Physics 120 Everyday Physics Winter 2015

Syllabus

Instructor:	Alberto Rojo
Office:	186C SEB
Telephone:	3422
Office Hours:	T/Th 11:00-12:00 or by appointment
E-mail address:	rojo@oakland.edu

Day:	Tuesday/Thursday
Times:	3:00 – 4:47
Classroom:	SEB 384
Lab:	SEB 66

Textbooks:

There is no textbook required for this course. We will use the notes that you can download from https://files.oakland.edu/users/rojo/web/p120/Schedule.htm

Recommended Texts:

- Paul G. Hewitt, Conceptual Physics. The bookstore ordered the 11th edition but you can also use previous ones. Also I will distribute notes and send them by Moodle.
- D. Macauley *The Way Things Work* (occasional reference)
- L. Bloomfield *How Things Work* (occasional reference)
- L. Kirkpatrick & G. Wheeler *Physics A World View* (occasional reference)

Course Prerequisites and goals:

The essential prerequisite is *curiosity* and a desire to learn.
The goal is to learn some science, and find that doing so can be both enjoyable and useful.

Course Structure:

In Physics 120, *The Physics of Everyday Life*, we will have some emphasis on learning by experiment combined with listening to lectures. The intended audience is students interested in natural phenomena in the world around us and in the working of the fruits of technology. Although no prior training in physical science is assumed, I will try to achieve a qualitative and, insofar as possible, a quantitative understanding of the systems we study. We will achieve this, I hope, by direct experiment, and by learning some basic principles--not by mathematical analysis.

Since we will do some experiments, which are performed in class, *attendance is mandatory*, and will be recorded. The primary record of a student's work will be the Laboratory Notebook, which includes notes, diagrams, graphs, results, and interpretation.

Required Work

- Attend ALL classes. Arrive promptly and stay the entire period.
- Perform all laboratory work.
- Complete all homework and return in the indicated date.
- Keep a laboratory notebook
- Take all tests.
- Explore, be attentive and interactive, pose questions to each other and figure things out.

Grading

25% Laboratory Notebook. This notebook will be due the same days of the tests.
15% Homework and Quizzes.
30% Tests. There will be two midterms and a final exam.
30% Attendance.

Up to 1 absence per term (with cause) will be permitted.
Each additional missed class will decrease the overall grade by 3%.

Grading will NOT be on a curve.
The final grade will be computed according to the chart on the right.

Percent	Grade
> 90%	4
80% - 90%	3.6 - 3.9
70% - 80%	3.0 - 3.5
60% - 70%	2.0 - 2.9
50% - 60%	1.0 - 1.9
< 50 %	0

PHY 120 Physics of Everyday Life

Winter 2014

with Professor Alberto Rojo Syllabus

Class & Exam Dates	Subject/Experiment	Readings & Review	Homework
PDF's for Entire Semester			
Winter 2014	Labs	Readings	Homework
PDF's for Individual Classes			
January 6	Class 1: Soap Bubbles	Surface Tension Notes	Class 1 HW Due 1/8
January 8	Class 2: Surface Tension	Surface Tension Review	Class 2 HW Due 1/12
January 13	Class 3: Air Pressure	Pressure Notes	Class 3 HW Due 1/15
January 15	Class 4: Density and Buoyancy		Class 4 HW Due 1/20
January 20	Class 5: Material & Atoms	Atomic Structure Notes	Class 5 HW Due 1/22
January 22	Class 6: Static Electricity	Static Electricity Notes	Class 6 HW Due 1/27
January 27	Class 7: Batteries	Batteries	Class 7 HW Due 1/29
January 29	Class 8: Circuits		Class 8 HW Due 2/3
February 3	Class 9: Series and Parallel	Series/Parallel Notes	Class 9 HW Due 2/5
February 5	Class 10: House Wiring		Class 10 HW Due 2/10
February 10	Class 11: Ohm's Law		Class 11 HW Due 2/12
February 12	Class 12: Magnetism		Midterm HW Due 2/17
February 17	Midterm Review		
February 19	Midterm		Class 12 HW Due 3/3
February 24	*Winter Break*		
February 26	*Winter Break*		
March 3	Class 13: Relays And Buzzers		Class 13 HW Due 3/5
March 5	Class 14: Motors		Class 14 HW Due 3/10
March 10	Class 15: Speaker		
March 12	Class 16: Bernoilli Effect		
March 17	Class 17: Waves and Sound		
March 19	Class 18: Physics of Music		
March 24	Midterm Review		
March 26	Midterm		
March 31	Class 19: Reflection	Light	
April 2	Class 20: Refreaction		Class 19 HW Due 4/8
April 7	Class 21: Polarization	Polarization Notes	
April 9	Class 22: 3D Movies		
April 14	Randomness in Everyday Life		
April 16	Final Review		
April 23	Final Exam 12:00 - 3:00	SEB 384	