

# Physics 11     Introductory Physics I – Spring 2017

## Department of Physics, Lehigh University

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Room 211, Sherman Fairchild Laboratory.

Office Hours: Tues., 1:30 pm – 5:00 pm

Recitation Instructor and Section Number: \_\_\_\_\_

Contact Information: \_\_\_\_\_

**Textbook:** *University Physics*, 14<sup>th</sup> ed., Volume 1, by Young and Freedman

**Course requirements:** Lectures on Mondays and Wednesdays will cover new material. Tuesday and Thursday classes will usually be for discussion of homework solutions and problem-solving methods. Attendance at lectures and recitations along with the timely submission of assignments is required.

**Coursesite:** There is a coursesite for Physics 11 that you have access to. Homework assignments, solutions, class notes, equation sheets, and sample exams will be posted there.

**Reading assignments:** You should attempt to complete reading assignments *before* the material is discussed in lecture.

**Homework:** Submitted at the beginning of lecture on Mondays and Wednesdays in the correct bin for your recitation instructor. Put your section number and instructor name on your paper.

Your goal should be to learn physics sufficiently well so that you will be able to solve physics problems *by yourself* on the exams.

- 1) The assignments are graded primarily on whether you've made a serious effort instead of numerical accuracy. So you should attempt all problems.
- 2) Start working on the assignments *early* so that if you get stuck, you have time to discuss the problems with your classmates or recitation instructor.
- 3) Working on homework in collaboration with classmates is allowed, even encouraged. But remember, you will be expected to solve exam problems by yourself. And it is by struggling with homework exercises that you learn the material. *Copying homework will not help you learn what you need to know to do well on exams.*

**Quizzes:** Six quizzes will be given during TTh recitations. The quiz questions will be similar to homework problems. The numbers in parentheses on the syllabus indicate the homework assignments covered by that quiz. Only your highest five quiz scores will count toward your final course grade. Arrange make-ups for missed quizzes with your recitation instructor.

**Hour Tests:** Two 4 o'clock exams will be given during the "4:00 quiz" time period for hour exams assigned by the registrar for Physics 11. If an hour test must be missed for a valid reason (illness or death in the family), I will arrange a make-up exam for you. **The exams will be "closed book"** but you will be supplied with an equation sheet. There will be a 3 hr final exam.

**Grading:** Your numerical grade will be determined as follows:

Hour Exam 1	100
Hour Exam 2	100
Quizzes (highest 5 out of 6)	75
Homework	75
Attendance (recitation)	50
Final Examination	200
<b>TOTAL</b>	<b>600</b>

**Course schedule:** The following pages provide the due dates for reading assignments and the dates for quizzes and hour exams. The numbers in parentheses after the quiz dates indicate the homework assignments to be covered on that quiz.

**Tutoring resources:** The Center for Academic Success (<http://studentaffairs.lehigh.edu/success>) offers tutoring for Physics 11.

**Academic behavior:** All work on quizzes and exams is required to be strictly your own work. The use of cell phones and any other communication tools is not permitted during quizzes or exams. Cheating on exams will earn an F as the semester grade.

**Athletes:** Please send sports evaluation forms to your **recitation instructor**.

**Religious holidays:**

1. Inform your instructor that you will be absent from class due to observance of religious holidays.
2. Arrange with the instructor to complete assignments and any required make-up work.

**Accommodations for Students with Disabilities:** If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, University Center C212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted. Both your recitation instructor and I should get a copy of the letter granting accommodation from the Academic Support Services Office.

**Principles of Equitable Community:** Lehigh University endorses The Principles of our Equitable Community (<http://www4.lehigh.edu/diversity/principles>). We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.

Physics 11 intends to build skills in the following areas:

1. Mathematical tools and methods required to solve physics and engineering problems. These include: units and unit conversions, exponential notation and significant figures, quadratic equations, simultaneous equations, trigonometry, vectors and vector operations, application of calculus to physics problems, interpreting and creating graphs.
2. Analysis of word problems and applying physical principles to solve them.
3. Application of kinematic equations to analyze situations involving constant acceleration in one and two dimensions.
4. Application Newton's Laws and free-body diagrams to predict motion under the influence of force. Circular motion and situations that include static and kinetic friction.
5. Concepts of work, kinetic energy, and potential energy and associated conservation laws.
6. Impulse, linear momentum and its conservation. Analysis of colliding objects.
7. The application of kinematic equations, force laws, and conservation laws to rotational motion.
8. Use of basic physics principles to understand applications in engineering statics, gravitation, and oscillations.
9. Heat as thermal energy and the laws of thermodynamics. Thermal properties of matter.
10. Analysis of cyclic processes of ideal gases and the theory of heat engines.