

# PHY 222 - PROB. & PRINC. OF PHYSICS II

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- Learn that they CAN understand seemingly complex physical concepts.
- Learn that they CAN problem-solve beyond memorized algorithms.

## Course Description

This course is a continuation of PHY 221. Topics include thermodynamics, waves, electricity, electric circuits, magnetism and optics. The laboratory covers the preceding topics in parallel with the lecture whenever possible. The development of conceptual understanding and problem solving skills is emphasized. Group 1 lab course. Group 1 course.

## Credit Hours

4

## Contact Hours

5

## Lecture Hours

3

## Required Prerequisites

PHY 221, PHY 221L, PHY 221R, MTH 141

## Corequisites

PHY 222L, PHY 222R

## Recommended Prerequisites or Skills

## Competencies

ENG 111; MTH 142 may be taken concurrently

## General Education Outcomes supported by this course

Quantitative Reasoning

## Course Learning Outcomes

### Knowledge:

- Define: physical quantities, physical laws, and physical process.

### Application:

- Determine relevant information.
- Determine which scientific and mathematical principles apply.
- Apply appropriate conceptual problem-solving strategies.
- Apply appropriate quantitative problem-solving strategies.

### Integration:

- Extend the learned physical concepts to novel problem-solving scenarios.

### Human Dimension:

- Interact with lab partners to achieve the given objectives.

### Caring - Civic Learning:

- Relate everyday observations of the natural world to physics concepts.
- Learn to care more deeply about the natural world.

### Learning How to Learn: