Stephen F. Austin
STATE UNIVERSITY

PHY 531
Classical Mechanics

Course Description

This course examines classical mechanics using Lagrange's and Hamilton's equations of motion applied to particles, system of particles and rigid bodies. This course carries four semester hours of credit.

Course Prerequisites

- Graduate standing
- Intermediate mechanics

Specific Course Requirements

Textbook Requirements

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

Course Objectives

Through this course the student will develop problem solving techniques using Lagrange's and Hamilton's equations of motion for systems with and without equations of constraint.

Student Learning Outcomes

By the end of the course, a successful student will be able to derive Lagrange's equations from D'Alembert's and Hamilton's principles and apply these equations to holonomic and nonholonomic systems, including the two-body central force problem.

Course Content

- Variational Principles and Lagrange's Equations
- The Two-Body Central Force Problem
- The Kinematics of Rigid Body Motion
- Hamilton's Equations of 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.