Syllabus

PHY 119 College Physics II

General Information

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Department
Science and Technology

Course Prefix
PHY

Course Number
119

Course Title
College Physics II

Course Information

Credit Hours
4

Lecture Contact Hours
3

Lab Contact Hours
2

Other Contact Hours
1

Catalog Description
Second semester of a two-semester sequence suitable for transfer students seeking a laboratory science elective, life science students, and those in the engineering technologies. This course is at the mathematical level of intermediate algebra and trigonometry. Topics include oscillations and waves, electricity, magnetism, AC and DC circuits, optics, and limited topics in thermodynamics.

Key Assessment
This course does not contain a Key Assessment for any programs
Prerequisites
PHY 118 with a C or better and MAT 145 with a C or better or placement into Math Level 3 or higher

Co-requisites
None

Grading Scheme
Letter

First Year Experience/Capstone Designation
This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education
This course is designated as satisfying a requirement in the following SUNY Gen Ed category
   Natural Sciences

FLCC Values

Institutional Learning Outcomes Addressed by the Course
   Inquiry
   Perseverance
   Interconnectedness

Course Learning Outcomes

1. Apply basic physical principles to the study of oscillators, waves, electric charges, electrical circuits, magnetic systems, and thermodynamic systems.

2. Make and analyze measurements of physical phenomena, applying the proper use of units, dimensions, statistics, uncertainty, graphing, and calculation.

3. Apply arithmetic, algebraic, and geometric principles to the analysis of oscillators, waves, electric charges, electrical circuits, magnetic systems, and thermodynamic systems.

4. Students will connect physics to other sciences, the arts, and everyday life.

Program Affiliation
This course is not required as a core course in a program
Outline of Topics Covered

Oscillations
  Spring-Mass Systems
  Pendulums
  Driven Oscillators
  Resonance
  Damped Oscillators
Waves
  Transverse and Longitudinal Waves
  Wave Superposition
  Standing Waves on Strings
Sound
  Beats
  Doppler Effect
  Standing Waves in Tubes
Wave and Ray Optics
Electromagnetic Waves
Optical Instruments
Electric Charges, Forces, and Fields
  Common Electric Fields
Gauss’s Law
Electric Potential
Capacitors
Current and Resistance
Fundamentals of DC circuits
Magnetic Fields
  Ampere’s Law
Electromagnetic Induction
Fundamentals of AC circuits

Heat, Work, Calorimetry

Ideal Gases

Laws of Thermodynamics