



COURSE TITLE/SECTION: Physics 1321 University Physic I/Class Number #####

TIME: class time and days

LOCATION: Building and room number

FACULTY: Professor's name

OFFICE HOURS: Day and time and by appointment
Science and Research #1, Rm. ####

E-mail: email@uh.edu

Phone: (713) 743-3###

FAX: (713) 743-3589

I. Course: Physics 1321 - University Physics I

A. Catalog Description: Primarily for science and engineering majors. Mechanics of one- and two-dimensional motion, dynamics, energy, momentum, rotational dynamics and kinematics, statics, oscillations, and waves.

B. Prerequisites: Credit for or concurrent enrollment in [MATH 1432](#), Calculus II. Credit may not be applied toward a degree for University Physics I, [PHYS 1321](#) and General Physics I, [PHYS 1301](#).

II. Course Objectives: The objective of this course is to learn the principles of mechanics through application of Newton's laws, understand the concept of energy and be able to apply these concepts to describe the motion of objects.

Upon completion of this course, students will be able to:

1. master the physical concepts of force and energy;
2. be able to apply these to obtain solutions to technical problems;
3. use this scientific foundation to continue studies in more advanced courses in science and engineering.

Other learning outcomes include:

1. Students completing this course will be able to convey knowledge of the principles of physics and be able to use these principles to solve problems.
2. Students will be able to take a real life problem and use physical principles and mathematical tools to describe the problem.

III. Course Content: This course will cover chapters 1-16 which include the following topical areas:

1. Vectors
2. Newtonian Mechanics: Motion in 1-D, 2-D and 3-D
3. Newton's Laws: Force and Motion
4. Work and Energy
5. Momentum and Collisions
6. Systems of Particles
7. Circular Motion
8. Rotational of Rigid Bodies
9. Gravitation
10. Solids and Fluids
11. Oscillations
12. Waves and Sound

IV. Course Structure:

The web address for the class is www.yourclasswebaddress.

V. Textbooks:

***University Physics with Modern Physics*, 13th edition, by Young and Freedman/Sears and Zemansky.** Binder version with access code to *Mastering Physics* is available at the UH bookstore. The access code with or without an e-book is available at www.pearsonmastering.com. See the course website for more options for purchasing the textbook.

VI. Course Requirements

- A. Reading Assignments:** Reading quizzes covering the material from the reading assignment, consisting of 2-3 questions/problems, will be assigned over Blackboard for each chapter. The quizzes will be available at least 24 hours before they are due and they will be due by the beginning of the lecture time. There will be a time limit for taking the quiz and you will be allowed 2 attempts for each quiz. Solutions for the quizzes will be discussed during the lecture and will be posted on the class website.
- B. Homework Assignments:** (See **Pearson Mastering Physics** for HW assignments) 10 or more **homework** problems will be assigned at the beginning of each chapter and will be due approximately one week from that date. Late homework is only accepted with a valid excuse. (www.pearsonmastering.com)
- C. Exams:** There will be one **diagnostic exam**, three **regular exams** and a **final exam** for a total of five exams for the class. The **required diagnostic exam** for this course will test your basic mathematical skills in algebra, geometry, trigonometry, calculus and word problem solving. The exam consists of 20 multiple choice questions. It is a one hour exam

and no calculators are allowed. The exam will be administered by CASA Testing Center **January 20th – 30th**. You can log onto the CASA website to make a reservation at <http://casa.uh.edu> or you may go to room 222 Garrison Gym. You will be able to reserve a spot to take the exam approximately one week before the exam opens.

The diagnostic exam is worth 3% of your final grade for the course. If you score above 70%, you should be well prepared to pass the course, 51 - 70%, you should review algebra, trigonometry and pre-calculus, 50% and below, you should consider dropping the course or re-enrolling once you have improved your math and problem solving skills. **YOU DO NOT NEED TO SEND PROOF OF PREREQUISITE FOR THIS COURSE.**

Optional: If you score below 65% on the diagnostic exam, you can take a math tutorial to increase your diagnostic exam score to 65% but no greater. You must complete all tutorial sub-tests as well as the final test with a score of 75% or greater.

OR

If you just wish to improve your math skills, you can complete a math tutorial which has been set up by the Department of Physics.

The math tutorial course is set up through My Readiness Test, an online math tutorial offered by the publisher of the textbook for the course. If you purchased a textbook from the UH Bookstore, you will receive a free access code to My ReadinessTest. If you did not purchase your textbook through the UH bookstore, you can purchase a code for My Readiness test for \$15 through the publisher's website listed below.

http://www.myreadinesstest.com/support/mpt/contactus_stu.htm

See the Department of Physics website after December 1st for more details on how to register and access the math tutorial through My Readiness Test

<http://www.phys.uh.edu/docs/phys/resources/Phys%201321-How%20to%20Register%20and%20Enroll%20in%20MyReadinessTest-S15.pdf>

Statistics: A study on 543 student enrolled in Phys 1301 at UH, showed that of the students who scored below 65% on the diagnostic exam, 78% of those completing the math tutorial passed the course while only 45% of those who did not complete the math tutorial passed the course. These statistics show that it may be your advantage to complete the math tutorial to increase your chances of passing the course.

The **regular exams** will be given during the scheduled examination period for this course which is on Fridays from 5:30 – 7:00 pm (see note on the course listing). The regular exams will cover 2-5 chapters and will consist of 10-20 multiple choice/free response questions/problems. Partial credit will be given. Each regular exam will be worth 15 % of your final grade for a total of 45% for the three regular exams. The **final exam** will be comprehensive covering all chapters covered for the course. The format of the final exam will be similar to that of a regular exam. This exam will be given during the University scheduled time.

There are no makeup exams for this course. The lowest exam score will be replaced by the final exam score if the final exam score is higher.

D. Teamwork Component: A team work component will be evaluated in this course by one of the two methods below.

- Concept test will be administered during lecture for each chapter. Answers for the concept tests will be submitted using a personal remote system (clicker). Students will discuss these questions in teams of 2-3 students as a method of peer instruction. Each clicker costs \$40 plus tax. For the detailed Clicker purchasing information, please contact

Barnes & Noble in the UC
4800 Calhoun Rd.
126 University Center
Houston, TX 77204
Phone: 713-748-0923

NOTE: You can use your book loan to buy a clicker through the bookstore. **See Blackboard for clicker registration instructions.**

Notes: For all exams you may use any type of calculator. A formula sheet will be provided with all necessary formulas needed to solve the problems. A listing of homework assignments, with due dates and exam dates with the chapters to be covered on the exam can be found on my website in Blackboard. Solution sets for all homework, quizzes and exams will also be posted there 2-3 days after they have been turned in to me.

VII. Evaluation and Grading

- 5% Teamwork Component**
- 12% Reading Quizzes**
- 10% Homework**
- 3% Diagnostic Exam**
- 15% Regular Exam I**
- 15% Regular Exam II**
- 15% Regular Exam III**
- 25% Final Exam (Day, time and location)**

Policy on grades of I (Incomplete): The temporary grade of I (incomplete) is a conditional and temporary grade given when students (a) are currently passing a course or (b) still have a reasonable chance of passing in the judgment of the instructor, but for non-academic reasons beyond their control have not completed a relatively small part of all requirements. Incompletes will be given only when documentation has been submitted to support the need to receive an incomplete, i.e., medical statements.

VIII. Consultation

My office is located in room ### of Science and Research #1. My mailbox is located in the Physic office, room 617 in Science and Research # 1. My office hours will be from **(list days and times)**

IX. Bibliography

References: Fundamentals of Physics, Halliday, Resnick, and Walker; The Feynman Lectures on Physics, R. Feynman, R.B. Leighton, and M. Sands

Addendum: Whenever possible, and in accordance with 504/ADA guidelines, the University of Houston will attempt to provide reasonable academic accommodations to students who request and require them. Please call 713-743-5400 for more assistance.

Academic Honesty: It is each student's responsibility to read and understand the Academic Honesty Policy found at <http://catalog.uh.edu/content.php?catoid=6&navoid=1025>.

Religious Holy Days: Students whose religious beliefs prohibit class attendance or the completion of specific assignments on designated dates may obtain an excused absence. To do so, please make a written request for an excused absence and submit it to your instructor as soon as possible, to allow the instructor to make arrangements. For more information, see the Student Handbook. <http://catalog.uh.edu/content.php?catoid=4&navoid=791>.

Standard Disclaimer: This syllabus is subject to change at the discretion of the instructor.