

Physics 1303

Introductory Mechanics

SMU Fall 2011

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 methods and approaches of scientific inquiry and to solve problems related to classical mechanics including statics, dynamics, gravitation, oscillations and fluids.
- Instructor:** Richard Guarino
Office hours: Mon. 11 am-noon, 26A Fondren ; other times by appointment.
Telephone: (214) 768-4961
E-mail: rguarino@physics.smu.edu
- Teaching Assistants:** Farley V. Ferrante
Office hours: Wednesday and Thursday 6 - 8 pm, 60 Fondren
Wang Bowen
Office hours: Thursday 6 - 8 pm, 60 Fondren
Zhao Xiandong
Office hours: Wednesday 6 - 8 pm, 60 Fondren
- Help Sessions:** TBD
- Text:** Halliday, Resnick, Walker: *Fundamentals of Physics* (9th Ed.), Vol. 1 (Ch. 1-17)
- URL's:** Course: <http://www.physics.smu.edu/rguarino/1303fall2011/>
WileyPlus: <https://edugen.wiley.com/edugen/secure/index.uni>
- Course Description:** This course is intended as a calculus-based introduction to classical mechanics. The goal is for the student to gain an understanding of the relationship between force and motion embodied in Newton's laws and to understand how to apply these laws to solve physical problems.
- Topics to be studied include: *Measurement, Vectors, Kinematics, Projectile motion & uniform circular motion, Newton's laws of motion, Work, energy, & conservation of energy, Linear momentum, Rotational motion, Torque & angular momentum, Equilibrium, Gravitation, Oscillations and Fluids.*
- Throughout the course, there will be an emphasis on in-class problem solving using concepts, principles, techniques, and mathematical methods similar to that required on homework and exams. A working knowledge of geometry, algebra, and trigonometry is expected. Calculus I is a prerequisite but may be taken concurrently to Physics 1303.

Read and Study: You will be expected to complete a read and study assignment before each class. The assignment will be available on the [WileyPLUS](#) website and will include material from the chapter and several short questions.

Homework: Homework will be assigned each week in [WileyPLUS](#) and is due the following week; due dates will be published with each assignment. Solutions will not be provided outside of [WileyPLUS](#). You are encouraged to attend the help sessions, discuss your work with a study group and use office hours if you have difficulty.

Evaluation:

Exam 1	25%
Exam 2:	25%
Final Exam:	25%
Homework:	15% (Drop 2 lowest)
Quizzes:	10% (Drop 2 lowest)

Exams: All exams are closed book. You may use one formula sheet written on both sides and a calculator. Cell phones must be switched off.

Schedule:

08/23 : Introduction and Pretest.
08/25 : Measurement and One-dimensional Motion. Chapters 1 and 2.
08/30 : One-dimensional Motion. Chapter 2.
09/01 : Vectors. Chapter 3.
09/06 : Two-dimensional Motion. Chapter 4.
09/08 : Two-dimensional Motion. Chapter 4.
09/13 : Newton's Laws. Chapter 5.
09/15 : Newton's Laws. Chapter 5.
09/20 : More on Newton's Laws. Chapter 6.
09/22 : More on Newton's Laws. Chapter 6.
09/27 : **Exam 1.**
09/29 : Kinetic Energy and Work. Chapter 7.
10/04 : Kinetic Energy and Work. Chapter 7.
10/06 : Potential Energy and Conservation of Energy. Chapter 8.
10/11 : Fall Break – No Class
10/13 : Potential Energy and Conservation of Energy. Chapter 8.
10/18 : Center of Mass and Linear Momentum. Chapter 9.
10/20 : Center of Mass and Linear Momentum. Chapter 9.
10/25 : Rotation. Chapter 10.
10/27 : Rotation. Chapter 10.
11/01 : **Exam 2.**
11/03 : Rolling, Torque, and Angular Momentum. Chapter 11.
11/08 : Rolling, Torque, and Angular Momentum. Chapter 11.
11/10 : Rolling, Torque, and Angular Momentum. Chapter 11.
11/15 : Equilibrium and Elasticity. Chapter 12.
11/17 : Equilibrium and Elasticity. Chapter 12.
11/22 : Gravitation. Chapter 13.
11/24 : Thanksgiving – No Class
11/29 : Gravitation. Chapter 13.
12/01 : Fluids & Oscillations. Chapters 14 & 15.
12/06 : Review (Optional)
12/09 : **Final Exam 8am-11am**

University Honor Code:

The student code of conduct can be found in the 2011 - 2012 Student Handbook which is available on the SMU website (http://smu.edu/studentlife/studenthandbook/PCL_05_HC.asp). All students will be expected to adhere to it. Any student found cheating or plagiarizing another's work will be given a zero for that assignment and a complaint will be filed through the Vice President for Student Affairs Office.

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> to begin the process. Once registered, students should then schedule an appointment with the professor to make appropriate arrangements.

University Policy on Religious Holidays:

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) You must schedule your make-up work with the professor at least 1 week in advance of the absence. All work must be completed in advance of the absence - no exceptions.

Important Dates:

Official University Calendar: <http://smu.edu/registrar/Calendar/calendar11-12.asp>