



Nautical Science **CAS NS 223 3 credits**

Instructor: SEA Faculty

Course Description:

The Theory and Practice of Nautical Science is comprised of a six-week shore component followed by a six-week sea component. The primary objective of the shore component is to prepare you for our voyage aboard the Robert C. Seamans by introducing the topics and skills necessary for you to join the ship as an active member of the crew. Through lectures, labs, and group activities on shore, you will be introduced to the principles and practice of near-shore and offshore navigation, weather, seamanship, teamwork, leadership, and the basic principles that govern the operation of large sailing vessels.

Once at sea, you will work under the guidance of the professional crew to build upon these fundamentals taught ashore. Under a system of progressive responsibility, you will work in stages toward the ultimate role of Junior Watch Officer (JWO), where you will assume direct control of the routine tasks of ship operations.

The range of topics, combined with a limited amount of time, makes this course an intensive learning experience. It is crucial that you not only take responsibility for your own learning, but also to help one another. Additionally, the staff, both ashore and at sea, is an ever-present source of assistance and advice. Motivation, teamwork, and cooperation are essential to the successful operation of a sailing vessel and of our voyage together.

Thoughts on How to Do Well:

- Punctual attendance for all classes, meetings, and activities is mandatory.
- Be a participant in class. Ask many informed questions.
- Utilize suggested readings to support class instruction
- Keep up with your assignments daily. As the material is progressive, you cannot afford to get behind.
- Strive to understand the concepts.
- Get help early and often from the faculty and your classmates. Remember: a ship at sea is the ultimate non-competitive environment!

Additional Responsibilities:

Knots: While there are a host of useful and decorative knots, a mariner is well-served by six specific knots. You should be able to tie each of those eight without difficulty. You will be responsible for teaching one knot to your cohort group. You should help each other and practice the knots often during your time on shore. You may be asked to demonstrate these knots upon your arrival at the ship.

Community:

We will begin to develop a sense of community during the shore component in order to prepare the class to work and live together in close quarters on board the *SSV Robert C. Seamans*. Direct communication is one of the most important foundations of a community. As such, I expect each of us to confront any issues that may arise quickly and efficiently. Remember, nothing happens in a community without affecting it. Work to help your classmates get to class on time, prepare for assignments and assessments, and support each other during stressful periods.

Our job over the next six weeks is to ensure we are well-prepared to step aboard the *Robert C. Seamans* on October 6th as working members of the ship's company.

If you find yourself falling behind or not adequately understanding the concepts, come see me.

Sample Course Calendar:

Date	Time	Topic	Supportive Reading
<i>August</i>	<i>Week 1</i>		
Mon 26 th	1600	1600 Welcome to SEA Oceans & Climate / Coral Reef Conservation Caribbean 1730 Campus Tour 1830 Pizza Dinner	

Tue 27 th	0900 1030	SEA Orientation: O & C / CRCC Ocean & Climate Course Introductions	
Wed 28 th		<i>NO CLASS</i>	
Thu 29 th	0800- 0915	<u><i>Navigation Fundamentals</i></u> Coordinate Systems Geographic Projections Course and Distance <i>Chart Work!</i>	Bowditch: Chapter 3- Nautical Charts
Fri 30 th	0800- 0915	<u><i>Piloting Techniques I</i></u> Tools, Location, Chart symbols, latitude and longitude The Ship's Compass	Bowditch: sec. 322 Chart No. 1 (back of your chart) Bowditch: Chap. 6
<i>September</i>	<i>Week 2</i>		
Mon 2 nd		<i>LABOR DAY - NO CLASSES</i>	
Tue 3 rd		<i>NO CLASS</i>	
Wed 4 th	0900 - 1015	<u><i>Meteorology</i></u> -The Atmosphere	Bowditch: Chap. 38
Thu 5 th	0900 - 1015	<u><i>Piloting Techniques III</i></u> - Fixing the Ship's Position (includes running fix)	Bowditch, Ch. 8, (sec. 811-815, & 819-822), "Running Fix Brief"
Fri 6 th Sat 7 th	All Day	<i>Mystic Seaport Field Trip</i> <i>(Friday & Saturday)</i>	
<i>September</i>	<i>Week 3</i>		
Mon 9 th		<i>NO CLASS</i>	
Tue 10 th	1800	<i>Life at Sea</i>	

Wed 11 th	0900 - 1015	<u>Meteorology</u> - Global Circulation Cyclone & Anti-cyclones / Fronts	
Thu 12 th		NO CLASS	
Fri 13 th	0800-0915	<u>The Sailing Rig</u> Sail Theory Points of Sail	
September	Week 4		Bowditch: Chap. 16
Mon 16 th	1330-1630	<u>Celestial Navigation I</u> Overview / Theory Time and the Nautical Almanac The Sextant: Hs to Ho Geographic Position (GHA & Dec)	
Tue 17 th		NO CLASS	
Wed 18 th	0900 - 1015	<u>Celestial Navigation II</u> Local Apparent Noon	Bowditch: Chap. 16
Thur 19 th	0800-0915	<u>Safety at Sea</u> - Standing Orders, Shipboard emergencies/drills, Heavy weather/squalls NO CLASS	
Fri 20 th			
September	Week 5		
Mon 23 rd	1330-1630	<u>In the Water Training</u> - Immersion Suits / Life Raft	
Tue 24 th	0800-0915	<u>Coastal Piloting Quiz</u>	

Wed 25 th	1330 - 1600	<u><i>Celestial Navigation III</i></u> LHA Hc & Zn The Full Sight Reduction	
Thu 26 th		<i>NO CLASS</i>	
Fri 27 th		<i>NO CLASS</i>	
<i>September</i>	Week 6		
Mon 30 th	0900 - 1015	<u><i>Celestial Navigation Quiz</i></u>	
October		<i>NO CLASS</i>	
Tue 1 st			
Wed 2 nd	1330 - 1445	<u><i>Meteorology Quiz</i></u>	
Thu 3 rd		<i>NO CLASS</i>	
Fri 4 th		<i>Wrap up & Begin Travel to Fiji</i>	
Sat 5 th		<i>Lose a Day Crossing Date Line!</i>	
Sun 6 th		<i>Arrive Fiji - Join Ship's Company</i>	