Fall 2021

ENME 350 001
Electronics and Instrumentation I

Credits: 3 semester-hours
Prerequisite: PHYS 262 - *Principles of Physics II: Thermodynamics, Electricity and Magnetism*, and MATH 237 - *Calculus II.* A 'C' or better in both is required.
Co-requisite: PHYS 263 - *Principles of Physics III: Sound & Light*, and MATH 237 - *Calculus II.* A 'C' or better is required.

Bookstore: Required: *Principles and Applications of Electrical Engineering*, by Rizzoni & Kearns, 6th ed., McGraw-Hill 2016 (ISBN: 978-0073529592), scientific calculator, transparent ruler, protractor.

Room: CSC 233
Times: Wednesday and Friday, 10:00-11:50am

Instructor: John J. Lynch, Ph.D.
Office: CSC 123A
Telephone: 301-687-3166
e-Mail: jjlynch@frostburg.edu
Office Hours: *Mondays 2-3pm and 4-5pm, Tuesdays 1-2pm, Wednesdays 4-5pm, Fridays 2-3pm, and by appointment.*

Secretary: Crystal Frantz: CSC 123, 301-687-4298, cafrantz@frostburg.edu

Catalog Description

Modern instrumentation. Basic circuit design, standard microelectronic circuits. Digital data acquisition and control. Signal conditioning. Instrumentation interfacing. Designing and testing of analog circuits. Laboratory experiments. Two hrs. lecture and two hrs. lab per week.

Course Objective

To provide engineering students a background in electronics.

Topics Covered

- Fundamentals of electric circuits
- Resistive network analysis
- AC network analysis
- Transient analysis
- Frequency response and system concepts
- AC power

Attendance

Attendance is essential to keep up-to-date with coursework. Be familiar with University Regulations. Major medical incidents and emergencies that affect any student's participation in the course need to be reported to the instructor as soon as possible. Extended medical absences will require documentation. If you miss a class, you will be responsible for all material covered in class and in the homework assignments.

Homework Assignments

Homework assignments will be e-mailed to students about a week before they are due. Homework must be submitted on the day they are due. Students are encouraged to visit, phone, or e-mail the instructor with any questions regarding the homework assignments. Students are also encouraged to discuss the homework assignments with other students. Groups of two or three students may submit one assignment. The two lowest homework scores will be discarded. Homework solutions will be available online.

Online Quizzes

Online conceptual quizzes for each chapter are available on Canvas under Assignments. Students are required to make at least one attempt at each quiz. It is recommended that they take each quiz after reading a chapter, one more time before the next exam and a third time just before the final exam. Online quizzes may be taken with the help of other students. A total of four attempts are allowed.

Labs

Every other week students will engage in a lab activity. Multisim is required for some of them.

Exams

There will be three 50-minute exams and a comprehensive final exam. All exams are **closed-book**. A scientific pocket calculator will be needed. Students may use both sides of a 4x6 index card on which they have jotted down formulas, laws, definitions, constants, etc. Only one index card is allowed on any of the 50-minute exams. All three index cards are allowed on the final exam. Students may not share index cards or calculators. Students may not use cell phones, tablets, or similar devices.

Grading

The course grade will be determined using the following weights.

Homework	24%
Online Quizzes	10%
Labs	12%
Exams	54%

The lowest exam score will be dropped. The remaining three will count 18% each.

Grading Scale

The grading scale used in the course will be as follows.

A	85 – 100 %
B	72½ – 85 %
C	60 – 72½ %
D	47½ – 60 %
F	0 – 47½ %

Course-related Policies

Please reference the following websites:

www.frostburg.edu/fsu/assets/File/Administration/policies/policystatements.pdf

www.ugst.umd.edu/courserelatedpolicies.html#collapseSeven