**Miami-Dade Community College**
**PHY2049L**

Course Description: The physics labs are separate 1 credit courses designed to be taken in conjunction with a physics lecture. A separate experiment is performed each week with topics chosen to correspond with the material being studied in the lecture. Each experiment is designed to be completed in about 2 contact hours.

Corequisites: PHY2049

Course Competencies:

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| Competency 1: | The student will demonstrate an ability to make measurements in the laboratory by: |
| | a. using various instruments to make measurements which relate to the functioning of simple physical systems in the laboratory;<br>b. organizing and recording instrument readings onto a data sheet for each experiment in the lab;<br>c. estimating and recording the possible measuring errors with selected measurements in the lab. |
| Competency 2: | The Student will demonstrate knowledge of the rudiments of laboratory report writing by submitting completed written reports which reflect: |
| | a. an organized presentation of materials;<br>b. calculations correctly done;<br>c. graphs correctly plotted, with calculations of slopes and other parameters, when needed;<br>d. in selected labs, calculations which indicate how measuring errors can affect the results of an experiment;<br>e. interpretations of results which are consistent with reported observations. |
| Competency 3: | The Student will demonstrate an awareness of the importance of observations and measurements as the basis for scientific theory by: |
| | a. reporting his actual observations even if they conflict with his preconceptions;<br>b. when called for, proposing a formula or simple generalization which applies to the measurements made. |
| Competency 4: | The Student will become aware of the importance of the computer in the physics laboratory by: |
| | a. checking his data vs. those obtained in a computer simulation;<br>b. using the computer as an instrument (e.g. a fast timer, a speedometer);<br>c. in selected labs, observing the effects of the change of parameters on the experimental results in computer simulations. |