Physics 329: Classical Mechanics

Overview

PHYS329 is an intermediate classical mechanics course. This provides what is often the first opportunity for complex problem solving making use of advanced undergraduate level mathematical methods. The physics content addresses methods of classical mechanics with an emphasis on reference frame and astrophysical contexts, and concludes with a brief treatment of Lagrangian and Hamiltonian mechanics.

Evaluation

Weekly or twice-weekly homework, midterm exam, final exam.

Texts

1. Classical Mechanics, Kibble and Berkshire

Topics by week

Week 1: Linear Motion
Week 2: Energy and Angular Momentum
Week 3: Central Conservative Forces
Week 4: Rotating Frames
Week 5: Potential Theory
Week 6: The Two-Body Problem
Week 7: Many-Body Systems
Week 8: Rigid Bodies
Week 9: Lagrangian and Hamiltonian Mechanics
Week 10: Small Oscillations and Normal Modes