

- **Course Number and Title:** PHYS 1310G. Calculus-Based Physics I
- **Catalog Description:** A calculus level treatment of classical mechanics and waves, which is concerned with the physical motion concepts, forces, energy concepts, momentum, rotational motion, angular momentum, gravity, and static equilibrium.
- **Credit Hours:** 3 Credits (3)
- **Prerequisite(s) / Corequisite(s):** Prerequisite(s): MATH 1511G or ENGR 190
Corequisite(s): None
- **Required:** Required for BSME and BSAE Degrees
- **Course Availability:** Fall and Spring Semesters (+ Summer)
- **Instructor (Usual):** Dr. Joni Marie Clark Cunningham
- **Textbook:** Young, H., and Freedman, R., University Physics with Modern Physics (ISBN-10: 0135159555 or ISBN-13: 978-0135159552), Pearson, 15th Ed., 2019
- **Course Learning Objectives:** After completing this course, a student should be able to:
 - 1) Describe the relationships among position, velocity, and acceleration as functions of time.
 - 2) Use the equations of kinematics to describe motion under constant acceleration.
 - 3) Analyze linear motion using Newton's laws, force, and linear momentum.
 - 4) Analyze rotational motion using torque and angular momentum.
 - 5) Analyze motion using work and energy.
- **Topics Covered:** Classical mechanics, forces, energy concepts, momentum, rotational momentum, angular momentum, and equilibrium