

## ABET Course Syllabus for PHYS 182: General Physics II

1. Course number and name: PHYS 182: General Physics II with Laboratory
2. Credits and contact hours: 5 credit hours, 5 hours per week
3. Instructor's Name: Darci Snowden
4. Textbook, title, author, and year:
  - Knight, *Physics for Scientists and Engineers*, 3<sup>rd</sup> Edition
- a. Other supplemental materials:
  - Mastering Physics Account
5. Specific course information:
  - a. Brief description of the content of the course (catalog description): An integrated experimental and analytical investigation of topics in rotational dynamics, wave mechanics, and conservation principles. It includes the analysis of physical systems using algebra, trigonometry, and calculus along with inquiry-based activities and experimental investigation.
  - b. Pre-requisites: PHYS 181 and MATH 173 OR PHYS 181 and AP Calc AB or BC score of 3 or higher. Corequisite: MATH 173 or concurrent enrollment in a high school course equivalent to AP calculus AB or BC.
  - c. Required, elective, or selected elective (as per Table 5-1) course in the program: Selective Elective
6. Specific goals for the course:

This is a calculus-based course in general physics

  - a. Specific outcomes of instruction:
    - Correctly describe and explain key physics topics such as linear & angular momentum, energy, torque, simple harmonic motion, and oscillations as well as key components of those main concepts.
    - Solve problems in kinematics and dynamics using the appropriate physical principles and techniques.
    - Demonstrate enhanced quantitative reasoning skills and mathematical analysis skills.
    - Properly analyze and interpret data and experimental uncertainty in order to make meaningful comparisons between experimental measurements or observation and theory.
  - b. Criterion 3 student outcomes addressed by course:
    - 3 (1)

7. Brief list of topics covered:

- Newton's Laws
- The relationship between force, work and energy
- Conservation of energy and momentum
- Rotational motion
- Wave motion