

# PH 213 : GENERAL PHYSICS III

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## Transcript title

General Physics III

## Credits

5

## Grading mode

Standard letter grades

## Total contact hours

70

## Lecture hours

40

## Lab hours

30

## Recommended preparation

MTH 253 and PH 212. Recommended to be taken with

## Course Description

Studies periodic behavior and topics from modern physics. Builds on concepts from previous terms and considers the physics of periodic motion, mechanical waves, wave interference, standing waves, acoustic waves, electromagnetic waves, geometric optics, diffractions and topics from special relativity to quantum mechanics. At all stages, applications of calculus to the solving of problems will be explored. Lab includes basic optical experiences along with a long-term project to affirm student abilities to integrate investigative lab concepts from previous terms. Required for engineering students and most students planning programs in the physical sciences. Should be taken in sequence.

## Course learning outcomes

1. Identify the symbols and constants which are used to express concepts and laws.
2. Describe qualitative meaning of concepts and laws verbally, mathematically, and in writing.
3. Recognize application of concepts and laws to settings in daily life.
4. Apply concepts and laws appropriately to settings drawn from daily life.
5. Use concepts and laws successfully to predict or extrapolate the behavior of an object or system of objects.
6. Use graphical techniques to construct an equivalent alternative representation of the behavior of an object or system of objects.
7. Reinforce understanding through written descriptions and explanations of solution process.
8. Use concepts and laws to estimate a reasonable expectation for some physical value based on defensible evaluation of the physical parameters in the setting.
9. Integrate all of the above to construct a personal understanding of the relationship of this physics to the world.

## General education/Related instruction lists

- Science Lab