

Course Syllabus

(As of 08/20/2016)

- **Course Information**

Course number: PHYS 2325.001 (84350)

Course title: Mechanics

Term: Fall 2016

Times and room: T&Th: 10:00am - 11:15am, SLC 1.102

- **Contact Information**

Instructor: Prof. Fan Zhang

Office and phone: PHY 1.618, 972-883-3509

Email address: zhang@utdallas.edu

Instructor's office hours: Thursday 4 pm - 6 pm, or by appointment

TA's office hours: Office: PHY 1.602

Monday: 9 - 11am (Wu, Hanlin);

Tuesday: 9 - 10am (Wu, Hanlin) 3 - 4pm (Hou, Junpeng);

Wednesday: 12:30 - 2pm (Patel, Ruskin);

Thursday: 10 - 11:30am (Patel, Ruskin);

Friday: 9 - 11am (Hou, Junpeng)

- **Course Pre-requisites**

1st semester Calculus

- **Required Textbooks and Materials**

University Physics, 13th edition or newer, by Young and Freedman.

- **Course Description**

1. 3 semester credit hours.
2. Calculus based.
3. Basic physics including a study of space and time, kinematics, forces, energy and momentum, conservation laws, rotational motion, torques, and harmonic oscillation.

- **Student Learning Objectives/Outcomes**

1. Uncertainties, significant figures, and scientific notations; addition and subtraction of vectors; scalar and vector product of vectors.
2. Concepts of time, position, velocity, acceleration in 1D, and their mathematical relations.
3. Velocity and acceleration in 2D and 3D; circular motion and relative velocity.
4. Concept of force; three Newton's Laws relating force with motion.
5. Application of Newton's Laws in particle equilibrium and dynamics.
6. Concepts of work, kinetic energy, power, and their relations.
7. Concept of potential energy and its relation to force.
8. Concepts of momentum and impulse; use momentum conservation in collision problems.
9. Velocity, acceleration, and energy in rotational motion.
10. Relating force with motion in rotational motion.
11. Newton's law of gravitation; relating gravitational force with motion.
12. Simple harmonic motion.
13. Mathematical description of waves, including velocity, period, frequency, phase, energy and superposition.

- **Calendar**

We will cover Chapters 1-15 of the textbook. Approximately, there will be two lectures for each topic mentioned in the above Learning Objective.

There will be four exams and a couple of review lectures.

- **Grading Policy**

1. Homework: **25%** (Late homework graded with penalty, drops 20% per day, see below for assignment methods)

2. Exams: 25%+25%+25% = 75% (to choose the best two midterms + the final)
3. In class quizzes: 0%-5% bonus
4. Learning Evaluation: 4% bonus (see below for details)
5. Grade scale
 - 90-104 A (A+, A, A-)
 - 80-89.9 B (B+, B, B-)
 - 70-79.9 C (C+, C, C-)
 - 60-69.9 D (D+, D, D-)

- **Homework**

Homework assignments are given on the website:

<http://www.masteringphysics.com>

The access can be purchased on the website for ~ \$66, or it comes with new versions of the textbook.

The course ID for this class is: **mechanics2016zhang**

The course title is: **Mechanics, UT Dallas, Fall 2016, PHYS 2325.001**

(Make sure the ID and name you give the website match your ID and name of record.)

- **Exams**

1. Exam schedules:

(i) midterm:	10/11/2016 Tuesday	SLC 1.102	10 am - 11:15 am
(ii) midterm:	10/27/2016 Thursday	SLC 1.102	10 am - 11:15 am
(iii) midterm:	11/17/2016 Thursday	SLC 1.102	10 am - 11:15 pm
(iii) final exam:	12/15/2016 Thursday	SLC 1.102	11 am - 01:45 pm

1. Exams will involve multiple choice and long answer problems. Makeup exams will only be offered in the case of **documented reasons** or exceptional personal circumstances. Makeup exams will be distinct from normal exams and will only be offered once at the end of the semester.
2. Calculators will be necessary for all exams. Graphing calculators and programmable calculators will not be allowed in the exams. A little scientific calculator that has trig functions can be obtained inexpensively and should be all that is used in the exams.
3. To receive full credit for long answer problems, show all work instead of just the correct answer.

4. All exams will be closed book. Formulas may or may not be provided with the exam. Exams will cover both in-class examples and homework problems.

- **Learning Evaluation (two quizzes)**

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, by probing your performance before and after the course. The two tests will account for 2% of your final grade. You will receive the full 2% by simply taking both tests. You can earn an additional 2% bonus if you score above the average in the 2nd test.

No pens or pencils are needed and no books, notes, calculators or communications devices are allowed. Both quizzes must be taken in the Test Center at MC 1.304. These quizzes are on the following eLearning site: “(MERGED) PHYS 1301.701 - PHYS 2325.701-F16”. (These eLearning sites might have slightly different names depending on the display settings that are used.) If you do not 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).

Your first quiz (pretest) will be available **from 8:30 on Tuesday Sept. 6th to 9:00 pm on Monday Sept. 19th**. The second quiz (posttest) will be available **from 8:30 on Monday Nov 28th to 9:00 pm on Monday Dec. 12th**. You need to reserve a seat in the Testing Center for the quizzes at <http://www.utdallas.edu/studentsuccess/testingcenter/index.html>. The Testing Center's operational hours can be found at <http://www.utdallas.edu/studentsuccess/testingcenter/>.

You can do the quiz whenever the center is open. A quiz will finish 1 hour after you click Begin Assessment (but the test might not even take that long). You must complete the test in a single interval 1 hour or less.

Please directly contact Dr. Paul MacAlevey by sending emails to the address paulmac@utdallas.edu if you have any question on the quizzes.

- **Other policies**

1. **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 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, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3, 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).

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.

2. **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 includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

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.

3. **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.

4. **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.

5. **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 Deans 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 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 in interpreting the rules and regulations.

6. Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semesters 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.

7. Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m. The contact information for the Office of Disability Services is: The University of Texas at Dallas, SU 22, PO Box 830688, Richardson, Texas 75083-0688, (972) 883-2098 (voice or TTY).

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities.

The college or university may need to provide special services such as registration, notetaking, or mobility assistance.

It is the students' responsibility to notify his/her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

8. 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.

9. Campus Carry

The University's concealed handgun policy is posted on the campus carry website: <https://www.utdallas.edu/campuscarry/>

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