

# PHYS& 221 : Engineering Physics I with Lab

**Credits** 5

**Quarter Offered** Fall

Basic principles of mechanics and experiments in mechanics for physical science and engineering majors. One year high school physics is recommended. This class may include students from multiple sections. (Natural Sciences with Lab, Elective)

**Prerequisites**

Eligibility for [ENGL& 101](#); [MATH& 151](#) or taken concurrently

**Course Outcomes**

Describe, explain, and use concepts of one-dimensional motion to solve 1-d motion problems.

Describe, explain, and use concepts of momentum and energy (and their associated conservation laws), along with Galilean relativity in solving complex motion problems, including collisions between objects.

Describe, explain, and use the concept of forces in explaining everyday phenomena, as well as solving dynamics problems, including work-related problems.

Describe and explain movement in a plane versus rotational motion and be able to translate linear kinematics and dynamics to angular kinematics and dynamics to solve problems in an accelerated reference frame.

Design, carry out, and interpret experiments in the laboratory to answer mechanics-related questions during lab, as well on assessments.