

# Physics 126: Analytical Physics II Laboratory

Syllabus, section 4, spring 2009

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Course Website: <http://www.geneseo.edu/~mclean/AnalytIIILab/> and in [myCourses.geneseo](#)

## Learning Outcomes (or Why am I here?)

As a result of taking this course, the student should be able to ...

1. ... explain many aspects of the functioning of electrical circuits and the propagation of light.
2. ... communicate their experiences of the physical world in a clear, precise, and concise manner.
3. ... demonstrate understanding of the methods used by physicists to quantitatively investigate the physical world, including mathematical techniques, some specific equipment (particularly the oscilloscope), and the limitations on both.

## Times and places:

Labs: in Bailey 111, Tue. 9:00am–12:00 noon.

Office hours: Mon. & Tue. 1:00–2:30pm, Thu. 1:00–2:00pm

I am also available at other times. See my schedule on my web site. Stop by my office, or to ensure that I'll be there contact me by phone or email.

## Required materials:

See the list in the Information section at the beginning of the *Laboratory Manual*.

## Required coursework and grading (with fraction of final grade):

36% Lab Abstracts: There will be 4 of these throughout the semester. Grading will be based both on the writing itself, and on evidence of a well done experiment.

24% Lab Results: For other labs, you will be required to report your results in other ways (worksheets, graphs, etc.).

20% Quizzes: At the beginning of the every lab.

15% Log Book: Checked at a few unannounced times during the semester.

5% Participation

More details concerning all of these can be found in the initial pages of the *Lab Manual*.

- ***Although experiments are performed as teams, each student is required to submit his or her own unique work.***
- ***All Lab Results/Reports/Abstracts are due at the beginning of the lab following the lab in which the necessary experimentation was completed. Late work will be penalized 20% per day (2.5% per hour, eight hours per day).***

## Sources of Help:

- The Physics Learning Center, in ISC 214, is staffed by physics majors. Check the schedule at <<http://physics.geneseo.edu/~pogo/Tutors/Tutors.htm>>.
- I have regular office hours, and am happy to meet with you at other times as well.
- Several other physics faculty also teach this lab. They are usually happy to answer quick questions, although note that specifics of the course vary between sections.

- SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional or learning disabilities. Students should consult with the Director in the Office of Disability Services (Tabitha Buggie-Hunt, 105D Erwin, tbuggieh@geneseo.edu) and their individual faculty regarding any needed accommodations as early as possible in the semester. Further information available at <<http://disability.geneseo.edu/>>.

**General Comments:**

- This course is a complement to PHYS 125: Analytical Physics II. However, it is still a separate course with a separate assigned grade. The sequence of topics is related to the topics in PHYS 125, but the timing and emphasis are noticeably different.
- In order to be prepared to execute each lab in the time available, carefully read the description in the lab manual beforehand. Your preparation will be one focus of the weekly quizzes.

**Schedule and Planned Abstract Due Dates**

<b>date</b>	<b>Lab</b>	<b>Abstract Due</b>
1/20	(week of Martin Luther King Day)	
1/27	1. Standing Waves on a String	
2/3	2. Focal Length of a Convex Lens	
2/10	3. Focal Length of a Concave Lens	for lab 2
2/17	4. Interference and Diffraction of Light	
2/24	5. Plotting Electric Field Lines	for lab 4
3/2	6. DC Circuits	
3/9	7. Ohm's Law	
3/16	(Spring Break)	
3/23	8. Resistance and Resistivity	for lab 7
3/30	9. Capacitance - RC Time Constant	
4/6	10. Oscilloscope Training	
4/13	11. Very Short Time Constant	
4/20	(GREAT Day)	
4/27	12. Forces on a Current-Carrying Wire	
5/4	Forces on a Current-Carrying Wire	
5/10	(Finals period)	for lab 12