

**Master Syllabus**

**COURSE**:     IMTV 2130 Marine Electronic Navigation and Radar

**CRN:**

**CREDIT HOURS: (Lecture/Lab/Total):** 3/0/3

**CONTACT HOURS: (Lecture/Lab/Total):** 45/0/45

**INSTRUCTOR INFORMATION**

**Name:**

**Email:**

**Phone:**

**Office:**

**Office Hours:**

**Class Location:**

**COURSE DESCRIPTION:**  This is an introductory course into marine electronic navigation.  Topics of discussion include the Global Navigation Satellite Systems (GNSS), Radar, Automatic Radar Plotting Aids (ARPA), Fathometers, Satellite Navigation, Global Maritime Distress and Safety Systems (GMDSS), and Electronic Chart Display Information Services (ECDIS).  The focus of this course is on various types of radar, radar theory, navigation, and collision avoidance.  This course includes the use of a technical lab providing a hands-on approach in the operation and use of marine radars and other electronic equipment pertinent to safe navigation and watch-standing by shipboard personnel.

**PREREQUISITES:** None

**LEARNING OUTCOMES:  Upon completion of this course, the student will be able to:**

* identify items of importance in Rule 19 "Conduct of Vessels in Restricted Visibility";
* identify various radio frequencies, LF, MF, HF, VHF, UHF, etc.;
* describe different satellite (transit and geosynchronous orbiting) navigation systems;
* demonstrate understanding of U.S. Global Positioning Systems, Differential Global Positioning Systems, Russian Global Orbiting Navigation Satellite System (GLONASS), Europe’s Galileo system, and India’s Indian Regional Navigation Satellite System;
* describe the history and development of RADAR;
* describe, identify, and explain the various facets of RADAR theory;
* describe how atmospheric and meteorological conditions affect the RADAR;
* demonstrate and explain various controls on a RADAR unit (i.e. power, gain, STC, FTC, brilliance, tuning, heading flasher, range rings, etc.);
* recognize and understand the functions of the three possible displays of RADAR (i.e. Head-up, Course-up, and North-up);
* explain Radio Detection and Ranging (RADAR) Theory, meteorological phenomena that affects RADAR;
* plot contacts on a RADAR transfer plotting sheet, single, double, and multiple contacts;
* plot and identify contacts that are Dead in the Water (DIW), on the same course and speed as Own Ship, on reciprocal course to Own Ship, and on same course but at a slower speed as Own Ship;
* manipulate a simulation RADAR unit to acquire a Relative Motion Line within 3 minutes;
* determine through plotting techniques different trajectory tracks various contacts will take once a course and/or speed change is made by Own Ship;
* determine through plotting techniques Closest Point of Approach (CPA) of all contacts;
* demonstrate the ability to use parallel indexing lines to maintain safe distances from shorelines or other vessels.
* Any other area (s) (i.e. current events) that the instructor deems necessary.

**ASSESSMENT MEASURES:** To achieve learning outcomes, the student will**:**

* participate in a positive manner by listening to lectures and/or videos;
* complete assigned class work and assignments in a timely manner; and
* contribute positively as a team member on assignments requiring teamwork.

**TEXTBOOKS:**

Department of Homeland Security, United States Coast Guard.  (2014).  *Navigation Rules and*

*Regulations Handbook: August 2014 Edition: Containing International and Inland Rules of the Road and Their Respective Annexes. Pertinent Regulations for Waterway Users.* Baltimore Maryland: Clipper City Publishing.

Monahan, Kevin.  (2008).   *The RADAR Book:  Effective Navigation and Collision*

*Avoidance*.  Anacortes Washington: FineEdge.com LLC.

\*Note: Textbooks will be loaned to you at the beginning of the semester.  Take care of these books as they will be reused in subsequent classes.  These textbooks are to be turned back into Northshore Technical Community College at the conclusion of the semester.  Fees will be assessed for textbooks that are not turned in or are damaged and deemed unusable for future classes.

**SUPPLIES AND EQUIPMENT:** Paper, pens, pencils, binder, roller plotter, divider.

**ATTENDANCE POLICY:** It is the student’s responsibility to maintain regular contact with instructors. Class attendance is the responsibility of the student. All students must be officially enrolled in any course that they attend. It is expected that students attend all classes and be on time. If an absence occurs, it is the responsibility of the student for making up examinations, obtaining lecture notes, and otherwise compensating for what may have been missed. Students who stop attending class and do not officially drop, withdraw, or resign from the college may receive a grade of “F” for all coursework missed. Absences affect performance in this course and do not reflect well on participation. No student may substitute the attendance of another student. **Online students must be actively participating in online courses to be considered making progress.** **Hybrid students must attend face-to-face meetings as well as complete online assignments.**

Students should frequently check Canvas (Learning Management System) for notifications and updates to the course. Students are expected to use the online resources provided by NTCC to:

1. Track course assignments and progress

2. Discuss topics and issues with fellow students

3. Turn in assignments, quizzes, and tests

4. Check for any updates, changes or alterations to the course

5. Access all course materials to include presentations, assignments, quizzes, and tests.

**GRADING REQUIREMENTS:**

Assignments                                                            =   20%

Midterm Exam                                                        =    20%

Attendance                                    =    15%

Participation = 15%

Final Exam                                                             =   30%

Total                                                                        = 100%

**GRADING SCALE:**

90% - 100%A

80% - 89%        B

70% - 79%        C

60% - 69%        D

0%   - 59%        F

**ACADEMIC INTEGRITY AND CONDUCT:** Students are expected to maintain the highest standards of academic integrity. Behavior that violates these standards is not acceptable. Plagiarism, cheating, and other forms of academic dishonesty are prohibited and are subject to disciplinary actions established in the Student Code of Conduct. The instructor reserves the right to assign a grade of “F” on any type of assignment or examination based on evidence that the student has violated the Student Code of Conduct.

**STUDENT BEHAVIOR/CLASSROOM DECORUM:** Students are encouraged to discuss, inquire, and express their thoughts and views during class. Classroom behavior that interferes with either the instructor’s ability to conduct the class or the ability of students to benefit from the instruction is not acceptable. Students are required to turn off all cell phones or similar electronic devices (or place them on silent mode) before coming into the classroom. The instructor reserves the right to assign no credit for work on that day if a student talks or texts on a cell phone or similar electronic device. The classroom is not a place for children, and students are not to bring their family members into the classroom.

**DISABILITY CODE:** If you are a qualified student with a disability seeking accommodations under the Americans with Disabilities Act, you are required to self-identify with the Student Affairs. No accommodations are granted without documentation authorized from Student Affairs.

**WITHDRAWAL POLICY:** The last day to withdraw from a course or resign from the college is **\_\_\_\_\_\_\_\_\_\_\_\_\_**. If you intend to withdraw from the course or resign from the college, you must initiate the action by logging into LoLA. The instructor will not withdraw you automatically.

**COMMUNICATION POLICY:** My.NorthshoreCollege.Edu is the official student email communication within Northshore Technical Community College. Therefore, the College has the right to send communications to students via their College email address and the right to expect that those communications will be received and read in a timely fashion. Every student is assigned a My.NorthshoreCollege.Edu. Students can redirect their College email address to an outside email provider. However, the College is not responsible for handling outside email providers, and redirecting their College email address does not absolve a student from their responsibilities associated with communication sent to their official College email address.

**COPYRIGHT POLICY:** Unless a student has obtained permission from the copyright holder, it is a violation of Copyright Law to print or photocopy chapters from a textbook that the student did not purchase. If the course requires the use of an electronic textbook, a student must look for a statement that allows for photocopying and/or printing of the eTextbook.

**NETIQUETTE POLICY:** This term is used to describe accepted, proper behavior on the Internet. Remember the following when communicating online (messages, discussion board, etc.):

* Never post profanity, racist, or sexist messages
* Be respectful of fellow students and instructors
* Never insult any person or their message content
* Never plagiarize or publish intellectual property
* Do not use text messaging abbreviations or slang
* Do not type in all CAPS (this is considered online yelling)

**PROGRAM DRESS CODE:** Your appearance in the program must model industry expectations on a daily basis. The entire dress code expectations will be covered during safety training. The following items are minimum requirements for this course:

* Safety shoes with oil-resistant soles
* Long pants (no shorts)
* No loose fitting clothing
* No jewelry
* No long hair exposed
* Safety glasses