**PHYS 213L UNIVERSITY PHYSICS II LABORATORY**

**Department:** Physics

**Designation:** Required

**Catalog Data:** (0-1) 1 credit. Prerequisite or corequisite: PHYS 213. This laboratory accompanies PHYS 213. Introduction to physical phenomena and measurements. Recording and processing data, determining uncertainties, reporting results. The experiments supplement the work in PHYS 211 and PHYS 213

**Prerequisites:** Concurrent registration in or completion of PHYS-213..

**Textbook: *Suggested Ref.:*** *Experimentation, D. C. Baird, 3d Edition*

**Course Learning Outcomes:**

As a result of taking courses meeting this goal, students will:

1. Demonstrate the scientific method in a laboratory experience. **Assessment:** Students will be able to relate obtained experimental data with corresponding physics laws and formulas and critically evaluate these data with proper accuracy using appropriate formulas, and present scientifically sound laboratory reports.
2. Gather and critically evaluate data using scientific method. **Assessment:** Students will be able to critically evaluate data (given or obtained) with proper accuracy using appropriate laws and formulas of classical mechanics for scientifically sound presentation of laboratory reports.

**Topics:** physical phenomena and measurements, recording and processing data, determining uncertainties, and reporting results

**Class/Laboratory Schedule:** Varies

**Contribution to Criterion 5:** basic math and sciences

**Relationship of Course to ABET Outcomes (a) through (k)**

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| --- | --- | --- | --- |
|  | **Level of Emphasis** | | |
|  | Low | Medium | High |
| **ABET Outcome** |  |  |  |
| (a) an ability to apply knowledge of mathematics, science, and engineering |  |  | X |
| (b) an ability to design and conduct experiments, as well as to analyze and interpret data |  |  | X |
| (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability |  |  |  |
| (d) an ability to function on multidisciplinary teams |  |  |  |
| (e) an ability to identify, formulate, and solve engineering problems |  |  |  |
| (g) an ability to communicate effectively |  |  |  |
| (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context |  |  |  |
| (i) a recognition of the need for, and an ability to engage in life-long learning |  |  |  |
| (j) a knowledge of contemporary issues |  |  |  |
| (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice. |  | X |  |

**Prepared By:** Dr. Andre Petukhov, Department Head; June 1, 2010