COURSE: **ELECTRONICS LAB** **EN-3212L** Spring **2025**
INSTRUCTOR: **William Wood** (adjunct Prof) wwood@maritime.edu
OFFICE HOURS: In the lab on Sunday mornings from 830-10am (preparing for Tue labs)

TEXTBOOK

See Electronics Course Schedule;
EN3212L Lab Manual Spring 2025;
Helpful URL: https://www.electronics-tutorials.ws

CO-REQUISITE

CO-REQUISITIE: Electronics (EN3212)

COURSE DESCRIPTION

This laboratory supports the Electronics course (EN-3212). Participants learn to use electronic instruments by taking measurements on analog and digital circuits constructed during the lab period. The measurements are then used to verify the analytical relationships developed in the classroom.

OBJECTIVES

- Identify basic components used for analog signals and conditioning.
- Read basic circuit diagrams
- Build circuits that demonstrate fundamental electronics concepts using a breadboard
- Build basic filters
- Use solid-state devices for amplification, switching, and timing applications
- Build circuits that demonstrate logic gates

GRADING

Grades are based on both team assignments and individual work as shown below. **DO NOT miss lab - There are NO make-up labs. For each lab missed, there is a 15% deduction from the final grade –OUCH! DO NOT** assume you can come to a different section. **Late work is NOT accepted.**

Participation	10%
Quizzes	30%
Homework and Assignments	30%
Laboratory Exam	30%
Total Grade	**100%**

Homework – weekly assignments. Due back in Blackboard **NO LATER THAN FRIDAY at MIDNIGHT**. Automatic 25% off for late submissions. No late submissions accepted after the due-date of the next lab homework.

Lab 1: Breadboarding, DVM, Resistors, Potentiometers, Capacitors, Soldering
Lab 2: Power Supplies, Diodes, Oscilloscopes, Switches, Relays
Lab 3: Relays and the Master Control Relay
Lab 4: Voltage Divider, Wheatstone Bridge
Lab 5: Capacitors, Rectifiers, and Transient Signals
Lab 6: 555 Timer in Astable Mode
Lab 7: Filters: High-Pass, Lo-Pass, Band-Pass
Lab 8: Transistors – Switches and Amplification
Lab 9: Operational Amplifiers - Inverting and Non-inverting Amplifiers
Lab 10: Operational Amplifiers: Inverting Summers
Lab 11: Logic Gates
Lab 12: Exam

DISRUPTIONS (CELL PHONES, EXCESSIVE TALKING, DISTRACTING OTHERS, ETC.)

One of our mission objectives, here at MMA, is to provide students with an environment that facilitates learning. Any behavior that, in your instructor's determination, detracts from their ability to teach effectively or constitutes a distraction for other students may result in your dismissal from class.

Cell phones must be silenced before class and should not be visible during lab. If your cell phone rings, beeps, vibrates, etc. or you use your phone for anything (including text messaging) at any time during class, it may be confiscated and delivered to the Academic Dean and you may be dismissed from class.

If you are dismissed from class, your instructor reserves the right to treat that dismissal as an unexcused absence and your grade will be adjusted appropriately.

CALCULATORS

Only calculators approved by the NCEES (National Council of Examiners for Engineering and Surveying) permitted. See: http://ncees.org/Exams/Exam-day_policies/Calculator_policy.php for details. Calculators may not be permitted in all exams.

DISABILITIES

Students with documented disabilities will be afforded appropriate accommodations. Students entitled to additional time on exams must make arrangements with me in advance. Students who believe they may need accommodations in this class are required to contact the Director of Disability Compliance *within the first two weeks of class*.