WINTHROP UNIVERSITY
Department of Chemistry, Physics, & Geology

Semester: Fall 2011 **Course:** PHYS 201L 001 - General Physics I Laboratory.

The laboratory will be held in Sims 205 on Tuesdays 2:00-4:50 PM. Students need to register for one of the lab section of PHYS 201L.

My office hours are MWF 10:00-10:50 or by Appointment at other times.

Pre_Lab: I have included links mostly for video clips that serve as introductions to each experiment. They are very voluble in clarifying the basics concepts relevant to what you do in the lab and some of them are entreating. Take time to view the video clips before you come to each lab.

LAB SCHEDULE

Lab #	**Week**	**Pre-Lab: View and review before each lab session.**	**Experiment**
1	Aug. 29 - Sept. 4	Read Excel Tutorial	Spread Sheet & Graphing
2	Sept. 5-9	View Density Video	Density
3	Sept. 12-16	Review Vector Addition	Vector Addition
4	Sept. 19-23	Watch video on how to use the DataStudio to measure speed.	Data Collection with a PC
5	Sept. 26-30	Listen to the Friction Song Watch the video Calculating Friction	Friction
6	Oct. 3-7	View Conservation of Mechanical Energy Experiment done By Middle	Energy

		School Students S. Korea	
7	Oct. 1014	Ballistic Pendulum Video	Ballistic Pendulum
Fall Break	Oct 15-18		
8	Oct. 19-21	What is Torque ? Application of Torque. A torque sample calculation .	Torque
9	Oct. 24-28	Introduction to Rotational Motion Angular Momentum	Rotational Motion
10	Oct. 31-Nov. 4	Simple Harmonic Motion: The Simple Pendulum Spring Constant (k) and SHM	Hooke's Law and SHM
11	Nov. 7-11	Archimedes's and the Eureka Moment Finding Volume of a Crown Archimedes's Principle Experiment	Archimedes' Principle
12	Nov. 14-18	Standing Waves on a stretched String Vibration see the unseen for fun	Vibrating String
13	Nov.21-22	Vibration in Air Columns : Harmonics and Overtones Measuring the	Speed of sound in air

		speed of sound	
Thanksgiving	Nov .23-26		
14	Nov. 28-Dec. 2	Make up labs?	

Textbook: Physics, Cutnell & Johnson, 8th Edition, John Wiley Publishing.

Course Objectives:

- Learn how to design and carry out introductory physics experiments.
- Learn how to use computers for data collection & analysis and graphing.
- Draw conclusions for the experiments and write laboratory reports.

Include the following in the same order for your lab report:

1) Lab write-up from the web-link.
2) Graphs, calculations, answers for questions, etc.
3) Conclusion.
4) Staple the report at the top left corner making sure nothing is hidden under the staple.

Rules for the laboratory

1. You must read the web-link and the relevant materials from the textbook before the lab period and be prepared for the laboratory.
2. Bring the textbook and do not come late.
3. You will work in a group of two. Both partners should actively take part in collecting the data and in the experimental process.
4. At the end of your lab work you need to return all the laboratory equipment to the appropriate places where you took them.
5. You need to handle the equipment carefully, giving special attention when warranted.
6. When you leave the laboratory, you need to make sure the laboratory table is clean and free of any materials.
7. Do not miss any laboratory. You will receive "0" for all missed laboratories.
8. Lab reports are due at the end of the lab period.

Guidelines for conclusion

Conclusion should state things that are unique for your investigation. In length it should not less than half a page and more than a page. Just remember that you cannot write your conclusion without completing your experiments or investigations. A general statement like "I have determined the densities of given solids" is not acceptable. You need to refer to your data, methods, and results in your conclusion. First you may state your results for the purpose. Then you may discuss about the errors and their possible causes. Describe your reasoning using physics terminology and principles. You should explain as completely as possible what goes through your mind that leads you to your conclusion. While we encourage you to discuss your physics experiments with your partners, your written lab report must be your own work.