

Course Syllabus

Course Information

PHYS 2325.002, Mechanics, Fall 2015, TR 2:30-3:45, Room SLC1.102

Professor Contact Information

Dr. Michael Kesden, Assistant Professor of Physics

Office: PHY 1.908

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Office hours: Mondays, 3:30 – 5:30 pm, PHYS 1.908

TA: Daniel Codoluto

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Office hours: Wednesdays, 1 – 3 pm, PHYS 1.602

You are encouraged to take advantage of the office hours to discuss quizzes, homework, and exams.

Help with both math and physics is also available through the **Student Success Center**:

<http://www.utdallas.edu/studentsuccess/>

You can stop by their **Math Lab**:

<http://www.utdallas.edu/studentsuccess/mathlab/index.html>

in MC3.606 (McDermott Library) for free walk-in tutoring.

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Prerequisite: MATH 2413 Differential Calculus or MATH 2417 Calculus I

Corequisites: MATH 2414 Integral Calculus or MATH 2419 Calculus II and PHYS 2125 Physics Laboratory I

Course Description

3 Credit Hours. Calculus based. Basic physics including a study of space and time, kinematics, forces, energy and momentum, conservation laws, rotational motion, torques, and harmonic oscillation. Two lectures per week.

Required Textbooks and Materials

1. (REQUIRED) Mastering Physics Student Kit which provides access to <http://www.masteringphysics.com>. This can be purchased directly on the site for ~\$66, or it comes with new versions of the text.

Course ID: PHYS2325KESDENF15A

If signing up online, choose “University Physics with Modern Physics,13e”

2. (Recommended text) University Physics Volume 1, 13th edition, by Young & Freedman. Bear in mind that you will need volume 2 for PHYS 2326. The 11th, 12th, and 14th editions are also good. See additional notes below.

*The bookstore had a package with volume 1 and 2 loose leaf with the student kit for a discounted price. Don't know if this is still available.

**THE CHEAPEST OPTION IS TO GO ONTO MASTERINGPHYSICS.COM AND GET AN E-VERSION OF THE TEXT. ANY PHYSICS TEXT WILL WORK (I used Halliday and Resnick and Kleppner and Kolenkow) FOR MECHANICS SINCE THE EQUATIONS HAVEN'T CHANGED THAT MUCH SINCE NEWTON...

Other Course Materials: Calculator with trigonometry capabilities but no graphing capabilities & no text function. (\$10-\$20) Really, no phones.

Calendar

Session	Contents	Chapters	Date
1	Physical Quantities and Vectors	1	8/25
2	Physical Quantities and Vectors	1	8/27
3	1D Motion	2	9/1
4	1D Motion	2	9/3
5	2 and 3D Motion	3	9/8
6	2 and 3D Motion	3	9/10
7	Newton's Laws of Motion	4	9/15
8	Newton's Laws/Applying Newton's Laws	4-5	9/17
9	Applying Newton's Laws	5	9/22
10	Applying Newton's Laws	5	9/24
11	Review		9/29
12	Exam 1	1 through 5	10/1
13	Work and Kinetic Energy	6	10/6
14	Potential Energy and Energy Conversion	7	10/8
15	Potential Energy and Energy Conversion	7	10/13
16	Momentum, Impulse & Collisions	8	10/15
17	Momentum, Impulse & Collisions	8	10/20
18	Review		10/22
19	Exam 2	6, 7, 8	10/27
20	Rotation of Rigid Bodies	9	10/29
21	Rotation of Rigid Bodies	9	11/3
22	Dynamics of Rotational Motion	10	11/5
23	Dynamics of Rotational Motion	10	11/10
24	Dynamics of Rotational Motion/Review	10	11/12
25	Exam 3	9 & 10	11/17
26	Periodic Motion	13	11/19
27	Periodic Motion	13	12/1
28	Waves	15	12/3
29	Waves	16	12/8

30	Exam 4 (Final Exam Period)	13, 15, 16	12/15?
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Grading Policy

Learning Evaluation (2% for attending both + 1% bonus)
Homework (23%) (Drops 15% per day late)
3 Exams (75%) (non-cumulative)
*Top 3 of 4 exams count 25% each (5% bonus for 4th exam).

First exam will likely occur Oct. 1.
Second exam will likely occur Oct. 27.
Third exam will likely occur Nov. 17.
Fourth exam will occur on with the final exam schedule, tentatively Dec. 15.

Technical Support

If you experience any problems with your UTD account you may send an email to: assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.

Course & Instructor Policies

Cell Phones: Please silence during class.

Exams: Exams will involve multiple choice and long-answer problems. There will be NO make-up exams, so be sure to make it to at least 3 of the exams.

Homework: Homework will be completed online using “Mastering Physics”. Students can study together but must complete the homework individually.

Laptops: Please silence and only use them for taking notes.

Student Learning Objectives/Outcomes

- Add and subtract vector quantities, perform scalar and vector products, determine vector magnitudes and angles relative to a reference frame.
- Demonstrate how position, velocity, acceleration and time are related mathematically, particularly under conditions of constant acceleration.
- For 2D and 3D systems, apply position, velocity and acceleration as vector quantities, including situations of circular motion and relative velocity.
- Understand Newton’s three laws relating forces and motion.
- Apply Newton’s laws to predict motion for various geometries and for problems involving friction.
- Understand and use conservation of energy, work, kinetic energy, and power.
- Derive force from potential energy.
- Interrelate momentum and impulse; understand conservation of momentum; apply momentum to collisions.

- Understand rotational motion, angular momentum, moments of inertia and how they relate to kinetic energy.
- Understand simple harmonic motion.
- Understand properties of waves such as wave functions, dynamics, power, and superposition.

Learning Evaluation

In an effort to evaluate the effectiveness of our physics instruction, we are conducting two multiple-choice tests to probe student performance at the beginning and end of this course. You will receive 2% of course credit by simply taking both tests. The second test grade will be based on performance, and you can earn up to a 1% bonus on your final grade. Each test is a 50 minute, multiple choice exam.

1st test: Monday, Sep. 8 to Monday Sep. 21.

2nd test: Monday, Nov. 9 to Friday Nov. 20.

You are asked to do two quizzes as part of your introductory physics course. The quizzes consist of multiple-choice questions and are useful to the department in gathering information about the effectiveness of our courses.

No pens or pencils are needed and no books, notes, calculators or communications devices are allowed. The quizzes must be taken in the Student Success Center in the basement of the McDermott Library Test Center at MC 1.304 and a specialized browser (the Respondus Lockdown Browser) must be used. (This browser is installed on the computers in the computer lab.) Seats at the test center can be reserved at:

www.utdallas.edu/studentsuccess/testingcenter

These quizzes are on an eLearning site called “[\(MERGED\) PHYS 1301 & 2325-F15](#)”. If you don’t have a link to this site then you can be enrolled if you go to the Test Center at MC 1.304 and give the proctor your course number, section number and your NetID (usually three letters and six numbers). Please don’t try to contact anyone through eLearning!

A quiz will finish 50 minutes after you click ‘Begin Assessment’ (but the test might not even take that long). You must complete the test in a single interval 50 minutes or less.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD printed publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Series 50000, Board of Regents, The University of Texas System*, and in Title V, Rules on Student Services and Activities of the university’s *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and

regulations (SU 1.602, 972/883-6391) and online at <http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html>

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic Dishonesty, any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Copyright Notice

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials, including music and software. Copying, displaying, reproducing, or distributing copyrighted works may infringe the copyright owner's rights and such infringement is subject to appropriate disciplinary action as well as criminal penalties provided by federal law. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act. As a UT Dallas student, you are required to follow the institution's copyright policy (Policy Memorandum 84-I.3-46). For more information about the fair use exemption, see <http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm>

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures

must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.

Student AccessAbility

The goal of Student AccessAbility is to provide students with disabilities equal educational opportunities. Student AccessAbility provides students with a documented letter to present to the faculty members to verify that the student has a disability and needs accommodations. This letter should be presented to the instructor in each course at the beginning of the semester and accommodations needed should be discussed at that time. It is the student's responsibility to notify his or her professors of the need for accommodation. If accommodations are granted for testing accommodations, the student should remind the instructor five days before the exam of any testing accommodations that will be needed. Student AccessAbility is located in the Student Services Building, room 3.200. Phone: 972-883-2098. Fax: 972-883-6561; disabilityservice@utdallas.edu. Office hours are Monday – Thursday, 8:30 a.m. to 6:30 p.m., and Friday 8:30 a.m. to 5:00 p.m. Guidelines for documentation are located on the Student AccessAbility <http://www.utdallas.edu/studentaccess/documentation/>

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the Professor.