

Course Overview

For science and engineering majors. Covers vector kinematics, Newtonian mechanics, gravitation, rotational motion, oscillations. This is an active-learning course in which students participate in class through small group discussion and with cooperative problem-solving.

Prerequisite: MATH 1337.

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

- Quickly acquire UC tags and satisfy your major's requirements
- Retake to improve your grade
- Gain transferable skills in problem solving
- Take advantage of Jan term's small class sizes

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 requirement (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: 9:00 a.m. – 11:50 a.m., 1:00 – 3:50 p.m.
Daily Routine: 9:00 - 9:50 Quiz; 10-10:50, 11-11:50 Concept classes; lunch break; 1-1:50, 2 - 2:50 Concept Classes; 3 – 3:50 Co-op problem solving

Instructor: S. Dalley, Room 207 Fondren Science, sdalley@smu.edu

Office Hours: 4:00 – 6:00 pm each day

Text: **Fundamentals of Physics, Vol 1**, 10th Edition (Wiley), by David Halliday, Robert Resnick, Jearl Walker ISBN 9781118441497 - eBook & access code for WileyPlus

Website: <http://www.physics.smu.edu/sdalley/1303/J18home.htm>

COURSE POLICIES

- The course homepage contains all information you will need (bookmark it now):
<http://www.physics.smu.edu/sdalley/1303/J18home.htm>
- You will need a simple scientific calculator.
- I will use your official SMU e-mail address to communicate with you – please check it!
- Academic Dishonesty will result in a course F grade and filing with the Dean of Student Life. Phones and computers must be turned off and put away during graded in-class assessments. If you need to take or make an emergency call, please leave the room.

Date	Topic	
before course	Math pre-requisites: Math Appendix - Geometry, Quadratic, Trig Funcs, Pythagoras, Derivatives & integral 1-9; Vectors Chap 3.1 - 3.2	
Mo 1/8	Measurement	1.1 - 1.3
	Straight Line Motion I	2.1 - 2.3
	Straight Line Motion II	2.4
	Straight Line Motion III	2.5- 2.6
Tu 1/9	Vectors	3.1-3.2
	Motion in Two Dimensions I	4.1 - 4.3
	Motion in Two Dimensions II	4.4
	Motion in Two Dimensions III	4.6 - 4.7
We 1/10	Force and Motion I	5.1-2
	Force and Motion II	5.3
	Force and Motion III	6.1-2
	Force and Motion IV	4.5, 6.3
Th 1/11	Kinetic Energy & Work I	3.3 (dot), 7.1 - 7.3
	Kinetic Energy & Work II	7.4-7.6
	Potential and Conserved Energy I	8.1 - 8.3
	Potential and Conserved Energy II	8.4-8.5
Fr 1/12	Center of Mass of systems	9.1 - 9.2
	Linear Momentum I	9.3 - 9.4
	Linear Momentum II	9.5 - 9.7
	Linear Momentum III	9.8
Tu 1/16	Rotational Motion I	10.1 -10.3
	Rotational Motion II	10.4- 10.7
	Rolling & Angular Momentum I	3.3 (cross), 11.1-4
	Rolling & Angular Momentum II	11.5-11.8

	Equilibrium	12.1-12.2
	Gravitation I	13.1 - 13.4
	Gravitation II	13.5
We 1/17	Gravitation III	13.6 - 13.7
	Oscillations I	15.1- 15.2
	Oscillations II	15.3-15.4
Th 1/18	FINAL EXAM	

ASSESSMENT

- 30 Pre-Class Surveys, **26%** of total grade
First 4 surveys are for practice (not for credit), late surveys cannot be accepted
- 6 Quizzes, **25%** of total grade
Lowest quiz score dropped (including absence for any reason), no make-up quizzes
- 6 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.
- Final Exam: Problem Solving **25%** Conceptual Questions **14%** of total grade

Grade Boundaries

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 Final 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

You are required to spend time *before* class preparing for discussion of the topics as indicated on the syllabus. I recommend you consult the relevant online sections of the textbook in WILEYPLUS. In addition, you can view the *Video* and *Animated Illustrations*, *Video Mini-lectures*, and *Demonstration Videos* according to your taste. Multiple-choice Surveys are assigned, as shown in the syllabus, which must be submitted for credit by 9 a.m. on class day at www.pollev.com under username **dalleyphysics** (you will then need to login yourself).

Recommended Time Burden = 2 hour per class day

HOMEWORK

Suggested homework problems are shown on the syllabus. These should be used to practice in preparation for in-class quizzes. If you find the homework problems too difficult, try some of the relevant problems in ORION on WILEYPLUS to build your proficiency. You can also consult some of the *Video Sample Problems*.

Recommended Time Burden = 2 hours per quiz

QUIZZES

At the beginning of each class day there is a 50-min in-class quiz on the material from the previous class day. 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 within one day of the quiz being returned. 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

The final exam is 3 hours multiple choice. $2/3$ of the credit will be for problems similar to the quiz/homework problems. $1/3$ of the credit will be for conceptual questions *very* similar to those done in class. 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)