

MASSACHUSETTS MARITIME ACADEMY

BRIDGE RESOURCE MANAGEMENT

MT-4133 FALL 2022

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COURSE OVERVIEW / DESCRIPTION

Bridge Resource Management is a capstone course and assessment program that allows students an opportunity to demonstrate competency in navigation watchstanding for STCW and USCG licensing requirements. Students successfully completing these practical and knowledge-based competencies are deemed capable of undertaking all the duties and responsibilities expected of an Officer In Charge of a Navigation Watch (OICNW). This course is a continuation of Applied Shiphandling. It utilizes and expands on the skills and knowledge gained from that course. Time in the Full Mission Bridge Simulator and on board the T/V Ranger work will focus on Voyage Planning, Piloting, Shiphandling, Bridge Team Management, and Watchstanding. Students will utilize skills acquired in Navigation classes, Rules of the Road, Seamanship classes, Radar/ARPA, Electronic Navigation & GMDSS, Applied Shiphandling, and ECDIS to effectively complete the simulation and underway scenarios. These scenarios will require thorough preparation, cohesive teamwork, and a skill level equivalent to that of an OICNW or Third Mate.

The classroom period will encompass all lectures and most testing.

Students taking this course are expected to be proficient in basic navigation elements: i.e. use of buoyage systems, determination of sunrise/sunset, determination of range of lights, determination of tides and currents for any given area, proper execution of Inland and International Navigation Rules of the Road, chartwork and use of DRs.

COURSE FORMAT:

This course consists of one 1-1/2 hour lecture and one 4 hour lab meeting per week.

COURSE CONDUCT:

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It is expected all students will soon be soon be ship's officers. They will be addressed and treated as such.

The course will be conducted in accordance with the MMA regimental system. All students **shall** wear the appropriate uniform of the day to each class.

Class discussion is a crucial component of this course. All members of this class, including the instructor, will grant others respect, even when discussing challenging subjects. In this course, the aim of our inquiries is critical understanding, even while topics may be controversial. You will be expected to participate in class discussions while demonstrating maturity and civility.

Blackboard shall be used as the primary tool for providing information to students. Each student is individually responsible for checking their Blackboard sections frequently for updated posted materials, assignments, notices, schedules, etc. If a student cannot access Blackboard, they must contact IT for assistance or risk falling irreparably behind in class.

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COURSE CONDUCT CONTINUED:

The MMA honor code will be strictly followed during the course of the semester. Any submitted work be that examinations, tests, exercises, assignments, etc. is expected to be only your work. No outside sources may be used in the production of your work. No collaboration with any individual is permitted unless specifically authorized by the instructor for example during lecture breakout sessions. If the instructor has any concern about a possible violation of the MMA Honor Code, the submitted work will be given a grade of zero and the instance may be pursued with the Commandant of Cadets after referral to the Vice President of Academic Affairs. In serious cases, violations of the Honor Code may result in dismissal from the Academy.

Cell phone texting or calls during class sessions is not permitted, regardless of whether a student is participating in-person or on-line. **Cell phones *SHALL* be put away and remain away until the end of class, unless otherwise directed by the instructor. Use of your cell phone during lecture will result in immediate dismissal from class and a zero for that day's class. Repeated violations of this classroom policy may result in a reduction of your overall grade by one letter grade and a report of the repeated violations to Dean of Undergraduate Studies and/or VP of Academic Affairs.**

Laptop computer use for social media or Internet surfing during class time is strictly prohibited. **Repeated violations of this classroom policy may result in a reduction of your overall grade by one letter grade and a report of the repeated violations to Dean of Undergraduate Studies and/or VP of Academic Affairs**

The Academy offers, upon request, accommodations to students with documented learning disabilities. The ADA Coordinator, Asst. Dean Elaine Craghead, evaluates the documentation provided, determines appropriate services, and is available to discuss accommodations with students. The Disability Resources office is located in the Academic Resource Center, ABSIC 320. Students can drop in during normal business hours, M-F 0800-1600, or call x5120, or email ADAcompliance@maritime.edu.

Thereafter, you must make your instructors aware of any determined accommodations so that they may be implemented.

DIVERSITY, EQUITY & INCLUSION:

MMA welcomes students of all backgrounds, identities, and abilities, and is committed to fostering a learning community in which all students are treated with respect and civility. Students are encouraged to share their unique perspectives while remaining open to the views of others and appreciating the opportunity to learn from one another. The Academy is committed to inclusivity, diversity, and equity, and believes that all students, no matter their race, gender, sexual orientation, religious beliefs, abilities, nationality, or economic

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status, have the right to access the resources they need to achieve their educational and professional goals.

MENTAL HEALTH ISSUES

If you are experiencing anxiety, depression, alcohol or drug concerns, difficulty concentrating, or other mental health issues, please contact Jennifer Levesque in Counseling Services at jlevesque@maritime.edu, or at x5180.

PREREQUISITES:

Applied Shiphandling (MT 3231) & ECDIS (MT-3224) (Co-Requisite acceptable)

If a student does not meet either or both of these prerequisites, they must notify the instructor immediately. Discovery of failure to comply with these prerequisite requirements at a later time will result in a failing grade for the course.

COURSE LEARNING OBJECTIVES

STCW Knowledge-Based Learning Objectives:

Completion of this course will demonstrate knowledge and understanding of the following STCW elements:

- [RFPNW-X3.2](#) Use of appropriate internal communication and alarm systems
- [OICNW-A2.2](#) Thorough knowledge of the Principles to be observed in keeping a navigational watch
- [OICNW-A2.4](#) The use of information from navigational equipment for maintaining a safe navigational watch
- [OICNW-A2.6](#) The use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures
- [OICNW-A2.7](#) BRM allocation, assignment, and prioritization of resources
- [OICNW-A2.7](#) BRM effective communication
- [OICNW-A2.7](#) BRM assertiveness and leadership
- [OICNW-A2.7](#) BRM obtaining and maintaining situational awareness
- [OICNW-A2.7](#) BRM consideration of team experience
- [OICNW-C7.4](#) BRM allocation, assignment, and prioritization of resources
- [OICNW-C7.4](#) BRM effective communication onboard and ashore
- [OICNW-C7.4](#) BRM decisions reflect consideration of team experiences
- [OICNW-C7.4](#) BRM assertiveness and leadership, including motivation
- [OICNW-C7.4](#) BRM obtaining and maintaining situational awareness
- [OICNW-C7.5](#) Decision Making: situation and risk assessment
- [OICNW-C7.5](#) Decision Making: identify and consider generated options
- [OICNW-C7.5](#) Decision Making: selecting course of action
- [OICNW-C7.5](#) Decision Making: evaluation of outcome effectiveness

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Observation during simulations and underway exercises as well as tests and examinations will be used to determine satisfaction of these objectives.

STCW Practical Element Learning Objective:

Completion of this course will demonstrate proficiency in the following skills:

- [OICNW12A](#) Fix by two bearings
- [OICNW13A](#) Correction of Charts & Publications
- [OICNW15A](#) Determine gyro compass error by bearing of range
- [OICNW15B](#) Determine magnetic compass error
- [OICNW15C](#) Determine magnetic compass deviation
- [OICNW21D](#) Determine Risk of Collision
- [OICNW21E](#) Maneuver to avoid Risk of Collision - Meeting
- [OICNW21F](#) Maneuver to avoid Risk of Collision - Overtaking
- [OICNW22B](#) Keep a Safe Navigation Watch
- [OICNW22C](#) Notify Master When Appropriate
- [OICNW22D](#) Keep Safe Anchor Watch
- [OICNW22E](#) Navigate in Restricted Visibility
- [OICNW22F](#) Turn Over a Watch
- [OICNW23A](#) VOYAGE PLANNING
- [OICNW23B](#) Execute A Voyage Plan
- [OICNW23C](#) Watch Augmentation
- [OICNW23D](#) BRM Condition III – Collision Avoidance
- [OICNW23E](#) BRM Condition III – Navigation
- [OICNW23F](#) BRM Condition II or III Error Trapping
- [OICNW23G](#) BRM Condition II or III –Navigation and Collision Avoidance
- [OICNW23G](#) BRM Condition III- Establish a Bridge Team
- [OICNW51A](#) Maneuver for man overboard
- [OICNW51B](#) Course change of more than 45°
- [OICNW51C](#) Emergency stop

Assessment during simulations and underway exercises will be used to determine competency in these objectives.

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COURSE OUTCOMES:

After successfully completing the course the student will:

- Satisfactorily perform the duties of an Officer in Charge of a Navigational Watch.
- Demonstrate knowledge of principles of ships' maneuvering characteristics
- Demonstrate ability to perform simple maneuvers and operations with varying vessels
- Demonstrate ability to be a successful member of a Bridge Team
- Demonstrate proper voyage planning principles and techniques.

Observation during simulations and underway exercises as well as tests and examinations will be used to determine satisfaction of these outcomes.

ATTENDANCE & ABSENCES

Since this is an STCW course, no allowance for unexcused absence will be made. Attendance at all classes is mandatory and tardiness is not acceptable. Missing a meeting of class, be that lecture or lab, for ANY reason will result in disciplinary action, an incomplete, or possibly a failing grade for the course.

Notice of absence for any reason must be given to the instructor prior to the respective class. Absences must be made up. Remember that an individual absence can greatly impact other members of your team by forcing cancellation of an exercise due to insufficient personnel.

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

Assignments and Exercises **will not be accepted for credit past their due date.**

USCG MMA program approval conditions for this course mandate each student to perform a MINIMUM of FOUR HOURS of self-study to adequately prepare for each scheduled session. Full commitment is expected of each student to fulfill the course, whether acting individually or as a team member. Insufficient effort is easily detected and will not be tolerated.

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GRADING POLICY

In accordance with the Mass Maritime Academy academic policy, the minimum passing grade for Bridge Resource Management 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 earn a minimum grade of 70%.

Those who receive a grade of 60-69% must retake Bridge Resource Management in order to satisfy their STCW requirements. When repeating the course, any and all Practical Assessments embedded within the course must a/so be completed again, even if they may have been successfully passed during the first enrollment.

Grades will not be scaled. The+ / - system will be used.

Bridge Resource Management course grade is comprised of four components:

1. Lecture - 20%
2. Simulator - 30%
3. Ranger - 30%
4. Final Examination - 20%

The Final Examination covers material from Lecture, Simulator, and Ranger.

A student must achieve at least a 60% in both the RANGER and SIMULATOR portions of the course in order to pass.

Final Course Grading:

100 - 93%	A	72.9 - 70%	C-
92.9 - 90%	A-	69.9 - 67%	D+
89.9 - 87%	B+	66.9 - 63%	D
86.9 - 83%	B	62.9 - 60%	D-
82.9 - 80%	B-	Below 60%	F
79.9 - 77%	C+		
76.9 - 73%	C		

Students must earn a minimum combined grade of 70% and successfully complete all embedded practical assessments to pass Bridge Resource Management.

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LAB SIMULATION COMPONENT:

Captain Cunningham

Lab Simulation Description

A capstone assessment program allowing deck, undergraduate students an opportunity to demonstrate competency in Bridge Resource Management and Watchstanding for STCW and USCG licensing requirements. Students successfully completing these competencies are capable of undertaking all of the duties and responsibilities expected of a deck watchkeeping officer. Upon successful completion of this course, a U.S. Coast Guard approved certificate is issued certifying that the holder demonstrates appropriate competence in watchkeeping, bridge team management, and bridge resource management, meeting the standards prescribed by IMO/STCW and the U.S. Coast Guard. [Lab time required]

This course consists of one 1-1/2-hour lecture and one 4 hour lab per week with practical assessments and a comprehensive final examination.

Entrance requirements

As per USCG, Academy and Marine Transportation Department requirements, any student enrolled in this course must have previously successfully satisfied the following prerequisites:

- MT 3231 Applied Shiphandling (Grade of 60 or better)
- MT 3222 ARPA (Grade of 70 or better and all ARPA assessments completed)

Required Charts

Each BRM Section will be required to purchase one chart of the following: 11324, 52039, 18649 & 18650. These charts can be purchased at MMA bookstore.

FMSS Grading - is 30% of overall BRM Grade

FMSS breakdown of Simulation Grade to equal 100 % as listed below:

- 85% Underway Simulation Exercise
- 10% Homework
- 5% Class Participation & Professionalism

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Learning Objectives

Demonstrate knowledge and understanding of the following STCW elements:

- [RFPNW-X3.2](#) Use of appropriate internal communication and alarm systems
- [OICNW-A2.2](#) Thorough knowledge of the Principles to be observed in keeping a navigational watch
- [OICNW-A2.4](#) The use of information from navigational equipment for maintaining a safe navigational watch
- [OICNW-A2.6](#) The use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures
- [OICNW-A2.7](#) BRM allocation, assignment, and prioritization of resources
- [OICNW-A2.7](#) BRM effective communication
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- [OICNW-C7.5](#) Decision Making: situation and risk assessment
- [OICNW-C7.5](#) Decision Making: identify and consider generated options
- [OICNW-C7.5](#) Decision Making: selecting course of action
- [OICNW-C7.5](#) Decision Making: evaluation of outcome effectiveness

Demonstrate proficiency in the following skills:

- [OICNW12A](#) Fix by two bearings
- [OICNW13A](#) Correction of Charts & Publications
- [OICNW15A](#) Determine gyro compass error by bearing of range
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- [OICNW21F](#) Maneuver to avoid Risk of Collision - Overtaking
- [OICNW22B](#) Keep a Safe Navigation Watch
- [OICNW22C](#) Notify Master When Appropriate
- [OICNW22D](#) Keep Safe Anchor Watch
- [OICNW22E](#) Navigate in Restricted Visibility

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- [OICNW22F](#) Turn Over a Watch
- [OICNW23A](#) VOYAGE PLANNING
- [OICNW23B](#) Execute A Voyage Plan
- [OICNW23C](#) Watch Augmentation
- [OICNW23D](#) BRM Condition III – Collision Avoidance
- [OICNW23E](#) BRM Condition III – Navigation
- [OICNW23F](#) BRM Condition II or III Error Trapping
- [OICNW23G](#) BRM Condition II or III –Navigation and Collision Avoidance
- [OICNW23G](#) BRM Condition III- Establish a Bridge Team
- [OICNW51A](#) Maneuver for man overboard
- [OICNW51B](#) Course change of more than 45°
- [OICNW51C](#) Emergency stop

Topics & Assessments:

- Full Mission Bridge Simulator
 - Arrival Galveston, TX to Anchor
 - Docking and Undocking Baton Rouge, LA
 - Pilot Maneuvering Inbound Docking Port Everglades, FL
 - Transit Straits of Gibraltar
 - Inbound from Sea to Anchorage 9 San Francisco, CA
 - Emergency Stop

Simulation objectives

After successfully completing the course the student will:

- Satisfactorily perform the duties of an Officer in Charge of a Navigational Watch.
 - Demonstrate knowledge of principles of ships' maneuvering characteristics
 - Demonstrate ability to perform simple maneuvers and operations with varying vessels
 - Demonstrate ability to be a successful member of a Bridge Team
 - Demonstrate proper voyage planning principles and techniques.
1. There is only one Practical Assessment that will be completed within the SIMULATOR PORTION of his course: Emergency Stop. (Copy of the control sheet will be provided). All other Practical Assessments are performed during the RANGER portion, and will be explained within the RANGER Syllabus.
 2. Arrangements may be made for students to take this assessment, outside of normal class hours at times convenient to the student and the instructor after Class Session 6.

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3. Should a cadet fail to pass the practical assessments of the course: (RANGER and simulator) he/she will receive an incomplete for a grade until the assessments are successfully passed.

Assessments Defined – is a combination of a practical exam in the use of BRM and a comprehensive simulated bridge watch will cover the STCW assessments and determine your lab simulation grade.

Lab Attendance

Attendance is mandatory for all BRM labs. This is an STCW regulated course required training. The BRM Lab meets one time per week for a four hour simulation lab. . Missing a BRM lab will result in a failure to meet STCW requirements and the student will be asked to withdraw from the course.

Documented Disability

The Academy offers, upon request, accommodations to students with documented learning disabilities. The ADA Coordinator, Asst. Dean Elaine Craghead, evaluates the documentation provided, determines appropriate services, and is available to discuss accommodations with students. The Disability Resources office is located in the Academic Resource Center, ABSIC 320. Students can drop in during normal business hours, M-F 0800-1600, or call x5120, or email ADAcompliance@maritime.edu.

Thereafter, you must make your instructors aware of any determined accommodations so that they may be implemented.

Note: Accommodations will be granted for knowledge based performance measures but WILL NOT be granted for all skill and practical performance based assessments.

No Food or Coffee in FMSS. Highest Professionalism maintained at all times. Bad habits you develop in simulation, will carry with you to industry upon graduation.

Successful completion of this course is determined by you the student. Do not fall behind, do the reading, ask questions when in doubt, and report to class ready to work and learn. Our mutual goal for this course is for each of you to enhance your professional watchstanding knowledge and become a licensed mate in the U. S. Merchant Marine. I look forward to working with you this semester.

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GENERAL INFORMATION FOR ALL LABS:

Check course schedules provided for your particular date of each session below.

Be knowledgeable of any postings on that site.

Unless otherwise indicated in the homework assignment use the following tidal and current information websites for ALL your homework problems:

NOAA TIDAL CURRENT TABLES AT:

<https://tidesandcurrents.noaa.gov/noaacurrents/Regions>

NOAA TIDE TABLES AT:

http://tidesandcurrents.noaa.gov/tide_predictions.html

Chart Voyage / Passage Plans will be integrated and displayed on ECDIS, Radar & ARPA and will be all monitored throughout navigation simulation exercise as well.

ALL TIDES, CURRENTS and SUNRISE/SET HOMEWORK are to be calculated for THE SCHEDULED AND POSTED DAY OF YOUR LAB for each HOMEWORK and UNLESS INDICATED OTHERWISE, for the time that the local port is keeping on that date!

As an example: No matter when it was turned in, Lab 1 homework would be calculated for:

March 02 for Section 21 & 25

March 05 for Section 41,

April 14 for Sections 71 & 75

April 16 for Section 91

To find the latitude/longitudes of the ports for sunrise and sunset calculations, you may use the website at: <http://www.latlong.net/>

REMEMBER TO CONVERT THE DECIMALS TO DEGREES AND MINUTES !!!!!

WATCH THE CHANGING FROM STANDARD TIME TO DAYLIGHT SAVINGS TIME.

FOR HOMEWORK: ALL DONE NEATLY ON 8-1/2" 11" PAPER.

LABEL ALL HOMEWORK WITH: LAB #, DATE OF LAB, NAME, SECTION, GROUP ON TOP: *i.e.*: John Smith – Section 21, (You will be assigned Section and Group #s by our first lab)

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HOMEWORK FOR NEXT SESSION – LAB 1:

Prepare Voyage Plan for LAB 1– Arrival Galveston to anchor– Use format provided and on blackboard. Charts and exercise instructions will either be given to you at the lab the week before, or are standing up outside my office (by the wooden chart table) with your section number on them.

REVIEW: Equipment manuals on Blackboard, especially the AIS manual

CALCULATE AND TURN IN THE FOLLOWING:

TIDES: Galveston, TX Bay Entrance South Jetty Station # TEC4507 for each student section

CURRENTS: Galveston Bay Entrance between jetties at 34 ft depth for each student section

SUNRISE and SUNSET for Port of Galveston & and Port Arthur, TX for each student section

As Deck Officer, become familiar with World Port Index, it can be accessed via ECDIS. Prior to next week lab, Instructor will pick out random questions to each section and will be graded with homework. For example, In Port of Galveston, can vessel discharge garbage waste via shoreside, pilotage compulsory in certain areas ?

FYI: The VTS Manual for Houston and Galveston can be found at: <http://www.turnservices.com/Images/Interior/safety/navigation%20documents/vts/vts%20houston.pdf>

HOMEWORK FOR NEXT SESSION – LAB 2:

Prepare Voyage Plan for LAB 2 – Docking and Undocking at Baton Rouge, LA with currents and dredging anchors as per Lab Instruction Sheet.

CALCULATE AND TURN IN THE FOLLOWING: SUNRISE and SET for Baton Rouge, LA and for New Orleans, LA for each Student section

RIVER STAGE (height) at Mississippi River at Baton Rouge, LA (Found on-line) The VTS Manual for the Lower Mississippi River can be found at:

<http://www.turnservices.com/Images/Interior/safety/navigation%20documents/vts/vts%20lower%20mississippi.pdf>

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HOMEWORK FOR NEXT SESSION – LAB 3:

Prepare Voyage Plan for LAB 3– Inbound Port Everglades, Fort Lauderdale from Sea with moderate large vessel and small vessel traffic in vicinity as you make your approach.

From sea, you will contact Port Everglades Port Control and await berthing instructions / berth availability and proceed inbound in a safe manner to dock.

CALCULATE AND TURN IN THE FOLLOWING:

TIDES: Port Everglades tides for day of lab each student section

CURRENTS: Calculate Port Everglade Entrance Currents day of lab.

SUNRISE and SUNSET for Port of Everglades, Florida for each student section

HOMEWORK FOR NEXT SESSION - LAB 4:

VOYAGE PLAN FOR EXERCISE 4: Transit Straits of Gibraltar

CALCULATE AND TURN IN THE FOLLOWING:

TIDES: Calculate tides for Gibraltar for for 1500 hours Central European Time (CET).
Use data from: <http://tides.mobilegeographics.com/locations/2146.html>

Students 5,6,7,8 calculate tides for Algeciras for 1500 hours Central European Time (CET)

Use data from: <http://www.tides4fishing.com/es/cadiz/algeciras>

CURRENTS: Write a paragraph describing how the currents work within the Straits of Gibraltar, according to your chart # 52039, and make sure you understand how it correlates to the lines on that chart!

SUNRISE AND SET: For each student section, calculate both for Gibraltar Harbor, in CET and calculate both for Casablanca, Morocco for CET.

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HOMEWORK FOR NEXT SESSION - LAB 5:

VOYAGE PLAN FOR EXERCISE 5: CRASH STOP - Thimble Shoal Channel, Norfolk Virginia.

When using Emergency Crash Stop, use of rudder cycling & engine EOT must be used in sync. to properly slow vessel.

When evolution is completed, ownship should not veered more than 20 degrees off its original course.

CALCULATE AND TURN IN THE FOLLOWING:

TIDES: Each student section, calculate tides for Thimble Shoal Channel Virginia 1500 hours.

Use data from: [https://www.tideschart.com/United-States/Virginia/City-of-Hampton/Thimble-Shoal-Channel-\(west-end\)](https://www.tideschart.com/United-States/Virginia/City-of-Hampton/Thimble-Shoal-Channel-(west-end))

CURRENTS: For each student section, determine the set and drift of the current in **Chesapeake Bay Bridge Tunnel 75nm west, Thimble Shoal Channel (CHB9902)**

Depth: 29 feet at 1500 hours to 1700 hours

Use data from <https://tidesandcurrents.noaa.gov/noaacurrents/Stations?g=464>

SUNRISE AND SET: For each student section, calculate both for Norfolk Virginia day of lab.

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LAB 6: San Francisco Inbound from Sea to Anchorage

In accordance with OICNW STCW Requirements, Final Lab piloting evolution will be Inbound San Francisco via Golden Gate Bridge and proceed to anchorage area 8 in Oakland.

While underway, you must demonstrate proper call in points and coordinate with VTS to manage vessel traffic within anchorages, identify regulated navigation areas, and safety zones in that time.

One Anchorage delegated by VTS, Master must safely anchor vessel in prescribed anchorage utilizing proper anchor commands to Chief Mate on bow to complete precision anchoring.

CALCULATE AND TURN IN THE FOLLOWING:

TIDES: Benicia, CA (Under Carquinez Strait – Station ID # 9415111) at 1800 and San Francisco, North Point, Pier 41, CA StationId: 9414305 at 1200 for each Student section

CURRENTS: GOLDEN GATE BRIDGE # 6246 0.88 nm NE of, **21' Depth** At 1000 for each student section

BENICIA BRIDGE - Benicia, CA (Under Suisan Bay) At 1800 for each student section.

SUNRISE and SET for: Port of Sacramento, CA and for Benicia, CA for each student section.

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PLEASE NOTE:

- **There will be an extensive Bridge Team Management meeting end of class for prep of next week lab / exercise. All questions regarding exercise to be discussed in depth.**
- **Also, changes may be made to the Lesson Plans for Labs at any time during the semester. MONITOR BLACKBOARD for notifications of any changes.**

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RANGER COMPONENT FAL 2022

Learning Objectives

The students who have successfully completed Bridge Resource Management will have gained experience in handling vessels in actual and simulated conditions and thereby will be able to make a more effective contribution to the bridge team during ship maneuvering operations. In particular, students will gain familiarization in the use of engines and helm for ship maneuvering, an understanding of the effects on the behavior of the ship due to wind, current, narrow channels, and condition of loading. The student will also gain a greater awareness of the importance of passage planning or maneuvering, vessel operations, navigation, use of radar, bouyage systems, piloting, application of the COLREGS, docking, contingency planning, and a greater understanding of efficient bridge procedures.

This program is designed to provide the students with the opportunity to develop skills and proficiency in topics of study offered in the following prerequisites:

MT1221 (Coastal Nav I), MT2231 (Basic Seamanship), MT2161 (Rules), MT3222 (ARPA), and MT3231 (Applied Ship I)

Demonstrate knowledge and understanding of the following STCW elements:

- [RFPNW-X3.2](#) Use of appropriate internal communication and alarm systems
- [OICNW-A2.2](#) Thorough knowledge of the Principles to be observed in keeping a navigational watch
- [OICNW-A2.4](#) The use of information from navigational equipment for maintaining a safe navigational watch
- [OICNW-A2.6](#) The use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures
- [OICNW-A2.7](#) BRM allocation, assignment, and prioritization of resources
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- [OICNW-C7.5](#) Decision Making: evaluation of outcome effectiveness

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Demonstrate proficiency in the following skills:

- [OICNW12A](#) Fix by two bearings
- [OICNW15A](#) Determine gyro compass error by bearing of range
- [OICNW15B](#) Determine magnetic compass error
- [OICNW15C](#) Determine magnetic compass deviation
- [OICNW51A](#) Maneuver for man overboard
- [OICNW51B](#) Course change of more than 45°
- [OICNW51C](#) Emergency stop

Other Objectives

After successfully completing the course the student will:

- Satisfactorily perform the duties of an Officer in Charge of a Navigational Watch.
- Demonstrate knowledge of principles of ships' maneuvering characteristics
- Demonstrate ability to perform simple maneuvers and operations with varying vessels
- Demonstrate ability to be a successful member of a Bridge Team

Instructor

Capt E. H. Morrow, Jr

Office: HA 302

Email: emorrow@maritime.edu

Office Hours: TBD

Text

APPLIED SHIPHANDLING RANGER MANUAL, 13th Edition Captain Patrick J. Modic

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Grading

- A. The instructor intends to administer **four (4) short quizzes** while on board the T/V Ranger. The first will be given during the second lab and will include material from both labs. The weekly quizzes are intended to assess the student's preparedness to execute the scheduled training evolution for that particular day. **Questions on the quizzes will be based on material and lessons found in the assigned readings, prerequisite courses, prior labs, and that day's lab.**
- B. In the process of executing the tasks that comprise the scheduled learning objectives, students will be individually assessed on their attitude and aptitude. This weekly participation grade is a qualitative assessment in five major areas: timeliness, attitude, preparation, initiative, and demonstrable skills. Each area listed above is worth 2 points for a possible total of 10 points for any given lab.
- C. The Ranger component of the Bridge Resource Management grade will be comprised of the **average of weekly tests weighted 70% and weekly participation 30%**. There will be both RANGER and Simulator questions on the final exam.
- D. The final Bridge Resource Management grade will be comprised of your simulator grade, Ranger grade, and final exam.
- E. There are **seven (7) performance-based assessments (STCW)** associated with this course (these are described in appendix 1). The performance-based assessments are Pass/Fail. These performance-based assessments will be administered during the academic semester. Per departmental policy individuals will be allowed two opportunities during the lab period to demonstrate proficiency. Individuals failing to pass the performance-based assessments will be issued an incomplete for the semester if they otherwise pass the course.

Learning Outcomes

Upon successful completion of Bridge Resource Management the student will be familiar with the safe operation of a vessel. This will include navigation, linehandling, emergency procedures, vessel operational and lifesaving systems, anchoring, radar navigation and collision avoidance and operating within the COLREGS. The students will have operated the T/V RANGER in coastwise exercises and docking evolutions. They will have successfully completed six (6) STCW competencies demonstrating some of the aforementioned evolutions. The student will have the knowledge, and some experience, in getting a vessel underway, completing a voyage through proper voyage planning and safely arriving back in port.

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Miscellaneous

- A. The Academic Code of Conduct will be strictly enforced.
- B. Each student is responsible for assignments and work covered in the scheduled training evolution whether he/she is present or not.
- C. **It is not the purpose of this program to reintroduce the student to basic navigational elements such as bouyage systems, tides and currents, set and drift, the use of a D.R., the concepts of the rules of the road (to include lights shapes and sounds), radar operation etc.** Although these subjects will be discussed in the lab, **students are expected to be competent** in the above areas as a condition for entry into this program. Students will be tested weekly in these subject matters to ensure that these skills if not already attained, are achieved in order to support more demanding labs in the future.
- D. Attendance is a course requirement. Because of the sea time connected with the completion of this program, **there are no unauthorized absences.** More than one emergency absence, for **whatever reason**, will result in an incomplete. A Cadet who misses a lab **due to an emergency** or **MMA Function** shall report to the instructor ASAP to arrange a makeup lab. An incomplete will turn into a failure two weeks into the next semester.
- E. Office hours are established to allow the student the opportunity to consult with the instructor. Office hours are the ideal forum to discuss individual professional progress and to answer additional questions. Students schedules may conflict with the posted office hours, therefore the instructor will make themselves available around the students schedule when necessary. If you are having a problem, do not hesitate to see your instructor.
- F. The Academy offers, upon request, accommodations to students with documented learning disabilities. The ADA Coordinator, Asst. Dean Elaine Craghead, evaluates the documentation provided, determines appropriate services, and is available to discuss accommodations with students. The Disability Resources office is located in the Academic Resource Center, ABSIC 320. Students can drop in during normal business hours, M-F 0800-1600, or call x5120, or email ADAcompliance@maritime.edu.
- G. You will be treated and expected to behave as the professionals you are aspiring to be.

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T/V RANGER COMPONENT FALL Semester 2022

From: Capt. E. H. Morrow, Jr, Instructor
To: Bridge Resource Management (BRM) Students,
Subject: **Auxiliary Training Vessel RANGER Training Schedule**

1. The *T/V Ranger* will be made available for cadet navigation and seamanship training in accordance with the schedule provided in paragraph 7 and the calendar provided herein.
2. Students will report to the *T/V Ranger* for their respective labs as indicated in paragraph 7. A section scheduled for training on a given date will report to the vessel, and those not scheduled for the *T/V Ranger* will report to the ship simulator.
3. **In preparation for each Ranger Lab, students will read and study the assigned chapter in the Applied Shiphandling Ranger Manual, 13th Edition, by Captain Patrick J. Modic, AND the assigned readings at the beginning of each assigned chapter. Additionally, students will know the tides, currents, and weather for the day's voyage. The Coast Guard course approval mandates that each student completes a minimum of four (4) hours of preparation for each scheduled lab.**
4. Students will report to the *T/V Ranger* on their assigned dates prepared to begin the lab with proper uniforms as indicated by the Commandant's Office for lab classes: steel-toed boots, flashlights, pocket knives, work gloves, and foul weather gear. It is advised that you dress very warmly with layers of clothing, as you will be spending time both inside the wheelhouse and out on deck. You will also need nav tools and your RANGER manual. Do not assume that adverse weather will result in a lab cancellation. Voyage cancellations are at the discretion of the Master of the *T/V Ranger*.
5. The lab indicated for SHIPHANDLING II-Dock/Undock will be carried out in New Bedford. As the date nears arrangements will be made for transportation.
6. There will be **four (4) examinations/quizzes** administered, beginning with the second lab. The first test will be comprised of material from prerequisite subjects including, but not limited to: Rules, Radar, Seamanship etc., as well as the required reading and notes from the first lab. **Each subsequent week's quiz will focus on the Modules assigned for that particular week, however all material covered in prior labs, readings, and prerequisite classes may be on the quiz as well.**

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<u>LAB TRAINING SUBJECT</u>	<u>READING</u>
1) COASTAL NAV. EX. & ANCHOR WORK	Chapters 10 & 13
2) SHIPHANDLING I: MOB, & RADAR SYSTEMS	Chapters 11 & 15
3) SHIPHANDLING II-DOCK/UNDOCK	Chapters 12
4) COMPASS COMPARISON & MAG COMPASS DEVIATION	Chapters 8 & 9
5) COASTAL NAVIGATION EXERCISE I	Chapters 10
6) COASTAL NAVIGATION EXERCISE II	Chapters 1-16

**** Your lab schedule may vary by section, see the calendar****

- Students are to sign aboard the *T/V Ranger* at 0730 (1200) and prepare the vessel for a 0800 (1230) departure. In the event of a cancellation, dates, and/or the order of training events may be adjusted.
- During each session aboard the *T/V Ranger* cadets will be assigned duties on the T/V RANGER EMERGENCY STATION BILL BILLET (APPLIED SHIPHANDLING RANGER MANUAL, 13th ed, Capt. Patrick J. Modic). Cadets will be assigned a different duty each session in order that everyone is given a chance at each of the different assignments (Billets 4 through 7). **Cadets are required to know their emergency station / assignment upon signing on board.**
- Assignment of these training subjects is derived from IMO Shiphandling, Bridge Resource Management, and *T/V Ranger* Joint Training Programs (Version: SHBRMTVR 01-98).
- NOTE: This syllabus may be amended, with proper notification from the instructor, at any time during the semester.**

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LECTURE COMPONENT

Captain Cunningham

This syllabus contains information regarding the Lecture portion of Bridge Resource Management. It includes the lesson topics and assignments for each week's class meeting. This syllabus works in conjunction with the overall BRM Classroom Policy and Procedures Syllabus, the Simulation Syllabus, and the Ranger Syllabus.

With the exception of quizzes administered on the Ranger, all testing will be conducted during the Lector portion of the course.

An all-encompassing Final Examination including Lecture, Simulator, and Ranger material will be given during final week as scheduled by the Register's Office for your lecture section. This final examination will make up 20% of the student's overall course grade.

The Lecture component of BRM makes-up 20% of the student's overall grade for the course.

Lecture grading will consist of:

Class Attendance, Participation and Discussion	10%
Weekly Reading Quizzes	30%
Tests	60%

Very Short Quizzes covering the reading assignment for the week will be given each meeting when there is not a test scheduled. Three unit tests are expected for the semester. Tests will be announced and scheduled when they best fit the material covered.

Required Textbooks:

Bridge Resource Management (BRM) for Small Ships, Parrott: (Book or ebook)

Both tests are available in the MMA School Bookstore.

Additional materials will be supplied by the instructor and/or posted on Blackboard

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LECTURE 1 - BRM – The Human Factor/Element

READING ASSIGNMENTS ***PRIOR TO*** LECTURE 1

- Text 1 – BRM by Parrott – Read Prologue, Introduction and Planning Pages ix through page 4
- Review Syllabus for lectures (Posted on blackboard)

CLASSROOM TOPICS: What is BRM – BRM History, Human Factor/Element, Error Chain Introduction
Bridge Resource Management Video - Videotel

CASE STUDY - ROYAL MAJESTY

LECTURE 2 - MENTAL MODELS – Passage Planning and Procedures

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 2:

- BRM for Small Ships – Parrott: Chapters 1, 2, 3(pp.26-32), & 4

CLASSROOM TOPICS:

Voyage Planning, Arrival & Departure, Checklists, Watch Conditions, Calling the Master, SOPs, Creating a Mental Model

CASE STUDIES (All from text) :

- Tug SCANDIA
- SAFARI SPIRIT

LECTURE 3 - Situational Awareness

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 3:

- BRM for Small Ships – Parrott: Pages 32-40, 61-62

CLASSROOM TOPIC: Situational Awareness, Voyage Monitoring

CASE STUDY REVIEW: ROYAL MAJESTY

CASE STUDIES

- USS DWIGHT D. EISENHOWER

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LECTURE 4 - Stress

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 4.

- BRM for Small Ships – Parrott: Ch 7

CLASSROOM TOPIC: Stress

CASE STUDY:

- Tug MAUVILLA (From Text)

LECTURE 5 – Complacency and Distraction

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 5.

- BRM for Small Ships – Parrott: Chapters 5, 6 & 9

CLASSROOM TOPIC: Complacency and Distraction

CASE STUDIES:

- QUEEN OF THE NORTH – (From your text reading)

LECTURE 6 - Fatigue

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 6.

- BRM for Small Ships – Parrott: Chapters 8 & 10

CLASSROOM TOPIC: Fatigue & Transition

CASE STUDIES:

- M/V WORLD PRODIGY
- SHEN NENG 1
- STAR PRINCESS

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LECTURE 7 – Communications and Watch Relief

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 7.

- BRM for Small Ships – Parrott: Chapter 11

CLASSROOM TOPIC: Communications

CASE STUDY:

- Balsa 37 / Fred Bouchard Collision

LECTURE 8 – Pilot Integration.

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 8.

CLASSROOM TOPIC: VHF Usage and Pilot Integration after Communications is finished

CASE STUDIES:

- COSCO BUSANE
- QE 2 Grounding

LECTURE 9 – Teamwork

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 9.

- BRM for Small Ships – Parrott: Chapter 12

CLASSROOM TOPIC: Teamwork

CASE STUDY REVIEW:

- NOORDAM and Mount Ymitos
- Empress of the North

LECTURE 10 – Leadership

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 10.

- BRM for Small Ships – Parrott: Chapter 13

CLASSROOM TOPIC: Teamwork (finish up) and Leadership, Videos – Why Leaders Eat Last & Turn the Ship Around

- VIDEO – Watch video: Leaders Eat Last <https://www.youtube.com/watch?v=ReRcHdeUG9Y>

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LECTURE 11 – Decision Making and Intervention

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 11.

Vanity Fair Magazine article on EL FARO – Available under BLACKBOARD/ Resources/Case Studies.

CLASSROOM TOPIC: Decision Making – Intervention

Case Studies:

- EL FARO

LECTURE 12 – Error Types, Error Chains, Error Trapping

READING STUDY ASSIGNMENTS ***PRIOR TO*** LECTURE 12:

- Text 1 – BRM for Small Ships – Parrott: Chapter 14 Pages 145-159

CLASSROOM TOPIC: Error Types, Chains and Trapping

CASE STUDY:

- EXXON VALDEZ

CASE STUDY REVIEW:

- USS EISENHOWER
- ROYAL MAJESTY
- EMPRESS of the NORTH
- BLACKHORN and CAPRICORN

NOTE: Changes may be made to the Lesson Plans for Lectures at any time during the semester. Monitor BLACKBOARD for notifications of any changes.