

Physics 427, Fall 2008

“Do a little more of that work which you have confessed to be good, which you feel that society and your most Just Judge rightly demand of you. Cultivate the tree which you have found to bear fruit in your soil. *If you have any experiments you would like to try, try them.* Now’s your chance.”

—Henry David Thoreau, 1850. (emphasis added)

Administrivia

Instructor	Dr. Eric Ayars
Office	PhSc 124
Lecture	Tues 9–11AM, in PhSc 123.
Lab	Tues 2–5PM, in PhSc 123.
Phone	898-6967
Email	eayars@csuchico.edu
Course Webpage	http://phys.csuchico.edu/ayars/427/

Required Materials

Lab Book	Bound quad-ruled notebook
Textbook	<i>Experiments in Modern Physics</i> , 2 nd ed., Melissinos & Napolitano

Course Structure

There are two aspects of this course. The first, and most obvious aspect, is to give you some exposure to more advanced laboratory experiments and experimental techniques. The less obvious goal is to hone your skills in the areas of scientific writing and presentation.

This is a laboratory course. There is a “lecture” section, which will be used for discussion and presentation; but you will spend most of your time in the laboratory, performing experiments. There are many experimental options, some of which are described on the course webpage. After the first couple of experiments, you are encouraged to investigate other options other than the experiments I choose. This is an opportunity to create your own experiment and do some truly original work! This can be more challenging, but it’s highly rewarding.

This is also a writing proficiency course, open only to students who have completed ENGL 130 (or its equivalent) with a grade of C- or higher. Over the course of the semester you will be given a number of writing assignments related to your experimental work. These assignments must be submitted in L^AT_EX, and should be of a quality appropriate for submission to a physics journal. As with writing for actual journals, do not expect your work to be accepted in its initial form. I will play the part of editor and referee in this process.

Laboratory work generally benefits from collaborative effort, so group work is encouraged in the experiments you perform. Writing in a laboratory setting is frequently a collaborative effort as well, but for the purpose of maximizing the learning process in this course, I ask that your written assignments be an individual effort.

Grading

Your grade will usually be determined by your effort in the lab, participation in lecture, the quality of your written work, the completeness of your lab book, and your final presentation. Having your work published in a reputable, refereed science journal trumps all else, though, and results in an automatic ‘A’.

A note about the lab book: it should be a complete record of what you do in the lab. It’s a “lab diary”, if you will. It must contain any notes about what you’re doing, how you’re doing it, data (or references to data files), and so on.