

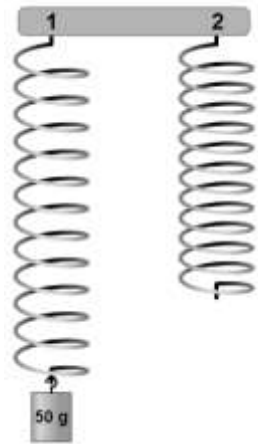


PANAMA

### Manual to Lab 3: PHY2048C.

Florida State University – Republic of Panama

### Mass and Spring



#### About labs in this class

The labs in this class will have general instructions, and many things need to be figured out by the students. I will be answering any specific questions the students may have without completely giving away the key to the puzzle.

**Answer the questions and record your measurements in your lab notebook and then submit the notebook at the end of the activity.**

#### About this lab

In this lab you will use a spring to determine the mass of the mystery weights you have been provided with. You will do this by measuring the elastic constant of the spring. You are provided with all the tools provided for this experiment. You will need the stopwatch of your phone.

**Activity 1.** measure how the equilibrium height changes when different masses are hung from the spring.

**Question 1.** Draw a free-body diagram of the pendulum at equilibrium.

**Activity 2.** Determine the elastic constant of one of the springs with at least a 10% error bar. Using more masses will narrow down the spread of the obtained value.

**Activity 3.** Measure the mystery mass with a minimum of a 10% error. You will need to use multiple springs to make multiple measurements and reduce the error.