

CUMBERLAND COUNTY COLLEGE

Course: PI 124 Fundamental of Physics II

Credits: 4

Prerequisites: MA 094

Description:

This is an algebra based Physics course. Fundamentals of Physics II provides the students exposure to the laws of electricity, magnetism, geometrical and wave optics, power generation and consumption as well as electrostatics. The course satisfies the physics requirements for many disciplines in science including but not limited to pre-medicine, physical therapy and biomedical research. PI-123 does not have to be taken before this course.

Learning Outcomes:

Upon successful completion of this course, students will be able to:

- Explain the interactions among electrostatic charges
- Apply Coulomb's law
- Understand and analyze electric field
- Explain the electric potential and electric potential energy
- Use Ohm's law to analyze an electrical circuit
- Apply principles behind AC circuits to explain the resonance phenomenon
- Prepare a concise laboratory report
- Draw a meaningful conclusion from experimental data
- Understand optical components and their applications
- Analyze a simple optical system
- Apply algebra to solve problems in electricity, magnetism, and optics

Topical Outline:

- Electrostatics
- Electric field and potential
- Electric current and resistance
- Ohm's law
- DC circuits
- Magnetic field
- Faraday's law and Induction
- AC circuits
- Geometric optics
- Wave optics

Text:

Physics by Cutnell & Johnson. Wiley Publishing

Student Assessment:

Assessment is based on Mid-semester examinations, Final examination, weekly quizzes, Laboratory reports, and workshop assignments as follows

The three hour-exams	45%
Weekly quizzes	10%
Final exam	25%
Laboratory Reports	15%
Workshop Assignments	5%

Academic Integrity:

Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation.

Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense.

As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

Tutoring & Project Assist:

If you are having difficulty with work in this class tutoring is available through the Center for Academic & Student Success. If you think that you might have a learning disability, contact Project Assist at 856.691.8600 x 1282 for information on assistance that can be provided to eligible students.

Before Withdrawing From This Course:

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) BEFORE withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA, which can limit or eliminate future financial aid in addition to causing academic suspension.