Physics 124: Analytical Physics I Laboratory

Syllabus, section 2, fall 2008

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Summary Course Website: http://www.geneseo.edu/~mclean/Analyt1Lab/
(Full Course Website available in mycourses.geneseo.edu)

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

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

Natural Science General Education Courses:

1. …demonstrate knowledge of the following aspects of the scientific method: scientific observation, hypothesis development, data gathering and analysis, evaluation of evidence.
2. …demonstrate understanding of and ability to apply scientific data, method, and models germane to [physics].

This course specifically:

1. … explain many aspects of how physical objects move and respond to forces, based on and illustrated by direct physical experience.
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, and the limitations on both.

Times and places:

Labs: in Bailey 114, Mon. 2:30–5:30pm.

Office hours: Tue. 1:00–3:30pm, Wed. 1:00–2:00, Thurs. 2:00–3:30pm

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

Required materials:

See the list on p. 5 in the *Laboratory Manual*.

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

35% Lab Reports and Abstracts: There will be 4 of these throughout the semester, plus a rewrite of one of them. The grading of these will be based both on the writing itself, and on evidence of an experiment well done based on a variety of sources. See pp. 5, 7 of the *Lab Manual*.

25% Lab Results: For other labs, you will be required to report your results in other ways (worksheets, graphs, etc.).

20% Quizzes: There will be quizzes at the beginning of the labs. See p. 5 of the *Lab Manual*.

10% Log Book: These will be checked at a few unannounced times during the semester. See p. 6 of the *Lab Manual*.

10% Lab Effort and Participation: See p. 5 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). Work submitted during lab, but after the beginning, is automatically considered 3 hours late.***

Sources of Help:

- The Physics Learning Center, in ISC 214, is staffed by physics majors. Check the schedule at <http://www.geneseo.edu/~pogo/Tutors/Tutors.htm>.
- I have regular office hours, and am happy to meet with you at other times as well.
- Many 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, 106A 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/>.

Expected Schedule of Assignment Due Dates

date	Lab	Take Home Due	Written Assignment Due	Due at End of Lab
8/25	1. Uncertainty in Measurement			
9/1	(Labor Day Break)			
9/8	2. Constant Acceleration in 1D	assignment (lab 1)		
9/15		assignment		results sheet (lab 2)
9/22	3. Vector Addition		Report (lab 2)	work sheet (lab 4)
9/29	4. Projectile Motion	assignment		
10/6			Rewrite (lab 2)	
10/13	(Fall Break)	work sheet (lab 4)		
10/20	5. Newton's Second Law		Talk Abstract (lab 4)	
10/27				
11/3	6. Momentum Conservation in 2D			
11/10			Paper Abstract (lab 5)	work sheet (lab 6)
11/17	7. Rotational Inertia			
11/24	(Thanksgiving Break)			
12/1	8. Design: Simple Pendulum	log book results (lab 7)	Paper Abstract (lab 6)	graphs (lab 8)