

Instructional Objectives for PHYS 2210

The lectures sequentially follow the chapter outline of the textbook and each is associated with a CANVAS word file that gives an outline of the lecture and its objective.

The course is broken into four modules that end with a mid-term exam and a final exam. The mid-term exams cover material for that module, while the final is comprehensive over the entire semester.

Objective 1 – The student becomes familiar to the physics principles that govern our world.

Objective 2 – The student solves physics problems that are based on these physics principles.

Objective 3 – The student uses mathematics to quantitatively solve these problems.

Objective 4 -The student demonstrates application of three significant figures along with appropriate scientific units.

Module 1 covers chapters 1-5 and the topics of Motion (kinematics), Forces (Newton's 3 laws of motion), and the usefulness of the Free-Body Diagram (FBD). An equation sheet is provided.

Module 2 covers chapters 6-11 and the topics of Momentum, Energy and their conservation. Specific additional material on the law of gravitation (Newton's Law) and application of Motion, Forces, Momentum and Energy to rotating objects are covered. A second equation sheet is provided.

Module 3 covers chapters 12-15 and the topics of Statics (Newton's 3rd Law), Oscillations (Waves) and Fluids (concept of Pressure). A third equation sheet is provided.

Module 4 covers chapters 16-19 and the topics of Temperature, Heat (heat engines), and the first two laws of Thermodynamics. A fourth equation sheet is provided.

Assessment of how well the Instructional Objectives have been met is through the formal Homework, Quiz and Exam grading. In addition, during the first week a pre-test and during the final week a post-test is offered. These are optional, but for each test that a student takes, a bonus 1% is added to the student's final grade. The pre- and post-test compares the classes overall knowledge of the course material before the class and again at the end of the class.