PHYS 1307 **General Physics I - Mechanics** **Spring 2018**

Course Overview

For life science majors. Covers vector kinematics, Newtonian mechanics, rotational motion, oscillations, waves, fluids, with examples from the life sciences. Pre or co- requisite: MATH 1337. This is an active-learning flipped classroom that implements teaching strategies learnt from physics education research. Students can expect to prepare before class, participate in class discussions, and interact with the instructor via TopHat web-based polling software.

Instructor Biography

Prof. Dalley has been teaching physics courses at SMU from non-science majors to graduate students since 2006. In 2013, Prof. Dalley received both an Outstanding Professor Rotunda Award and the Provost's Teaching Recognition Award. At SMU he also directs science outreach programs and professional development courses for high-school physics teachers.

Benefits of taking this course

- Acquire UC tags and satisfy your major's requirements
- Retake to improve your grade
- Gain transferable skills in problem solving
- Take advantage of this term's small class sizes
- Take advantage of an active-learning style course

UC "tags" and Student Learning Outcomes

Together with PHYS 1105 lab course, satisfies a Level I Pure & Applied Science Pillar, or a Science and Engineering Breadth requiremnent (UC16), and a Quantitative Reasoning Proficiency & Experience.

Learning Outcomes

1) demonstrate basic facility with the methods of scientific inquiry and problem-solving
2) explain how the concepts and findings of physics shape our world
3) develop quantitative models as related to the course subject matter
4) apply symbolic systems of representation
5) formulate structured and logical arguments

Class Meeting: Tu/Th 11:00 a.m. – 12:20 p.m.

Instructor: S. Dalley, Room 207 Fondren Science, sdalley@smu.edu
Office Hours: Mo 5:00 – 6:00 pm

Text: **Fundamentals of Physics**, 10th Edition (Wiley), by David Halliday, Robert Resnick, Jearl Walker

Website: http://www.physics.smu.edu/sdalley/1307_S18/1307home.htm

COURSE POLICIES

- The course webpage contains all information (the course does not use Canvas)

  http://www.physics.smu.edu/sdalley/1307 S18/1307home.htm

- You will need a device with wireless internet or text message capability in order to participate in classes. You will also need a simple scientific calculator.
- Communication via any method (phones, tablets, laptops, speech, gestures, writing, sharing, etc.) is not allowed within, from, or to the classroom during any graded in-class assessment. If you need to take or make an emergency call, please leave the room.
- This course operates a policy of zero tolerance toward **Academic Dishonesty** in any form in any survey, quiz or exam. It will usually result in an F grade for the course and a filing with the Dean of Student Life (Honor Code Violation).

Grading Policy

26 Pre-Class Surveys, **23%** of total grade

The 1st two surveys will not count (so you get some practice)
Late surveys cannot be credited, but the lowest survey score will be dropped.

11 Quizzes, **20%** of total grade

Lowest quiz score dropped, no make-up quizzes

11 Corrected Quizzes, **10%** of total grade

Lowest corrected quiz score dropped, late corrections not accepted, original quiz score counts for corrected quiz if no correction submitted.

Mid-term Exam: Quantitative Problems **10%** of grade, Conceptual Questions **6%** of grade

Final Exam: Quantitative Problems **20%** of grade, Conceptual Questions **11%** of grade

Absences for any reason will count toward your drops. Please ask me for advice as soon as possible if you are worried about your performance or have extenuating circumstances.

Grade Boundaries

These are fixed at

A > 90% > A - > 85% > B + > 80% > B >75% > B - >70% > C+ > 65% > C > 60% > D > 50% > F.

What you have scored on Surveys, Quizzes, and the Exams is what determines your grade, not rounding up, effort, attendance, grades in other courses, scores of other students, scholarship requirements, my opinion, your opinion, your desired career path, the orbit of Venus, etc.

PRE-CLASS SURVEYS

The classroom is flipped. You are required to spend time ***before*** class preparing for discussion of the topics as indicated on the syllabus. View the short Khan Academy links I post as an introduction in TopHat and then consult the relevant sections of the textbook in order to answer conceptual multiple-choice Surveys that are assigned in TopHat, as shown in the syllabus. Surveys must be submitted by 10:00 am on the due date (this is to give me time to look at the results before class and adapt the class to clarify any confusions).

Recommended Time Burden = 1-2 hours per class

HOMEWORK

Suggested homework problems are shown on the syllabus for practice in preparation for in-class quizzes. **Try the problems yourself**. Googling for solutions is very poor preparation and literally pointless since no credit is given for homework. If you find the homework problems too difficult, try some of the relevant problems in ORION on WILEYPLUS (the online learning aid that comes with the course textbook) to build your proficiency, or consult some of the other Khan Academy links on problem-solving.

Recommended Time Burden = 3 hours per week

QUIZZES

At the beginning of each week there is a 25-min in-class quiz on the material from the previous week. Most of the credit in the quizzes is for clear working. You may use only the standard orange formula sheet provided and your own calculator. All data are provided in the questions.

You will receive your graded quiz back and have the opportunity to correct it in your own time for credit, provided it is submitted before the next quiz. Correction sheets must be appended to your original quiz**.** The original quiz score will count for the corrected-quiz credit if no correction is submitted.

EXAMS

Mid-Term and Final exams are multiple choice and will consist of quantitative problems similar to the quiz/homework problems and conceptual questions *very* similar to those covered in class via TopHat. Credit for working is not given. You may use only the standard orange formula sheet provided and your own calculator. All data are provided in the questions.

ACCOMODATIONS

Disability Accommodations: Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit http://www.smu.edu/Provost/ALEC/DASS to begin the process. Once registered, students should then schedule an appointment with the professor as early in the semester as possible, present a DASS Accommodation Letter, and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

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 of making up any work missed because of the absence. (See University Policy No. 1.9.)

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 Catalogue)