Physics 1120 Syllabus, Fa '04.  Prof. Steven Pollock and Mike Dubson

Lectures:  MWF 10 A.M (Section 100) or 12 A.M (sect. 200) in Duane G-1B20
Recitations:  Tuesdays in Duane basement rooms.  (Rooms are moved to G2B77 and 75)
Steve's office:  Duane F-419 (in the physics tower, fourth floor)  Phone: (303) 492-2495
Mike's office:  Duane F-1033 (10th floor) Phone: (303)492-4938
Office hrs:  Steve: MWF after class (behind stage) + M2-3, W2-3 Help Room (G2B87)
            Mike: TBA Help Room (G2B87) or by app't for both of us (just email!)
Administrative office hrs:  TBA in Mike's office (F1033)
Emails:  Steven.Pollock@colorado.edu, or  Michael.Dubson@colorado.edu
Web page  http://www.colorado.edu/physics/phys1120  The online syllabus contains more
than you will find here, and a great deal of essential course info is there too. Check it often!

Phys1120 is the 2nd semester of intro physics. We emphasize conceptual understanding
and problem solving skills. We cover electricity, circuits, magnetism, electromagnetic waves, light,
and optics: the foundations of our modern technological society. Our goals are for you to continue
developing knowledge and intuition about how the world works, to learn to approach, solve, and
understand physics problems on both qualitative and quantitative levels, to relate classroom
physics to the real world you live in, and to develop a deeper appreciation of the scientific method.

Pre/co-requisites:  Calc II (MATH 2300/APPM 1360) must be taken at least in parallel. You
should have a strong working knowledge of algebra, trig, Calc I, and Phys1110. Phys 1140 lab is
highly recommended (corequisite) Enthusiasm, curiosity, and an open mind will also be helpful!

Required purchases:
1) "Fundamentals of Physics", Halliday, Resnick, Walker. ("HRW", 6th ed). This is the standard
college physics text, with lots of verbal explanations and detailed worked out examples.
2) "Tutorials in Introductory Physics", McDermott. This 2-volume set is required for use in our
recitations. (You must bring the tutorial book every Tuesday, you'll be working out of them!)
3) H-ITT "Clickers", available at the bookstore, will be used every lecture. (See web for details)

Reading is an essential part of 1120! Reading the text before class is very important. Lecture is to
clarify your understanding, to help you make sense of the material. I will assume you have done
the required readings in advance! We'll cover roughly one chapter/week, starting with Ch. 22.

LON-CAPA (Computer Assisted Physics Assignments)  Each student's assignment is slightly
different - we'll distribute them in bins in the basement. Work out the answers on paper before you
log on to "hand in"/check your answers. CAPA gives instant feedback, and an opportunity to
change wrong answers without penalty up to a limited max number of tries. New assignments
appear online/in the basement weekly, due Thurs night. (Technically Fri at 8 AM)  Late hw’s will
not be accepted by CAPA. Go to http://lon-capa.colorado.edu/ (or link from our course home page)
Your Student ID is both your username and initial password.

We encourage collaborative teamwork on homework and tutorials, an essential skill in
science and engineering (and highly valued by employers!) Social interactions are critical to
scientists' success - most good ideas grow out of discussions with colleagues. As you study
together, try to help your partners get over confusions, ask each other questions, critique hw and
tutorial write-ups. Teach each other. You will learn a lot!
Note: While collaboration is the rule in technical work, evaluations of individuals also play an
important role. Exams will be done without help from others. For all assignments, the work you
turn in must in the end be your own: in your own words, reflecting your own understanding.
Recitations/tutorials: This is a chance to work in a smaller setting with fellow students and trained teaching/learning assistants. Tutorials are carefully designed to enhance your understanding of key ideas dealt with in the class. You'll hand in tutorial homeworks, and work through worksheets in small groups at your own pace. It's more important for you to understand the material than to "cover" all the questions. You must take responsibility for your own learning! If you find yourself ahead of your partners, explain some physics to them. Explainers always learn more than listeners! Attendance at tutorials is mandatory. Remember to bring your workbook to tutorial every week.

Pretests: There will be a required "pretest" (online between Fri lecture, up to Tue 8AM) every week due before tutorial. You get full credit just for trying (your answer is not graded)

Participation: From time to time we will announce short "online participation questions", which count towards your grade. Full credit is given merely for honest participation (we won't grade your answer, so you can be honest with us!) Occasionally in lectures, your work may also count directly towards your grade. In most of these cases, participation is still all that counts.

The help room: You can meet TA staff in Duane G2B87 (enter through G2B90). We will try to keep it staffed 9 to 5 Monday through Friday. This is a great place to meet with other 1110 students to work together on homework and studying, and get some personalized assistance.

Grading and exams: Your course grade is determined by a combination of your performance on exams, CAPA and tutorial homework, in-class and online participation. (See web for more details.)
Exam 1: 7:30PM, Tue. Sep 14, 15% (Math 100 or Muen E050: your room will be assigned later)
Exam 2: 7:30PM, Tue. Oct 12, 15%
Exam 3: 7:30PM, Tue. Nov 9, 15%
Final Exam: 4:30-7PM, Tues Dec 14, location(s) to be announced, 15%
Homework (CAPA + long answer writeups [to be explained in class], combined), 15%
Tutorials: Participation (pretests and attendance combined), 7%. Tutorial hw, 15%: (Total, 22%)
Participation: Announced in class (online, or occasionally in lecture) combined total, 3%
Clickers: Most clicker questions are extra credit: they REDUCE total exam weight by up to a max of 10% of exam total (i.e. 6% of your grade) Please see web page for more details on grading!

Exams: There are no makeups. You may not miss any exam except for reasons beyond your control, approved by Prof. Dubson (usually a confirmed medical problem.) In the unusual case of an (at most, single) excused absence from midterms, we use an average of your other exams.
You may bring a single sheet of 8.5 in. x 11 in. paper to exams, with your own handwritten notes. Calculators with scientific notation are allowed and sometimes needed. See web for more details.

Disabilities: Please see Prof Pollock or Dubson in the first 2 weeks, if you have any special needs!

How to succeed in this course: Being "good" at physics comes with practice. CAPA problems often involve two steps: deciding which principles of physics apply, then determining the answer (which may involve calculations.) Tutorial homework concentrates even more on principles and concepts, and your ability to explain what you're doing. We encourage you to talk about physics with your friends. The thing to talk about is not which number to put where (the calculation is the easy part), but the reasoning that helps you decide what to do with the numbers. Please, get help early if you are struggling with any aspect of the course (from your TA/LA/Prof. Pollock/Dubson/help room/study group/tutor...) We're here to help!

Any information in this syllabus is as accurate as is possible at the time of writing. Announcements about changes of any kind will be made in class, and (usually) posted on the web, and will take precedence over this syllabus. You are responsible for what is said in class, whether or not you are in attendance.