Fred Moore
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Office Hours-Scheduled hours: 1:00pm Tuesday & 12:00 pm Wednesday (one hour each day), or by appointment or if you catch me around Willamette/Onyx/Klamath.

TA office hours: Hake and Keever, TBD
This course is the laboratory complement to Prof. McMorran’s Phys253

Goals:
1. Provide measurement and observation based learning environment to explore the basic principles encountered in the Introductory Physics course.
2. Utilize problems in order to motivate the use of measurement to answer questions.
3. Foster the ability to design experiments to obtain useful quantities for solving problems.
4. Develop skills at extracting information presented in graphical form.

Format:
1. Work in groups (ideally TWO people)
2. Complete three types of assignments:
   b. Problem Plan: short answers to leading questions designed to get you thinking about HOW you’ll accomplish a solution to the following week’s “lab problem.”
   c. Problem Solution: more formal prose, typed-out but diagrams and math can be done freehand: neatness is required. Follow a simple: intro, experiment, analysis, conclusions format. Again, designed to need little if any outside time to complete.
   d. Practicum: essentially a laboratory final, done during the last schedule laboratory session of the term.
3. I’ll post a more detailed schedule that shows what is due every week.

Assessment:
1. (10 pts./each) Laboratory “worksheet”. A total of four during the term. One copy per group. All group members will earn the same grade. Due 4pm on the Friday of every week where one is scheduled.
2. (2 pts./each) Laboratory “lab problem” plan. A total of three during the term. SUBMITTED INDIVIDUALLY. Everybody turns it in. Due 4pm on the Friday of every week where one is scheduled.
3. (10 pts./each) Solution to “lab problem” a total of three during the term. One copy per group. All group members will earn the same grade. Due 4pm on the Friday of every week where one is scheduled.
4. (30 pts) Laboratory Practicum – last week of the term. **Individual Grade.** The practicum will involve using the laboratory equipment, analyzing data, and solving a problem. Details of the practicum will be provided during the term a basic assessment rubric for it is as follows:

   a. Operate interface properly, collect proper data, analyze the data correctly, solve problem correctly (27-30)
   b. Operate interface properly, collect some data, analysis trouble. (14-27)
   c. Operate interface properly, collect poor data, improper analysis (5-14)
   d. Unable to operate the interface and equipment properly, no useful data (0-5).

If you are unable to complete the lab practicum at a proficient level you cannot earn an A grade for the laboratory course regardless of what you earn for the other laboratory grades.

**You must complete all laboratory work and the lab practicum to pass the course.** If you are absent you must schedule make-up work. If it is an absence because of illness/injury or other legitimate reason you may make-up the work without penalty. Any other make-up work that is accepted will entail a late-penalty. Note that for the 290 labs an absence begins 10 minutes after the official start time as measured by the instructor on-duty. If you are later than this you will be required to depart and schedule a make-up session.

**Philosophical underpinnings:**

This laboratory will model how real-world experimental scientists (in particular physicists) work. Note that this goal is related to the process of experimental laboratory work not its content. You will be working with content that is apropos to introductory 1st term physics (primarily something we call ‘mechanics’) and this will doubtless help with your phys253 coursework. However, you need to understand very clearly that doing well in this laboratory does not hinge on “…getting the correct numerical answer….” Indeed, one definition of “process” as I use the term here is: “…everything you do in the laboratory up to the point where you start crunching numbers to get a numerical answer….” Realize too that if your process is correct then you automatically get the right numerical answer (assuming correct calculator work). On the other hand a correct numerical answer arrived at by a poorly crafted, ill-documented, error-prone and opaque process is virtually worthless and, in the real-world perhaps even dangerous.

**Logistical miscellanea:**

I’m fully committed to help each and every student perform to the best of their ability in this lab. Under the Americans With Disabilities Act. The “accessible education center” ([http://aec.uoregon.edu](http://aec.uoregon.edu)) exists to help students achieve the access to educational resources. If you anticipate needing special consideration or accommodation in phys290 please contact me immediately so we may discuss your situation.

I anticipate making significant use of Blackboard® during the term. You need to know how to use it. I also expect students to check their email regularly and I will hold you individually responsible for having read and understood any laboratory-related email that is sent to you either by me or one of my TAs.