

Print Date: 3/27/19
Course Objectives/Course Outline
Spokane Community College

Course Title: Engineering Physics III

Prefix and Course Number: PHYS 203

Course Learning Outcomes:

By the end of this course, a student should be able to:

- Identity and describe electromagnetic waves.
- Explain the properties of electromagnetic waves and their interactions with matter.
- Explain the principles of reflection, refraction, diffraction and interference of waves.
- Describe real and virtual images from mirrors and lenses
- Solve real-world problems involving optics, lenses, and mirrors.
- Apply the postulate of Relativity and Lorentz transformations
- Describe matters waves and explain the interaction between light and matter
- Explain Compton and photoelectric effects
- Describe properties of atoms and apply quantum- mechanical kinetics to atoms
- Explain the conduction of electricity in solids
- Describe the nucleus of an atom, nuclear radiations and the energy associated with the nucleus of an atom.
- Describe the general properties of elementary particles and cosmology
- Perform laboratory experiments, record observations, gather and analyze data, and present the results in written form.
- Relate laboratory observations and measurements to theoretical principles
- Be able to explain physics principles and how physics is used in technology and other aspects of everyday life.
- Make the connection between physics and other academic and vocational subjects.

Course Outline:

The course is organized in the following units and roughly follows the adopted textbook. A minimum of 8 laboratory activities will be carried out in addition to course work.

- Electromagnetic Waves
- Images
- Interference
- Diffraction
- Relativity
- Photons and Matter Waves
- Atoms
- Conduction of electricity in Solids
- Nuclear Physics and Energy from the Nucleus
- Quarks, Leptons and Big Bang