COURSE SYLLABUS
PHYS 1210 – Engineering Physics I
Spring 2015

Instructors:

Dr. Mike Brotherton
Dr. Jim Verley

Teaching Assistants:

Subash Kattel, skattel@uwyo.edu, PS 103B, Office Hours W 5:10-6:10pm
Andria Schwortz, aschwort@uwyo.edu, PS 103C, Office Hours Tu 1:30-2:30pm

Additional required materials (texts, online):

1. Sears & Zemansky's **University Physics**, new or recent edition, by Young & Freedman
2. **Mastering Physics**
3. **Lab Manual** Michalak, Make sure you get the Phys 1210 manual and not the Phys 1220.

Course Content

Physics! How things move. Fundamental concepts like energy, momentum, force, friction, and more. Newton's laws of motion. Gravity. Mechanical waves. Conservation principles. This course embodies the basics needed for majors in physics, astronomy, and engineering. It's important, and I'll try to make it fun, too.

Class Meetings

Attendance to lecture is strongly encouraged, but not mandatory. Class meetings will feature a combination of lecture slides, videos, demos, and problem solving. In my experience, the majority of students want to see, and benefit greatly from, seeing example problems solved in real time. Some of these will be examples straight from the textbook, while others will be problems from the back of the chapters, the occasional homework problem, or others. It's smart to do the assigned reading *before* class -- this will make lecture easier to follow and lead to better questions. The lectures will not necessarily cover all the topics in the chapter. Lecture slides can be found on the course webpage in Mastering Physics. Lectures are an opportunity to address more challenging concepts and to explore material beyond the text from a different perspective. Please bring questions to class and be prepared to discuss concepts. It will be good to bring a calculator, as well as scratch paper.

Laboratory (PS 133)

Attendance at lab is not optional and accounts for 25% of your grade, although we will drop your lowest score when computing the final grade. Subash and Andria are your dedicated lab instructors and will have their own lab syllabus. Lab meets for the first time the second week of classes. If you do have a schedule conflict you know about in advance, the lab instructors can usually accommodate you attending a different lab period once in a while as needed.

Homework
In addition to the reading, weekly homework assignments will be posted on-line on the www.masteringphysics.com website. The procedures for self-registration are explained in a document I have available on the course website. Not doing the homework WILL hurt your grade! **Register ASAP!** (Note: like lab, we will drop your lowest score. Everyone is entitled to a bad week. Keep in mind that the homework is there to help you learn the material and it is to your benefit to do them all.)

The deadline for each homework will usually be 11:59pm on Wednesdays, but is subject to change as announced during lecture and on MP website. Be advised not to work last minute on the online submissions. The system tends to be busy at times and the internet connection could be down. It is your responsibility to work and submit before the deadline. I set the online homework system up to accept post deadline submissions for a set grade penalty (50%).

The MP syntax requires some experience. I provide a no penalty training homework. Some problems in it can earn you a small bonus. It also gives you opportunity to learn the language syntax to avoid grade penalties in the actual homework.

.A short list of common sources of grade loss in MP:
- Wrong spacer between multiple entries
- Wrong rounding of final or intermediate results
- Multiple attempts used up for the same wrong answer (note: MP has a 2% answer tolerance for grading)
- Student fails to press the final "submit" button of a problem

Some problems have hint boxes. Using hint boxes does not cause any penalty. You can find further information here:
An instruction video: http://www.masteringsupport.com/videos/intro_video/intro_video.html
FAQ page : http://www.masteringphysics.com/site/support/faq-students.html
PC requirements : http://www.masteringphysics.com/site/support/system-requirements.html
General info : http://www.masteringphysics.com/site/product/for-students.html

Discussion
Your TA Andria Schwortz will run weekly discussions. The primary thing thing students ask for in this class are more worked example problems and this is what discussion sessions feature. *Attending discussion is to your benefit.* It will be good to bring a calculator, as well as scratch paper. You are expected to actively attempt all problems – just like you can't learn to play the piano or to lift weights by watching someone else do it, you can't learn physics by watching someone else do it. Discussion is where you will attempt problems on your own, receive guidance on how to approach problem solving, share ideas with your peers, and see problems

worked out by others when you get stuck. All students are expected to work both individually and in groups – you can't say you really know a thing unless you can both do it yourself, and *explain it to others*, and sometimes the best way to learn something you're stuck on is for a classmate to show you how they got unstuck at the same point.

Exams

There will be three exams during the course, two during the semester and one during finals period (the last exam will be comprehensive). The exams will be closed-book, but formulas and physical constants will be provided and need not be memorized – but be warned, being given the formulas is not the same as knowing how to apply them. Exam dates will be confirmed in class and the website, but should be the ones scheduled: Feb. 26, April. 2, and during finals week as scheduled by the registrar.

Grading

The grading scheme will be: A = 90-100%, B = 80-90%, C = 70-80%, D = 60-70%, F < 60%
The professors tend to round up, and reserve the right to adjust the scheme in your favor if the score distributions are lower than expected (i.e., "curving"). The components of the course are weighted:

Laboratory = 25% Exams = 60% Homework = 15%

Academic Honesty:

The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated [from the UW General Bulletin].

Disability Statement:

If you have a physical, learning, or psychological disability and require accommodations, please let the instructor know as soon as possible. You must register with, and provide documentation of your disability to University Disability Support Services (UDSS) in SEO, room 330 Knight Hall.)

Want more help?

If you think you want or need a bit more help, there's many free tutoring resources available to you, starting with your professor and either of the TAs for the course. But if you'd rather talk to someone else or our schedules don't mesh up, there's also all sorts of tutoring, listed below.

- Dr. Brotherton's Office Hours: MW 1:30-3:00pm, or by appointment
- Dr. Verley's Office Hours: TR 11:00am-12:30pm, or by appointment
- Subash Kattel's Office Hours: W 5:10-6:10pm, or by appointment
- Andria Schwortz's Office Hours: T 1:30-2:30pm, or by appointment
- STEP Tutoring (Coe Library): Sun-Thurs 6:00-10:00pm

- Tau Beta Pi (EN 1070): many day and evening hours, see http://www.uwyo.edu/ceas/current-students/tutoring.pdf
- eTutoring is also available, see WyoWeb for schedule

Course Schedule and Reading Assignments (subject to change)

Week	Reading	Lab	Notes
Jan 26-30	Ch. 1, 2	No Lab or Discussion	Homework #0 (practice) is due Feb. 2
Feb 2-6	Ch. 3	Michalak Lab 0, Changing Motion	Homework #1 is due Feb 4
Feb 9-13	Ch. 4	Michalak Lab 1, Projectile Motion	HW #2 is due Feb 11
Feb 16-20	Ch. 5	Michalak Lab 2, Verifying Newton's Law	HW #3 is due Feb 18
Feb 23-27	Ch. 5	Michalak Lab 3, More Studies of Forces	HW #4 due Feb 25 **Exam 1** Feb 26
Mar 2-6	Ch. 6	Michalak Lab 4, Energy	HW #5 is due Mar 4
Mar 9-13	Ch. 7	No Lab	HW #6 is due Mar 11
Mar 16-20	xxx	Spring Break	xxx
Mar 23-27	Ch. 8	Michalak Lab 5, Momentum	HW #7 is due Mar 25
Mar 30-April 3	Ch. 9	Michalak Lab 6, Ramp Race	HW#8 is due April 1 (no joke!), **Exam 2** April 2
Apr 6-10	Ch. 10	Michalak Lab 7, Atwood Machine with Torque	HW #9 is due Apr 8
Apr 13-17	Ch. 12	Michalak Lab 8, Angular Momentum	HW #10 is due Apr 15
Apr 20-24	Ch. 13	Online Lab A, Buoyancy	HW #11 is due Apr 22
	Ch. 14	Michalak Lab 9, Periodic Motion	HW #12 is due Apr 29
May 4-8	Ch. 15, 16	Online Lab B, Waves	HW #13 is due May 6
	Final Exam scheduled during finals week		