

**Nautical Science Program – Naut. 002B**  
**Master's – Advanced Navigation & Seamanship, level 4**  
**USCG Merchant Mariners Masters Credential Preparation Course**

Academic Units: 2

**Offered:** Spring Semester

**Class Days:** Wednesday's 3:00PM – 4:50PM

**Contact Hours: Total 272 hrs.**

Campus Lectures – 28 hours

Sea-time Laboratories – 208 hours:

8-hour." Skipper Preparedness Training"

4- hour Life raft demonstration & training

48- 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](mailto: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 1<sup>st</sup> 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
- Dept. Homeland Security Navigation Rules (Inland and International)
- 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 7<sup>th</sup>- 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

	Topics / Daily Activities	Learning Objectives	Readings and Homework	Deliverable/ Due Dates
<b>Week 1</b>	Course/ Syllabus review, laboratory scheduling, "Sea book" time logging,	USCG requirements for Master's Credential license track students  Participating as a teaching assist.	Blackboard slides "Sea book" for time documentation	Classroom work
<b>Week 2</b>	Scheduling Labs, Marlinspike seamanship, line handling	Seamanship skills	Knot booklet, splicing, whipping hand-outs	
<b>Week 3</b>	Navigation proficiency Charting, piloting review	Advanced navigational & traditional charting skills	Blackboard slides and online videos Hand- outs	
<b>Week 4</b>	Advanced Navigation & Charting, electronic Navigation	Students apply traditional or electronic navigation skills as situation demands	Blackboard slides and online videos Hand-outs	
<b>Weeks 5-6</b>	Navigation, Advanced safety at sea, anchoring, docking maneuvering, line safety and hazards	Seamanship skills, passenger, crew and ship safety	Blackboard slides and online videos	
<b>Week 7</b>	USCG requirements for stowage and discharge of fuels, combustibles, sewage	Seamanship and command skills USCG Laws and responsibilities	Blackboard slides and online videos	
<b>Weeks 8</b>	USCG/DHLS Nav Rules: Inland and International waters	Command skills, crew communication, ship safety	Text: US Dept of Homeland security Navigation Rules	
<b>Week 9</b>	USCG/DHLS Nav rules for ships: Inland and international waters	Bridge operations and vessel command, ship safety	Text: US Dept of Homeland security Navigation Rules	Mid-term- USCG Navigation Rules Int. and Inland
<b>Week 10-11</b>	USCG/DHLS Rules lights/sounds aboard	Boat Handling and Seamanship US Coast Guard laws	Blackboard slides and online videos	
<b>Week 12</b>	Health aboard ship, nutrition, provisioning sanitation for a disease-free ship	Maintenance of officer/crew/health aboard ship Nutrition requirements	Hand-outs, blackboard slides	
<b>Week 13</b>	Water safety, man-overboard, physical conditioning	Demands of shipboard life and passenger and crew safety		
<b>Weeks 14-15</b>	Final Exam review Charting review Navigation review	Final Exam Week 16- per USC final exams schedule and policies	Blackboard, videos, slides, hand-outs, practical's	
<b>Week 16</b>	Final Exams			Date/Time: See USC Schedule of Classes at <a href="http://classes.usc.edu/">classes.usc.edu/</a>

## 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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://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](http://dps.usc.edu)