

PHYS 231C : Physics I (Calculus-Based)

This is a study of classical mechanics. Topics include linear and rotational motion, forces, momentum, energy, gravitation, and oscillations. A graphing calculator will be required.

Credits 4

Lab/Practicum/Clinical Hours 3

Lecture Hours 3

Co-Requisite Courses

MATH 205C

Learning Outcomes

- State, interpret, and apply the definitions of physical quantities related to kinematics, dynamics, momentum, energy, rotational motion, gravitation, and oscillations.
- Set up and solve problems, including word problems, in classical mechanics analytically using algebra, trigonometry, and calculus.
- Solve problems in classical mechanics using numerical methods including numerical extremization problems.
- Solve problems in classical mechanics using graphical methods including the use of motion diagrams, position, velocity, and acceleration vs time graphs, graphical vector addition, free body diagrams, and interaction diagrams.
- Set up laboratory equipment safely and efficiently, plan and carry out experimental procedures, identify and reduce sources of error, analyze and interpret data, propagate error, and summarize findings in a formal laboratory report.