



COURSE TITLE/SECTION: Physics 1321 University Physics I, 22925, Fall 2018

TIME: T Th 10 – 11:30 am

LOCATION: SR1 117

F 1 – 2 pm

F 160

FACULTY: Dr. Rebecca Forrest

OFFICE HOURS: SR1 515C, M 2–3, T 2:30-3:30, W&F 9-10
& by appointment

E-mail: rforrest@uh.edu

Phone: (713) 743-3507

FAX: (713) 743-3589

Website: <http://www.phys.uh.edu/~rforrest/>

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 should 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:

Dr. Forrest's web address is <http://www.phys.uh.edu/~rforrest/>.

This course uses Blackboard, <http://www.uh.edu/blackboard/>.

This course uses the Pearson Mastering Physics online homework system, see below.

V. Textbooks:

Homework problems will be assigned through the Pearson Mastering online homework system for the textbook: University Physics with Modern Physics, 14th edition, by Young and Freedman/Sears and Zemansky. Access to some edition of the textbook, either paper or online, is required. A binder version with access code to Pearson Mastering Physics is available at the UH bookstore. The online homework access code with or without an e-book is available at <http://www.pearsonmastering.com>. See the course website for more options for purchasing the textbook. You should read the material to be covered in class before coming to class.

VI. Course Requirements

A. Photos of Physics Assignments: The objective of the Photos of Physics assignment is for students to observe "real world" events that relate to their studies in class. For each assignment, students will take original photos related to or explained by certain physics principles and upload them to the Photos of Physics Discussion Board on Blackboard. The chapters will be grouped, by exam, into 3 groups. All students will be responsible for posting 2 physics photos for each chapter group, with a 10 - 50 word explanation of how it relates to the physics concepts studied. Students may take photos with their cell phone, camera, tablets, etc. While the assignment is worth 2 points, you may earn up to 3 points; 1 point each for the 2 required photos with explanation, and 1 point extra credit for 1 extra photo with explanation. The Instructor may discuss selected photos and concepts during the lecture. Photo posts must be completed by the posted due date.

B. Homework Assignments: Homework problems will be assigned through the Pearson Mastering online homework system. The problems can be accessed through Blackboard, but you must purchase an access code for Pearson Mastering. There will be one homework assignment per chapter, with approximately 10 problems each. (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, **August 20th – September 5th**. 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.

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 the 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 under the Resources tab (<http://www.uh.edu/nsm/physics/resources/>) or access to the file "MyReadiness Spring 2018 Phys 1321 Math Tutorial" which gives the information on how to register and access the math tutorial through My Readiness Test or use the link below.

http://www.uh.edu/nsm/docs/phys/resources/how-to-register-and-enroll-in-math-tutorial-program_1321_f18.pdf

Statistics: A study on 643 student enrolled in Phys 1301 at UH showed that of the students who scored below 65% on the diagnostic exam, students who successfully completed the math tutorial had 4 times better odds of passing the class. 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 4-6 chapters and will consist of 10-20 multiple choice/free response questions/problems. Partial credit will be given on free response questions. 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/Attendance: Demonstrations:** You will be completing worksheets during in-class demonstrations, in groups of 2-5 students. These will be collected and graded based on completeness, not correctness. Worksheets with only one name will receive 0 credit. Worksheets should be printed from Blackboard and brought to class. Print two, one to turn in and one to keep.

Notes: For all exams you may use a basic scientific calculator for example a TI-30. No graphing/programmable calculators are allowed. 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

6%	Photos of Physics
6%	Teamwork/Demonstration Worksheets
10%	Homework
3%	Diagnostic Exam
17%	Regular Exam I
17%	Regular Exam II
17%	Regular Exam III
24%	Final Exam (Tuesday, 12/11/18, 11am-2pm, SR1 117)
100%	

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 515C of Science and Research #1. My mailbox is located in the Physics office, room 617 in Science and Research # 1. My office hours are listed above.

IX. Bibliography

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

X. Tutoring: Students can take advantage of tutoring through the following:

Physics Learning Center - <http://www.uh.edu/nsm/physics/undergraduate/tutoring/>

Tutor List - <http://www.uh.edu/nsm/physics/resources/>

LAUNCH - www.uh.edu/ussc/launch

At LAUNCH, students can:

- Drop in for individual **Peer Tutoring** on over 100 different courses—no appointment necessary! LAUNCH is located in Cougar Village 1, room N109. <http://www.uh.edu/ussc/launch/index.php>.
- Attend a **Success Workshop**: <http://www.uh.edu/ussc/launch/index.php>.
- Set up an individual appointment with an **Academic Counselor**: 713-743-5411

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>.

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. http://www.uh.edu/caps/outreach/lets_talk.html.

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