

UNIVERSITY of HOUSTON

DEPARTMENT OF PHYSICS

COURSE TITLE/SECTION: Physics 1301 Introductory General Physics I/Class Number #####

TIME: Time and Days

LOCATION: Online only

FACULTY: Instructor name

OFFICE HOURS: Scheduled times and connection info

E-mail: Instructor email

Phone: (713) 743-####

Physics 1301 Introductory General Physics I

Catalog Description: First semester of a two-part non-calculus-based course covering mechanics of one- and two-dimensional motion, dynamics, energy, momentum, rotational dynamics and kinematics, statics, gravity, oscillations, waves and fluids.

Primarily for majors other than physics and engineering. Credit may not be applied toward a degree for both Phys 1301 and University Physics I, Phys 1321.

Prerequisites: Math 1330

Course Structure:

Computer and internet access are required for this course.

For the current list of minimum technology requirements and resources, see <http://www.uh.edu/online/tech/requirements>. For additional information, contact the office of Online & Special Programs at UHOnline@uh.edu or 713-743-3327.

Blackboard, Mastering Physics, Microsoft Teams and possibly other online resources will be required for this course. Students may also be required to send scans of paper documents (i.e. using a smart phone with camera or scanner). See <https://uh.edu/online/students/remote-learning/> for more information on remote learning tools.

Mastering Physics course ID, Teams connection information, and other relevant information specific to your course here.

Textbook: *Physics, Fifth Edition*, James S. Walker. If you purchase the textbook from the UH bookstore, it will include an access code for Mastering Physics. You can also purchase a standalone access code for Mastering Physics from the UH bookstore or directly from the publisher (Pearson).

Course Requirements:

- A. **(OPTIONAL) Warm up Assignments:** Reading quizzes covering the material from the reading assignment, consisting of 2-3 questions/problems, will be assigned online. 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:** Homework will be completed online using Mastering Physics. Ten or more homework problems will be assigned at the beginning of each chapter and will be due approximately one week from that date.
- C. **Diagnostic Exam:** The required diagnostic exam for this course will test your basic mathematical skills in algebra, geometry, trigonometry and word problem solving. The exam consists of 20 multiple choice questions. The exam will be administered online by the CASA Testing Center **August 24 – September 3**. You can log onto the CASA website <http://casa.uh.edu> to register for the test.
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.
- D. **My Readiness Test Math Tutorial:** If you 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 Readiness Test. If you did not purchase your textbook through the UH bookstore, you can purchase a code for My Readiness Test for \$15 during the registration process. See <https://uh.edu/nsm/physics/undergraduate/intro-course-info/> for information on how to register and access the math tutorial through My Readiness Test.
- E. **Exams:** Exams will be given online. There will be three regular exams. Regular exams will cover 3-5 chapters each. There will also be a longer final exam which will be comprehensive, covering all the material in the course. You may be required to turn in your work for each exam (via scanning or photographing it). You may also be required to use online monitoring software during exams. (More specific information on exams can be added later.)
- F. **Teamwork Component:** A teamwork component will be evaluated in this course. This is a required component of the course. Choose one of these examples or use some other form of teamwork.
 - a. Concept tests will be administered during lecture. Students will discuss these questions in teams as a method of peer instruction. (For this to count as teamwork, students would have to work in groups using the “breakout room” features in Teams or Zoom.)
 - b. Teams consisting will be assigned to create a study guide for each of the exams for the course. The study guides will be posted in Blackboard and students will be able to choose the study guide which is best for use to prepare for the exam. Each group will have to work together to determine what will be included on the study guide and the best format for presenting it to the students.
 - c. Other?
- G. **Student Success Program/Recitation Sessions:** This course will include recitation study groups. Recitation sessions are held for one hour each week and begin the third week of classes. These sessions provide the opportunity to participate in problem-solving activities designed to enhance your understanding and mastery of the course content. All students are invited to attend. However, **any student scoring below 70% on the Diagnostic Exam MUST attend one recitation each week** for the remainder of the semester. For these students, recitations will count for 50% of the Teamwork/Attendance component grade. Recitation attendance will be graded as the

percentage of required recitation sessions attended. Students must arrive on time, stay for the entire session, and record their attendance.

Grading:

- 3% Diagnostic Exam
- 10% Teamwork / Attendance
- 7% Discretionary – Could count for reading quizzes, more towards exams, etc. However, this percentage cannot be put towards Homework)
- 10% Homework
- 17% Regular Exam I
- 17% Regular Exam II
- 17% Regular Exam III
- 19% Final Exam

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. comprehend the fundamental principles in mechanics.
2. use the formalisms of the theory and mathematical techniques to solve problems. This involves application, analysis, and synthesis of the fundamental principles.

Other learning outcomes include:

1. Students completing this course will be able to convey knowledge of the basics principles of physics and be able to use these principles to solve elementary problems.
2. Students will be able to take a real-life problem and use physical principles and basic mathematical tools to describe the problem.
3. Student will have the ability to communicate orally and in writing in a clear concise manner the concepts of Physics.

Course Content:

This course will cover Chapters 1-15 which include the following topical areas:

1. Vector in Physics
2. Newtonian Mechanics: Motion in 1-D and 2-D
3. Work and Energy
4. Momentum and Collisions
5. Rotational Kinematics, Dynamics and Energy
6. Gravity
7. Oscillations about Equilibrium
8. Waves and Sound
9. Fluids

Tutoring and Additional Resources: See <https://uh.edu/nsm/physics/undergraduate/intro-course-info/>.

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.

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=34&navoid=12627>.

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: <http://catalog.uh.edu/content.php?catoid=34&navoid=12495>

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (www.uh.edu/caps) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. Also, there is no appointment necessary for the "Let's Talk" program, which is a drop-in consultation service at convenient locations and hours around campus. <https://uh.edu/caps/outreach/lets-talk/>.

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