

Physics 141A Information Sheet

Autumn Quarter 2018

H.J.Frisch, PRC265 (702-7479)

Reaching me: Is best done by phone or in person. My office phone is 773-702-7479. My office is Physics Research Center (PRC) 265. My lab is PRC150; I may be there if not in my office

Please **do not send me email** unless it's an emergency or to correct a mistake I've made in a problem set.

Office Hours: Friday, 4-5pm, in PRC265, or by appointment (please make an appointment in person or by phone (**and not email**)). I often am available in my office Sunday afternoons at 3pm; please phone first, as the PRC building doors are locked.

Level of Preparation/Prerequisites: Mathematical aptitude and interest in physics are the primary prerequisites. No prior math is assumed beyond single-variable calculus and HS algebra; mathematical methods are an integral part of the course and will be taught when we need them. No specific prior physics is assumed, although if you have not had any physics in high school you should see me ¹.

Required Texts:

1. **Your notes from class.** The official text for your course is your notes. You **must** be willing to take notes to take this course ².
2. David Morin, *Introduction to Classical Mechanics* Used heavily for problems and assigned reading - excellent. Essential.
3. M. J. Crowe *A History of Vector Analysis* (Dover) Not essential for the course per se, but may be very helpful in providing a deeper understand of the language we use (it's also inspiring to learn about Grassman and other remarkable auto-didacts).
4. Richard Feynman, Robert Leighton and Matthew Sands, *The Feynman Lectures on Physics, Vol. I* Classic, brilliant, confusing, enlightening, ... You should own it and refer to it.
5. John R. Taylor: *An Introduction to Error Analysis* The standard text. Too much, but error analysis is essential to the course, and this may (or may not) help. (Knowing the Chain Rule and a little common sense may be all you really need, but you have to become expert to get to be able to cut corners and still be correct.)
6. *Physics 141 Lab Manual*; Publisher: UC Physics Dept. Required.

Recommended Texts:

1. S.T. Thornton and Jerry B. Marion; *Classical Mechanics of Particles and Systems*. 2nd or 3rd-year level. Excellent
2. M. E. Rose; *Elementary Theory of Angular Momentum* Canonical graduate text. Much too hard, but good for discussion with your study group.
3. Strunk and White: *The Elements of Style* Essential skills.

¹It's both an advantage and a disadvantage over having had the typical AP Physics courses- you know fewer things that are right, but also many fewer things that are wrong.

²In December you will be asked to evaluate the text as part of the course evaluation- work to give yourself a good grade.

4. Egil "Bud" Krogh and Matthew Krogh; *Integrity: Good People, Bad Choices, and Life Lessons from the White House*; Perseus Book (Publisher) (This relates to working in study groups, and the trust we put in you to write out the problem sets yourself.)
5. Richard P. Feynman and Ralph Leighton; *Surely You're Joking, Mr. Feynman!* This is a little appalling in places, but it's Feynman...

I also recommend going to the Library and browsing the Mechanics section- often one book is very clear on one topic to one person. Favorite texts tend to be very personal, and you may find one that really tells it the way you understand.

Reading: There will be reading assigned every week in one of the required texts. Taking (brief) notes on the reading with the rule that you never write down anything you don't understand is a good filter- I and the TA's can then help with the question. Also the notebook you generate this way will be of use in exams, future courses and work.

Problem Sets: Assigned on Monday; due the following Monday in class. Solutions will be posted during class; consequently late solutions cannot be accepted. The teaching assistants and myself are here to help you if you are having trouble. Please don't get isolated and behind. We are going to be moving fast... In the final tally the lowest 2 problem set scores will be tossed out.

Quizzes: There will usually be a quiz given in the Discussion Session. They are graded, so you should be there. This is also a good time to get help on the homework. In the final tally the lowest 2 quiz scores will be tossed out.

Labs There will be lab weekly starting third week. The lab assignments are taken care of by Tiffany Kurns and Mr. Gazes (Kersten 205). Pink slips have to be taken to 205 to be signed (I'm not allowed..)

Missing a lab is well-nigh fatal. I will subtract one letter grade in my book-keeping, and in addition the Department has a policy that you cannot be assigned a grade in the course. The labs are supposed to be fun as well as a chance to see real phenomena other than blackboards and screens (and professors). Make it so...

Midterm and Final: there will be one Midterm, and one Final.

Discussion Sessions: The TA's will run Discussion Sessions. Assignments and lab/teaching assistant office hours will be posted on Canvas. Discussion Sessions start 2nd week.

Study Groups: For time management you really must work with other students in a study group; the pace of the course assumes you are taking advantage of the time savings working together. However, the final solving of problems for the homework **must be your own work**. In past years the Masters of various dorms have been exceptionally helpful in finding a room and generally accommodating study groups. Ask them.

Canvas: Accessing Problem Sets, Solutions, Syllabus, etc.: The course has a Canvas page. I will send Announcements from there- however (believe it or not) I'm told that you must have your Notifications settings set correctly to receive them. Please check.

Canvas is arcane and confusing to me with so many options and categories. I will put problem sets, solutions, and other text files in 'Files'.

Grades: The final grade will be determined by a mix of the Final, the Homework, the Quizzes, the Midterm, and the Labs, in that order. The Labs, however, will be used to adjust those students close to a boundary between two grades, and consequently often have a big impact. A letter grade will be subtracted for each lab missed (medical and family exceptions, of course). The final will count twice the midterm in the course grade, and the quizzes will count approximately the same (8 x 15 minutes/quiz is approximately the same as a 2 hour final, and is twice a 1 hour midterm...). I do not grade on a curve – *your grade shouldn't depend on anybody else's*. The point is for *all of you* to master the material and techniques. If you can solve the canonical problems and systematically set up others, you will do well. I am also available to help your group.

Other: Please feel free to see me about any intellectual (hopefully physics) problems you're having. Logistical problems (labs, etc.) are handled by Mr. Gazes and Ms. Kurns (Rm. 205). You should get comfortable asking the TA's, me, and fellow students for physics help.

Motherly advice:

1. The quarter is brutally short-**don't get sick(!)**. (See Item #4)
2. Go to Chicago Presents Friday nights (cheap or free student tickets)
3. Go to Lyric, CSO, COT, Logan, jazz, theatre,...(reason for working in groups- time management)
4. Don't get sick (See Item #1)
5. Have fun...

From Mr. Gazes to me:

“ I would appreciate it if you would incorporate the following student information into any hand-outs given at the first lecture. (It would also be helpful to go over this information in lecture.)”

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***** begin Student Info *****

Students should consult the bulletin boards outside KPTC 106 starting Monday morning of week 1 to confirm their Lab Section assignments.

Any changes in course or lab section should be made through the Instructional Services office (KPTC 205) no later than Thursday of week 1.

Discussion Sections will begin meeting in week 2 of the quarter. Room assignments will be posted on the bulletin boards outside KPTC 106.

Any student who anticipates missing a Lab at any time during the quarter should see Ms. Tiffany Kurns in Instructional Services as soon as possible to see if other arrangements can be made. Unauthorized changes in Lab Section are not permitted.

***** end Student Info *****

Also, I would like to draw your attention to the following:

Since registration for your course is by lab section, students wishing to add your course (or make any other registration changes) should see Tiffany Kurns in KPTC 205. Please do not sign any pink slips that the students hand you – please send them to Tiffany, instead.

***** end Student Info *****

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GOOD LUCK!