



PHY 321 Engineering Dynamics

Course Description

This is the intermediate level course in dynamics that employs various problem solving methods and the laws of mechanics to analyze and obtain solutions to fundamental problems in engineering and physics (same as EGR 321). This is a four semester hour course that meets three hours of lecture and three hours of lab per week.

Course Prerequisite

Engineering Statics (PHY/EGR 250)

Specific Course Requirements

Textbook Requirements

See current semester textbook list at <http://www.physics.sfasu.edu/docs/books.pdf>

Course Objectives

The main objective of this course in mechanics is to develop in the engineering/physics student the ability to analyze any problem in a simple and logical manner and to apply to its solution a few, well-understood, basic principles. A cooperative problem solving approach is taken where students develop time management skills and teaming skills.

Student Learning Outcomes

By the end of the course, a successful student will be able to:

- Demonstrate an advanced level knowledge and understanding of the laws of classical mechanics to include representing these laws in mathematical expressions with appropriate units for physical quantities.
- Show quantitative and analytical skills necessary to solving physics/engineering problems.
- Exhibit effective written and oral communication skills in presentations of physics/engineering problems to one's peers.
- Work effectively as a member of a group.

Course Content

- Kinematics - Description of Rectilinear and Curvilinear Motions
- Kinetics - Newton's Laws of Motion, Momentum and Linear Momentum
- Conservation Principles - Momentum, Angular Momentum, and Energy
- Rigid Bodies - Kinematics, Kinetics, Energy and Momentum Methods, Plane Motion, and Three Dimensional Motion

Course Assessment

The course assessment may use any or all of the following evaluation tools: exam scores, classroom participation, homework average, quizzes, and team projects.