# SLO Presentation

PHYS
Date: 09/11/2019

## SCIENCE, ENGINEERING & MATH

PHYS

### Physics--ADT

- Students analyze a problem or experimental data in terms of related physical concepts
- Students apply units and dimensions in physics problems
- Students present real-world experimental data, including significant figures and units, in a correct format.
- Students solve physical non-analytic problems using numerical methods.
- Students use mathematical and problem solving techniques to solve physics problems

### CSLO

#### PHYS50 - Principles of Technology

- Students demonstrate an understanding of physic principles applied to electricity.
- Students demonstrate an understanding of physic principles applied to fluids.
- Students demonstrate an understanding of physic principles applied to mechanics.

#### PHYS100 - Elementary Physics

- Students critically examine and analyze mechanics related physical phenomena. This includes the mechanics of particles and extended rigid bodies.
- Students solve physics problems that are appropriate for Physics 100.
- Students communicate effectively in a technical sense.
- Students use physics laboratory equipment that is appropriate to this course.

#### PHYS101 - General Physics

- Students will analyze a physical situation using concepts of work and energy
- Students will analyze a physical situation with multiple constant forces acting on a point mass using Newtonian mechanics
- Students will analyze real-world experimental data, including appropriate use of units and significant figures
- Students will analyze static and dynamic extended systems using the concepts of torque and angular acceleration
- Students will relate the results of experimental data to the physical concepts discussed in the lecture portion of the class
- Students will use knowledge of heat transfer and thermal properties to solve related problems
- Students will utilize properties of waves and oscillatory motion to understand and solve related problems about wave motion and sound.
- Students will predict the future trajectory of an object in two dimensions with uniform acceleration

#### PHYS102 - General Physics

- A. Analyze real-world experimental data, including appropriate use of units and significant figures
- B. Relate the results of experimental data to the physical concepts discussed in the lecture portion of the class
- C. Demonstrate an understanding of units and dimensions presented in PHYS 102
- D. Solve problems in electromagnetism
- E. Solve problems in optics
- F. Solve problems in modern physics

#### PHYS201 - Engineering Physics

- Students will analyze a physical situation with multiple forces acting on a point mass or extended object using concepts of work and energy
- Students will solve advanced problems in Gravity
- Students will solve advanced problems in Fluid dynamics

- Students will solve these problems numerically as well as algebraically
- Students will analyze real-world experimental data, including appropriate use of error propagation, units and significant figures.
- Students will relate the results of experimental data to the physical concepts discussed in the lecture portion of the class
- Students will understand units and dimensions
- Students will predict the future trajectory of an object moving in two dimensions with uniform acceleration
- Students will analyze a physical situation with multiple constant forces acting on a point mass using Newtonian mechanics
- Students will solve advanced problems in Mechanics

### PHYS202 - Engineering Physics

- Students will analyze real-world experimental data, including appropriate use of units and significant figures
- Students will relate the results of experimental data to the physical concepts discussed in the lecture portion of the class
- Students will solve these problems numerically as well as algebraically
- Students will understand units and dimensions not presented in Physics 201
- Students will solve advanced problems in electromagnetic radiation
- Students will solve advanced problems in magnetism
- Students will solve advanced problems in electrodynamics

### PHYS203 - Engineering Physics

- Students will analyze real-world experimental data, including appropriate use of units and significant figures.
- Students will relate the results of experimental data to the physical concepts discussed in the lecture portion of the class.
- Students understand units and dimensions not presented in Physics 201 or 202.
- Students solve advanced problems in Thermodynamics.
- Students solve advanced problems in Optics.
- Students solve advanced problems in Modern Physics.
- Students solve problems numerically as well as algerbraically.