

Physics I&II Lab Syllabus

<http://www.fiu.edu/~sherwin/Course/2048-D.html>

General

This course is part of the two-semester sequence of the introductory undergraduate physics labs. Students in PHY2048L should have taken or be taking PHY2048 or PHY2053; and students in PHY2049L should have taken or be taking PHY2049 or PHY2054.

NOTE: If you drop the lecture class during the semester you are also taking the lab, you must drop the lab at the same time; There are no exceptions.

Physics is an experimental science and, while it is true that progress in physics has always relied on the contributions of theorist, the ultimate test of their theories takes place in the laboratory. The experiments in this course cover most of the topics you will encounter in your lecture course. They will be invaluable as an aid to deeper, conceptual understanding of those topics. Fundamental laws and relationships will be put to the test and (hopefully) verified. The meaning of an equation will be clarified so that it is not merely a collection of symbols. You will learn the use of several instruments, and how computers can be interfaced with physics experiments.

Lab Administrator:

Dr. Wang

Office: CP 216

Phone: 305-348-3064

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Office Hours: T,R: 1300-1500; W,F: 1330-1500

Class Meetings

- Classes meet once a week, they start either the first or the second week of each semester and normally end on the week prior to the final exam week.
- Makeup labs must be completed during the days the same lab is conducted by attending one of the other sections. (During regular semesters it is usually within the same week. During Summer Sessions, however, it's only within the window of either M-T or W-R) Permission from the instructor of the other section will only be granted if space is available. Check PANTHERSOFT system for class times and classrooms. And, it is student's responsibility to ensure that grade for makeup lab is transferred in a timely manner.

Grades

- Final (letter) grades will be based on the cumulative grades for the entire semester, with typical conversions of: > 90 (A), > 75 (B), > 60 (C), and > 45 (D). Less than 40% will be an F. Individual instructors will use their best judgement at their discretion to deviate from the above scale and to assign plus/minus grading option.
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Topics of Phys. I

Lab-00 Properties of Matter
Lab-01 Position and Velocity
Lab-02 Velocity and Acceleration
Lab-03 Newton's Second Law
Lab-04 Newton's Third Law
Lab-05 Free Body Diagram
Lab-06 Friction
Lab-07 Work and Energy
Lab-08 Momentum
Lab-09 Torque
Lab-10 Data/Graphical Analysis
Lab-11 Pressure
Lab-12 Ideal Gas Law

Topics of Phys. II

Lab-00 Uncertainties and Rubrics
Lab-01 Electric Interactions I
Lab-02 Electric Interactions II
Lab-03 Electric Interactions III
Lab-04 Electric Potential and Electric Currents
Lab-05 Electric Circuits and Resistance
Lab-06 RC circuits
Lab-07 Magnetism
Lab-08 Measuring Earth's Magnetic Field
Lab-09 Electromagnetic Induction
Lab-10 Waves
Lab-11 Reflection and Mirrors
Lab-12 Wave Optics