Physics 1302: Introductory Physics II

Section: 11145
Meeting Time: T-Th 10-11:30.
Instructor: Dr. Victor Andersen
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Office Hours: M-Th 1:00-2:00 p.m.

Catalog Description: Cr. 3. Prerequisite: MATH 1330 or equivalent. Primarily for majors other than physics, mathematics, and engineering. Credit may not be applied toward a degree for both PHYS 1302 and 1322. Elementary principles of electromagnetism and modern physics.
Course Prerequisites: Physics 1301; Math 1330 (Precalculus).
Text: *Physics (2nd Edition)* by James Walker. ISBN 0-13-101416-1
Course Content: This course will cover topics in electromagnetism, optics, and modern physics.
Course Objectives: Upon completion of this course, students will be able to solve elementary physics problems concerning:

1. Electricity

2. Magnetism

3. Optics

4. Modern Physics

How to Succeed in this Course

1. **Read ahead in the textbook.** You will be encountering many new and difficult ideas in this course. Most people need several exposures to these ideas before they will actually stick, so begin to familiarize yourself with the material to come before you get to class.

2. **Come to class regularly.** For the reasons I've already said. In addition, you can *ask questions* in class.

3. **Study and work physics problems every day.** For exactly the same reasons in 1 and 2.

4. **Spend more time on the beginnings of the problems than the middles and ends.** Much of the working out of physics problems is mathematics. Setting up the problem to be worked out is where the majority of the physics in the problems occurs. Most people who have trouble in physics courses have difficulty setting up the problems, not working the problems through when they have been set up. Don't believe anyone who says "I understood the physics, I just couldn't work the problems!" Having trouble working problems is almost always due to not understanding the basic physics well enough to set up the problems.

Grading: Your final grade in the course will be determined based on three sources; 15% from homework, 60% from the best three of four in class exams, and 25% from a comprehensive final exam.

Grading Notes

- The portion of your grade from the in class exams will be determined using the best 3 scores from the 4 exams. If you miss an exam, the missed exam will be the exam dropped; no makeup exams will be given.

- Weekly homework will be assigned and graded. Some homework problems will be assigned from the textbook, while others will be assigned through WebCT. Both types of homework will be of equal weight in calculating your final homework grade for the course.

- Textbook homework is due at the beginning of class on the Monday of the following week. WebCT homework will be due at 11:55 p.m. on that day. **No late homework will be accepted!** There will be a large number of homework assignments (typically one per chapter), so missing credit for a single assignment will not do serious violence to your grade. Missing multiple assignments is a symptom of a more serious problem, however.

- Each assigned textbook homework problem will be graded on a 5 point scale: 2 points for a proper setup of the problem, 2 points for a correct

working of the problem (small mathematical or arithmetical errors will not detract from this part of the score), and finally, 1 point for a correct answer, with correct units (where applicable.) The points for working the problem are only available if you get full credit for the problem setup; the points for a correct answer are only available if you get full credit for working the problem.

- Neither I nor the paper grader will attempt to grade a homework question that is illegible or presented in a manner that is difficult to follow, we will simply give such a question a zero. Take pride in your work and make sure that your homework assignments are neat and legible.

- Exams will have two parts, 10 multiple choice questions (similar in level and type to the WebCT homwework questions) worth a total of 70 points, and 2 worked problems (similar to the textbook homework problems) worth 30 points.

- The final exam will be given during the university scheduled final exam period. **I do not schedule early times to take the final exam. I do not give late final exams for students who do not wake up in time for the final or who weren't sure when the day and the time of the final is.** All students are expected to take the final exam during the scheduled final exam period.

Grading Scale

A	85 and up
B+	83-84
B	75-82
B−	73-74
C+	71-72
C	58-70
C−	56-57
D	50-55
F	49 and below

Incomplete Policy: as per the policy stated in the catalog:

"The temporary grade of I (incomplete) is a conditional and temporary grade given when students (a) are currently passing a course or (b) still have a reasonable chance of passing in the judgment of the instructor, but for

non-academic reasons beyond their control have not completed a relatively small part of all requirements.

Students are responsible for informing the instructor immediately of the reasons for not submitting an assignment on time or not taking an examination. Students should understand that the only way to have an I changed to a passing grade is to fulfill course requirements in accordance with the conditions specified by the instructor. Students must contact the instructor of the course in which they receive an I grade to make arrangements to complete the course requirements. Students must not re-register for the courses in which their grade is currently recorded as an I. Even when the conditions for fulfilling the course requirements include participation in all or part of the same course in another semester, the student must not re-register for the course. After the course work is completed, the instructor will submit a change of grade form to change the I grade to the grade earned. Both grades, the original I and the earned grade, will appear on the transcript

The grade of I may not be changed to a grade of W, but may be changed only to another letter grade. As stated under Fulfillment of Grade Requirements for a Degree, all grades of I shall be computed as grades of F for purposes of calculating a student's cumulative grade point average for graduation.

Should the student not complete the course in the time allotted (a maximum of one year), a grade of F will be assigned and used for purposes of calculating a student's cumulative grade point average for graduation and also for determining eligibility for graduation with honors (i.e., an I grade that becomes an F, even if associated with a course taken during the freshman or sophomore year, will be counted as part of the student's last sixty-six hours)."

Additional Sources of Material

If you are interested in seeing more worked example problems, I suggest the following sources.

- Schaum's Outline of College Physics, ISBN: 0070089418

- 3,000 Solved Problems in Physics, ISBN: 0070257345

Addendum: Whenever possible, and in accordance with 504/ADA guidelines, the University of Houston will attempt to provide reasonable academic

accommodations to students who request and require them. Pleas call 713-743-5400 for more assistance.

Class Schedule

Tuesday	Thursday
8-22 Course Intro	8-24 Chapter 19 Electric Field
8-29 Chpt. 19 Electric Field	8-31 Chpt. 20 Electric Potential
9-5 Chpt. 20 Electric Potential	9-7 Chpt. 21 D.C. Circuits
9-12 Chpt. 21 D.C. Circuits	9-14 Chpt. 22 Magnetism
9-19 **Exam 1** Chpts. 19-21	9-21 Chpt. 22 Magnetism
9-26 Chpt. 23 Faraday's Law	9-28 Chpt. 23 Faraday's Law
10-3 Chpt. 25 Electromagnetic Waves	10-5 Chpt. 26 Geometric Optics
10-10 **Exam 2** Chpts. 22, 23,25	10-12 Chpt. 26 Geometric Optics
10-17 Chpt. 26 Geometric Optics	10-19 Chpt. 28 Physical Optics
10-24 Chpt. 27 Optical Instruments	10-26 Chpt. 27 Optical Instruments
10-31 **Exam 3** Chpts. 26-28	11-2 Chpts. 30-31 Quantum Physics
11-7 Chpts. 30-31 Quantum Physics	11-9 Chpts. 30-31 Quantum Physics
11-14 Chpts. 30-31 Quantum Physics	11-16 Chpt. 32 Nuclear Physics
11-21 Chpt. 32 Nuclear Physics	11-23 Thanksgiving
11-28 Chpt. 32 Nuclear Physics	11-30 **Exam 4** Chpts. 30-32

Final Exam: Wednesday, May 10, 2 pm