

DEEP SEA NAVIGATION

MT-2121 FALL 2013

COURSE

Deep Sea Navigation

CREDITS

3 / 2 Lectures and 1 Lab per week

COURSE INFORMATION

Description: This course reinforces and continues the learning of the navigational processes and knowledge acquired in Coastal Navigation, that are used daily while at sea. In addition to applying knowledge already studied including position fixing techniques, sources of error and correction calculation, NAVAIDS, and navigational publications, the student will learn and understand the concepts of Tides and Currents and their calculation the navigational sailings, and introduction to voyage planning and record keeping. Classwork is supplemented by practical chart plot exercises during lab periods.

STCW Knowledge-Based Elements: This course will address the following STCW knowledge-based elements: 1) Ability to operate echo-sounding equipment and apply the information correctly; 2) Ability to determine errors of the magnetic and gyro compasses using terrestrial means; and 3) Allow for errors in magnetic and gyro compasses

STCW Practical Assessments: During the semester, cadets will have the opportunity to satisfy the following four STCW required assessments: 1) Accurate Dead Reckoning plotting; 2) Position fixing using corrected magnetic compass bearings; 3) Determining course to steer by true and magnetic compass; and 4) Determining course to steer allowing for set and drift..

- Should a cadet fail to pass any of these four assessments during the course, he/she will **not** have to repeat the course provided they have earned at least the 70% minimum grade requirement. The cadet will have **one** more opportunity to retake the assessment at a later scheduled time. Should they fail at this attempt, they will be required to repeat the course.
- A student who has failed to achieve at least a 70% in the class must retake then entire class again **and** all assessments regardless if any were previously passed.
- STUDENTS MUST PASS THESE ASSESSMENTS and receive a grade for the course (NOT an incomplete) PRIOR TO JUNIOR SEA TERM. **STUDENTS WILL NOT BE ALLOWED TO SHIP OUT DURING JUNIOR YEAR UNTIL THESE ASSESSMENTS ARE COMPLETED**

Prerequisite: All students enrolled in Coastal Navigation II MUST HAVE PASSED Coastal Navigation I with a D- or better.

Required Books & Accessories:

- DUTTONS 15th Edition
- BOWDITCH - Recommend you purchase the book, but **BOOK IS AVAILABLE ONLINE**
- Charts 12221-TR, 12354-TR, 13205-TR, 18465-TR & 37120
- Chart # 1 Latest Edition
- Pad of universal plotting sheets
- Plotting Gear: Triangles, Parallel Ruler, and Dividers. I recommend two dividers, one with points, and one with a pencil lead
- In addition to the books and calculators, plotting tools, **all charts and plotting sheets** (unless specifically requested by the instructor not to) are also to be brought to **every lab** throughout the semester.

COURSE OBJECTIVES

After completing Coastal Navigation II, Cadets should have:

- Confidence that they can keep their vessels out of danger when navigating in Coastal Waters by fixing their position through various techniques, planning passages, and making adjustments necessary to compensate for various sources of error
- Expanded their familiarity with and understanding of navigation terminology
- Furthered their ability to use the tools of navigation, and
- Appreciate how piloting skills are used in industry

COURSE OUTCOMES

As a result of completing Coastal Navigation II and successfully passing the associated examinations and assessments, Cadets will be able to:

- Use visual bearings and radar ranges to fix their position and stay clear of dangers
- Know the meaning and information proved by various NAVAIDs
- Appreciate sources of error and calculate corrections
- Demonstrate knowledge of available Navigational Publications and the information they provide
- Calculate the essential parameters of terrestrial navigation through The Sailings
- Determine tides and currents and know how these affect safe navigation, and
- Understand voyage planning including proper record keeping

Grading of multiple assignments issued throughout the semester as well as the results of tests and examinations will be used to determine satisfaction of these outcomes.

COURSE CONDUCT

- Course conduct will be in accordance with the MMA regimental system. All Cadets shall wear the appropriate uniform to each class. The MMA honor code will be strictly followed.
- All students will soon be ship's officers. They will be addressed and treated as such.
- Cell phone texting or calls are not permitted during class. Phones used for either purpose during class periods will be confiscated. Use of smart phone calculators is not permitted during tests and exams.
- Laptop computers are permitted in the classroom. However, if Internet surfing or use of social media is detected during class periods, laptop computer use privileges will be suspended.

GRADING POLICY

- In accordance with the Mass Maritime Academy academic policy, the minimum passing grade for Coastal Nav II is 60%. However, as this course satisfies a portion of your STCW requirements for licensing, in order to receive credit for the knowledge-based components of STCW for this subject, it is necessary to obtain a grade of 70%.
- Those who receive a grade of 60-69.99% only satisfy prerequisites for further Marine Transportation major courses, and ***must retake*** Coastal Nav II ***and*** all four practical STCW Assessments in order to satisfy their STCW requirements. Anyone receiving a grade below 60 satisfies no prerequisites or STCW requirements, and must retake the course to satisfy both.
- Grades will not be scaled.
- The + - system will be used.
- Grades will be averaged based upon the following percentage values:

Classroom Quizzes & Tests	20%	Lab Tests	15%
Classroom Assignments	15%	Lab Chart Exercises	15%
Classroom Final Examination	15%	Lab Chart Final Exam	15%
Participation Lab & Class	5%		

ATTENDANCE

Since this is an STCW course, no allowance for unexcused absence can be made under Federal Law. More than four (4) absences for ANY reason will result in an incomplete or failing grade.

It is your duty to keep up with the material, and to arrange to make up any quizzes, tests or material missed *in advance*. Make your arrangements beforehand, or a zero will be recorded for that work.

Mass Maritime Academy 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 Professor Fran Tishkevich, Director of Disability Compliance. ftishkevich@maritime.edu MMA Tel. ext. 2208 Room H-311A (Harrington Building). Thereafter, you must make me aware of any determined accommodations so that they may be implemented within our classroom.

Check BlackBoard prior to each class for assignments, tip offs and notes.

Instructor: LDCR John Belle Office # 321A jbelle@maritime.edu
Office Hours: Tues. 0900-0950, Wed. 1200-1250, Thurs. 1100-1150 or ***by appointment***

Instructor: Ms. Kerry Chicoine Office # 323A kchicoine@maritime.edu
Office Hours: Tues. 1300-1350, Fri. 100-1050, 1300-1350 or ***by appointment***

Instructor: Mr. Ed Vacha Office Hurley building evacha@maritime.edu
Office Hours: ***by appointment***

Our duty is to:

- guide you through the material,
- answer all your questions, e-mails, texts, etc.,
- be available should you need further explanation, and
- promptly return and comment on assignments, quizzes and tests.

It is your responsibility to:

- Come to class prepared to discuss the reading and subject matter for that day,
- Actively participate in classroom discussions and labs,
- Stop me at any point that you don't understand as I will be glad to go over it again, and
- Learn the material.
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Your comprehension of the material can only come from your active involvement in the homework, reading assignments, and the lectures.

Do your own work. These are not group assignments, because when you are standing on the Navigation Bridge looking out the windows, you and you alone must process the information. Any indication of collaborative work (outside of advice) on assignments will meet with a zero.

It is our personal goal to see each and every one of you succeed with this material. If you feel you are falling behind or having trouble understanding some of the subject matter, **contact one of us before you get in over your head. We can help you if you come to us.**

	Classes		Labs
1	Danger Bearings and Special Case Bearings #1	1	Review DR & TVMDC Chart Exercise all encompassing
2	Special Case Bearings #2 & Current Sailing Intro		
3	Current Sailing	2	Chart Exercise -- Luminous Range & Running Fix
4	The Sailings		
5	Plane Sailing	3	Chart Exercise - Special Case Bearings Usage TEST 1
6	Parallel Sailing		
7	Mid-Latitude Sailing	4	Chart Exercise - Current Sailings TEST 2
8	Time Zones		
9	Mercator Sailing	5	Chart Exercise - Time Zones & ETAs TEST 3
10	Mercator Sailing		
11	Great Circle Sailing	6	Mid Term Chart Plot - Assessments
12	Great Circle Sailing		
13	Interpolation Techniques	7	Chart Exercise - ENL Lab
14	Voyage Planning		
15	Voyage Planning	8	Great Circle calculation and plotting
16	Tides		
17	Tides	9	Plotting Sheet Review and Exercise TEST 4
18	Tides		
19	Tidal Calculations	10	Chart Exercise -- ENL Lab
20	Tidal Calculations		
21	Tidal Currents	11	Gnomonic Great Circle Plot TEST 5
22	Tidal Currents		
23	Current Calculations		
24	Current Calculations	12	Final Exam Practice Chart Exercise
25	Ocean Currents		
26	Log Books & Records	13	Chart Exercise FINAL - Assessments
27	Review		