seamanship US Coast Guard laws</td>
<td>Blackboard slides and online videos</td>
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<td>Week 12</td>
<td>Health aboard ship, nutrition, provisioning sanitation for a disease-free ship</td>
<td>Maintenance of officer/crew/health aboard ship Nutrition requirements</td>
<td>Hand-outs, blackboard slides</td>
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<td>Week 13</td>
<td>Water safety, man-overboard, physical conditioning</td>
<td>Demands of shipboard life and passenger and crew safety</td>
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<td>Weeks 14-15</td>
<td>Final Exam review Charting review Navigation review</td>
<td>Final Exam Week 16- per USC final exams schedule and policies</td>
<td>Blackboard, videos, slides, hand-outs, practical’s</td>
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<tr>
<td>Week 16</td>
<td>Final Exams</td>
<td></td>
<td></td>
<td>Date/Time: See USC Schedule of Classes at classes.usc.edu/</td>
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Statement on Academic Conduct and Support Systems

Academic Conduct:
Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in “SCampus” Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct.

Support Systems:
Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. engemannshc.usc.edu/counseling

National Suicide Prevention Lifeline – 1 (800) 273-8255
Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. www.suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender-based harm. engemannshc.usc.edu/rsvp

Sexual Assault Resource Center
For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: sarc.usc.edu

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086
Works with faculty, staff, visitors, applicants, and students around issues of protected class. equity.usc.edu

Bias Assessment Response and Support
Incidents of bias hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. studentaffairs.usc.edu/bias-assessment-response-support

The Office of Disability Services and Programs
Provides certification for students with disabilities and helps arrange relevant accommodations. dsp.usc.edu

USC Support and Advocacy (USCSA) – (213) 821-4710
Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. studentaffairs.usc.edu/ssa.

Diversity at USC
Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. diversity.usc.edu

USC Emergency Information
Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. emergency.usc.edu

USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime.
Provides overall safety to USC community. dps.usc.edu