

Physics 1303

Introductory Mechanics

Fall 2014

Tuesdays and Thursdays 9:30am –10:50 am, 123 Fondren Science Building

Objective: Upon completion of this course the students will be able to demonstrate basic facility with the problem-solving methods related to mechanics including statics, dynamics, gravitation and relativity.

Student learning outcomes:

- 1) Students will be able to develop quantitative models appropriate to problems in Physics.
- 2) Students will be able to explain how the concepts and findings of science and technology in general, or of particular sciences or technologies shape our world.
- 3) Students will be able to develop quantitative models as related to the course subject matter.
- 4) Students will be able to formulate structured and logical arguments.
- 5) Students will be able to apply symbolic systems of representation.

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Text: *"Fundamental of Physics - Extended"* by Halliday, Resnick and Walker, 9th or 10th Edition. If you purchase the 9th edition WileyPLUS online, you will have access to the on-line text, study aids and homework assignments and can get the printed text for additional \$5-\$20. With the 10th edition you get even more sophisticated ORION online self-help system. The material in this course covers first 13 chapters (Vol.I) plus a chapter 37 from Vol.II discussing special relativity. That section will be covered extensively in the lectures and can be obtained from almost any introductory textbook. If you want to see the online system go to <https://www.wileyplus.com/>

Calculators: A scientific calculator is a must. Necessary functions are sin, cos, tan, exp, log, and roots, as well as the inverse operations. Email and TV reception capabilities are not required.

Prerequisites: I shall assume a working knowledge of algebra and trigonometry. A limited amount of calculus will be used. I will review the necessary calculus before I use it.

Quizzes and tests: There will be a closed book 15-minute quiz each week as marked (except when there is an exam scheduled). The material will be from the previous two lectures. There will be nine

quizzes. Two quizzes with lowest scores will be dropped from grading. Note: this includes all missed quizzes, doctor's appointments, and other emergencies. **No make up quizzes** will be given. There are three 1 hour-long tests during the semester, each from the material as marked in the syllabus. All quizzes and tests are closed book. You can use one "cheat sheet" with formulas written on both sides and a calculator. Cell phones must be switched off.

Final Exam: Final exam is scheduled for 2 hours. It will cover all material of the course and will be similar in style to the monthly tests.

Help Sessions: These are combined for both sections of PHYS 1303 and for PHYS 1307. All sessions are in 153 Fondren Science Building. The times will be determined within first week of classes. Additional tutoring help can be obtained from Learning Enhancement Center.

Grading: Teaching Assistants will grade all quizzes and tests. The final course grade will be determined as follows: Quizzes 25%, Tests 15% each, Final 30%. Grade boundaries: A > 90% > A- > 85% > B+ > 80% > B > 75% > B- > 70% > C+ > 65% > C > 60% > D+ > 55% > D > 50% > F.

Homework: Physics is not a spectator sport! Homework is assigned for each chapter. It should take you 3 hours each week read the textbook chapters and to solve all problems. I encourage a "read-ahead" philosophy. The homework will not be collected nor graded. WileyPlus online provides significant self-testing capabilities. You are encouraged to come to the help sessions.

Many of the quiz and exam problems are either variants or are taken directly from the homework. The online version of the textbook allows you to look up the solution. This is not a substitute for working out the problems on your own. You will find, that it is not sufficient to simply read through and by trial and error find the homework solution to understand the material. Information useful for problem solving and the mathematical formulas are listed in the Appendices at the end of the textbook.

Excused Absences for University Extracurricular Activities: Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalog.)

Disability Accommodations: Disability Accommodations: Students needing academic accommodations for a disability must first be registered with Disability Accommodations & Success Strategies (DASS) to verify the disability and to establish eligibility for accommodations. Students may call 214-768-1470 or visit <http://www.smu.edu/alec/dass.asp> to begin the process. Once registered, students should then schedule an appointment with the professor to make appropriate arrangements. **This applies to Tests only.**

Religious Observance: Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways to make up any work missed because of their absence. (University Policy No. 1.9.)

Comments on the textbook

For the PHYS1303 course I will use the extended version of the textbook Holliday, Resnick and Walker, Fundamentals of Physics, 10th edition Extended. However, the 9th edition (if you can get it) is fully compatible. All homework assignments are consistent between the two versions. I am told that the online version allows you to print out the text and check the solutions to the homework problems and check additional material e.g., videos of example problems and students solution manual. The course has been registered with WileyPLUS so you can register for this course online. However, the online access is not obligatory, as I will not collect homework. Here are the options as I understand them:

1. You can purchase WileyPLUS online. You will have full access to the online version of the textbook. You will be able to print pages from the text in the case that you want to read the book, but do not have internet access. In addition, you will have access to all the study aids and homework assignments.
2. You can purchase the new printed text in the bookstore with a WileyPLUS access code. This costs an additional \$5 - \$20 and will give you access to the online text, study aids and homework assignments.
3. You can purchase a used version of the textbook from a vendor of your choosing. If you do not want to use on-line tools you do not need WileyPlus.

Once you purchase WileyPLUS, you will have access to the tools for 365 days. If you take the second semester (electricity and magnetism) of the course this spring or summer, you will not need to repurchase WileyPLUS.