Phy 2410L General Physics Laboratory

I. College/School  COSM
Department  Physics

II. Course Information
Course Title: General Physics Laboratory
Course Abbreviation and Number: PHY 2410L
Course Credit Hours: 1
Course Cross Listing(s) Abbreviation and Number:
Check ("x") all applicable:
General Education Course__X___ Writing Intensive Course_____ Service Learning Course_____
Laboratory Course__X___ Ohio TAG (Transfer Assurance Guide) Course _______
Ohio Transfer Module Course_____ Others (specify)_____

III. Course Registration
Prerequisites: MTH 2300
Corequisites: PHY 2410, MTH 2310
Restrictions: none
Other: none

IV. Student Learning Outcomes
What the physics lab is designed to do:
• Be a companion course to complement the lecture.
• Develop and reinforce conceptual understanding of physical phenomena.
• Provide hands-on experience with and enhance understanding of basic physical concepts.
• Provide the opportunity to practice scientific writing.
• Teach measurement skills using basic devices and instruments.
• Use the computer as a data collection device and a tool for data analysis.
• Develop the capability of choosing effective experimental procedures.
• Provide opportunities to use the methods of science to explore natural phenomena.
• Illustrate the power of mathematics in helping us to describe nature in relatively simple terms.

The General Education Element 6 student learning outcomes also apply:
  a. Understand the nature of scientific inquiry
  b. Critically apply knowledge of scientific theory and methods of inquiry to evaluate information from a variety of sources
  c. Distinguish between science and technology and recognize their roles in society
  d. Demonstrate an awareness of theoretical, practical, creative and cultural dimensions of scientific inquiry
  e. Discuss fundamental theories underlying modern science

V. Suggested Course Materials (required and recommended)
Online downloadable experimental writeups

VI. Suggested Method of Instruction
Laboratory
VII. Suggested Evaluation and Policy

LAB REPORTS

- See details of lab reports required for each experiment in the lab manual.
- Write the report so that it is self-contained. In other words anyone with a minimal background in physics should be able to read it by itself and understand what you did for that lab. The teaching assistant knows what you should have done, but practicing writing and communication skills is part of what this course is about.
- Although neatness and style are important, the content of the lab report is the main criterion for grading. Spend more time on content than looks. However, making it easy for the teaching assistant to read your report and to understand exactly what you did is a good idea. You must be able to communicate the procedures used and the results of your experiment in a coherent, organized way to receive a good grade.
- **Have the teaching assistant sign and date your unfinished report BEFORE leaving the lab each week, and make sure that the signed sheets are submitted as part of your final report.**

Lab report grades: Each lab report grade will be based on a 50 point basis which will entail points distributed for answers to prequestions, post questions, discussion, calculation and possibly homework. The actual point distributions for individual labs will be highlighted in the Laboratory Manual. There will be 12 lab reports for a total of 600 total points for the semester.

VIII. Suggested Grading Policy

Lab grade will be determined on percentage of total points for the semester by the following scale;

A >90%
B >80%
C >65%
D > 55%

IX. Suggested Assignments and Course Outline

<table>
<thead>
<tr>
<th>Week 1</th>
<th>NO Lab</th>
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<tbody>
<tr>
<td>Week 2</td>
<td>Exp. 1 (Equipotential Plotting)</td>
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<tr>
<td>Week 3</td>
<td>Exp. 2 (Current in Simple DC Circuits)</td>
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<td>Week 4</td>
<td>Exp. 3 (Simple DC Circuits and Ohm’s Law)</td>
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<td>Week 5</td>
<td>Exp. 4 (Kirchoff’s Circuit Rules)</td>
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<tr>
<td>Week 6</td>
<td>Exp. 5 (Introduction to Capacitors and RC Circuits)</td>
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<td>Week 7</td>
<td>Exp. 6 (Introduction to AC Currents and Voltages)</td>
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<td>Week 8</td>
<td>Exp. 7 (Introduction to AC Filters and Resonance)</td>
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<td>Week 9</td>
<td>Exp. 8 (Introduction to Light)</td>
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<td>Week 10</td>
<td>Exp. 9 (Reflection and Refraction of Light)</td>
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<td>Week 11</td>
<td>Exp. 10 (Geometrical Optics – Mirrors/Lenses)</td>
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<td>Week 12</td>
<td>Exp. 11 (Polarized Light )</td>
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<tr>
<td>Week 13</td>
<td>Exp. 12 (Waves of Light: Interference)</td>
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X. Other Information
   none

This is a sample course syllabus guideline. Course materials, method of instruction, evaluation and policy, grading policy, assignments, and other course matters can differ by specific course sections and individual professors. Additional information can be obtained by contacting the appropriate college and department.

Approved:
Undergraduate Curriculum and Academic Policy Committee ________________________
Faculty Senate ____________________________________________________________