

200 Level Laboratories – Syllabus

Catalog Description

Experiments, exercises, and demonstrations to accompany PHYS 102.

Course Objectives

The objective of this course is for the student to learn:

- How to perform a careful experiment, estimate the uncertainties, and present the results graphically.
- How to use the graph as an analysis tool. In particular, methods for finding the straight line and the uncertainties best representing the data are emphasized.
- How to prepare technical material for oral presentation to a group of peers.
- The connections among the concepts taught in the lecture portion of the course, experiences from the 'real world', and the laboratory exercises.
- The specific physical principles involved for each of the labs performed.

Carolina Core Outcome

SCI - Students will be able to apply the principles and language of the natural sciences and associated technologies to historical and contemporary issues.

Eligibility

To be eligible for enrollment in PHYS 2xxL a student must satisfy one of the following three conditions:

1. Have completed the corresponding lecture course PHYS 2xx with a grade of C or better.
2. Be concurrently enrolled in the corresponding lecture course PHYS 2xx.
3. Have a written waiver from the Undergraduate Director for Physics and Astronomy.

Organization of the Course

Course Overview

For 20X/21X, the semester is divided into four blocks of time, called *cycles*. Each cycle is (for Summer Sessions one week long) three weeks long. During each cycle, two projects will be performed by each laboratory group. A lab group will work on their first project during day one. Before they leave each group will have their lab notebooks graded by the TA. This grade will serve as the preliminary lab report grade. The questions that are in the description will not be included in this grade. The second day of the cycle will be spent working on the project on the

opposite side of the lab room, same row, as the first project. A preliminary lab report grade will be given by the TA for this project just as in day one. Day three will be used for oral presentations. Each student will give one oral presentation during the semester. For each cycle, every student will turn in two preliminary reports and two final lab reports.

Required Text

Physical Sciences - Student Lab Notebook

By: Hayden-McNeil

ISBN: 9781533942111 (latest version)

Attendance and Grading

Grading

8 preliminary lab reports (each out of 12, up to 96 points).

8 final lab reports (each out of 30, up to 240 points).

1 oral presentation (50 points).

Class participation (up to 14 points).

Each absence will cost a penalty of -10 points plus loss of credit for missed work.

Total Points = 400

360-400 A

340-359 B+

320-339 B

300-319 C+

280-299 C

240-279 D

0-239 F

No grades will be dropped

Attendance

Attendance in the course is required. Consistent with the University "10% rule", the attendance policy for this course is as follows:

In the event that the laboratory instructor is not present at the lab room ten minutes after the beginning time of the lab period, students are expected to send a representative to inform the staff in the Physics departmental office, PSC room 404. Students should then wait in the lab room for a replacement instructor. Students in labs that begin after normal office hours should call 777-8105 and leave one message giving the lab course number and lab room number.

In the case of projects performed outside the laboratory room, the student must first report to the laboratory room.

Tardiness

Tardy arrival at class by more than 20 minutes will constitute an unexcused absence.

1. Tardy arrival by 20+ minutes will be automatically excused on the first occasion.
2. Tardy arrival by 20+ minutes on the second and subsequent occasions will constitute an unexcused absence.

Unexcused Absences

One unexcused absence from any class meeting will result in -10 points plus loss of credit for the work missed.

1. Two unexcused absences in the same cycle or more than two unexcused absences total will result in a failing grade, F, for the course.

Excused Absences

1. One or two excused absences will have no direct effect on your grade. You are still responsible for turning in your assignments on time, getting missed data from your partner and participating in one oral presentations. If you miss the oral presentation session on the day you are to present, see your instructor to discuss options for making up this deficiency.
2. More than two excused absences will result in an incomplete (I) for the course.

An absence will be considered excused only if you present to your instructor a copy of a valid excuse prior to the class meeting during which you will be absent. (Notification of excused absence after an absence will be accepted only in cases of demonstrable emergency; for example, you were rushed to the hospital and unable to notify the lab instructor.) **A valid excuse is a signed and dated letter from a person in authority (your doctor, minister, judge, policeman, dean, etc.) on official stationery stating why you are unable to attend class on the date in question. A note from a parent or friend is not acceptable.**

Excuses should be presented to the laboratory instructor prior to the class meeting during which you will be absent. **Excuses that are presented after an absence will be adjudicated by the course supervisor.**

Seating and Partner Assignments

Seating will be assigned on the first day of class, and your partner will be the student sitting at the same table as you. Thereafter, you will remain with your partner for the remainder of the cycle. The instructor will reassign seating and partners at the end of each cycle.

Project and Oral Presentation Assignments

Projects will be assigned based on the table where you are assigned to sit. The project assignment descriptions can be found on the 200 level PHYS lab webpage. The instructor will assign oral presentations at the appropriate time.

It is your responsibility to ensure that you have a current copy of the project description when you come to class.

Project descriptions may contain material not covered in lecture. Students are expected to use their text and other reference sources to prepare for this material.

Printed copies of the descriptions can be made at home on your own computer, in the library for \$0.10/page, on a computer in your college, and in some dormitories for free (you only need to supply the paper). The expense for this is minimal, since no project description is longer than 5 pages.

Collaboration

Students are encouraged to work together; however, each type of assignment has a set of requirements as to the extent of collaboration permitted in the final submitted version. These requirements are as follows

1. Final Project Reports: Each group may choose to turn in one report as a group or each member of the group may turn in a separate report. Each report turned in must be original and data cannot be shared between groups. **If a group report is turned in, all members of the group will receive the same grade for the report. Individual reports will receive separate grades.**

General Requirements

Always bring the lecture course textbook with you to lab. If you don't have one, you must borrow or buy one for use in this course.

Students are presumed to have an electronic mail account, to have their address published in USC's online directory and to check their e-mail regularly. The laboratory instructors, support staff, and faculty in charge of the laboratory can all be reached *via* an e-mail link at the laboratory web site.

The laboratory instructors, support staff, and faculty in charge of the laboratory may choose to send important information by e-mail. Students are responsible for supplying a functioning e-mail address and checking for messages on a regular basis.