

Physics 131: Conceptual Physics

Instructor: Chris DeMarco

Office: McDivitt Hall, Room 211A (conveniently located inside of Room 211)

Office Hours: 8:00 am – 9:30 am, Monday thru Thursday
11:00 am – 1:00 pm, Tuesday and Thursday
and by appointment

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Text: Paul Hewitt, *Conceptual Physics*, 12th ed.

Also available as an e-book; do a Google search for ISBN **9780321939777**. It's available from Pearson (the publisher) for \$46, and from other online sources.

General Information

This is what is known as a “conceptual” physics course. This means that you won't have to deal with most of the scary equations you find in other physics courses. In general, we will be looking at how physicists describe, analyze and explain how things work. In the lab section of the course, we will be looking at applications of the principles we will be talking about in class, and learning how to record and present data.

Grading

Exams: We will have a series of four multiple-choice exams over the material we cover in class. There is no comprehensive final exam. All together, the tests will make up 65% of your overall grade.

Homework and Annoyingly Random Quizzes: Roughly once a week, you'll have a homework assignment made up of Review Questions, Exercises and Problems from the textbook. These will help you to understand the concepts that we will be discussing, and will be the things that will best help you prepare for the exams. There will also be short quizzes in class from time to time, which you can work on with others. All together, the homework assignments and quizzes will make up 15% of your overall grade.

Labs: Each week in lab, you'll be given a project to work on with a partner. All together, the labs will make up 20% of your overall grade.

Your overall grade will be determined using the following scale:

90% – 4.0	82% – 3.5	74% – 3.0	66% – 2.5
58% – 2.0	50% – 1.5	42% – 1.0	34% – 0.5

Late Policy

Tests: You have to show up to class on the days we have tests. Dates for the tests are on the last page of this syllabus. You will be able to make up a test only if you inform me that you will be unable to attend *before* the test is given, and then only under unusual circumstances. You will be

given a make-up exam which will probably be more difficult than the original exam, so it is in your best interest to attend the tests on the scheduled dates if at all possible.

Homework and Quizzes: You can't make up either homework or in-class quizzes. However, you can drop one-fifth of them over the course of the semester, to cover cases when you can't attend for whatever reason. Also, you can email or fax me your homework if you know you won't be able to attend on a particular day.

Labs: You can't make up labs. However, you can drop two labs over the course of the semester. Also, if you know in advance you can't make your regular lab section, try to attend the other section that week.

IMPORTANT NOTE (A Quick, Convenient Way to Fail the Class): The lab section of the course is mandatory in order to receive credit for the class. **If you miss more than five (5) labs over the course of the semester, you will fail the class no matter what your grades are on the tests and homework/quizzes.**

Tentative Course Outline

Mechanics

- Chapter 3: Linear Motion
- Chapter 10: Projectile and Satellite Motion
- Chapter 2: Newton's First Law of Motion – Inertia
- Chapter 4: Newton's Second Law of Motion
- Chapter 5: Newton's Third Law of Motion
- Chapter 6: Momentum
- Chapter 7: Energy
- Chapter 8: Rotational Motion

Properties of Matter

- Chapter 12: Solids
- Chapter 13: Liquids
- Chapter 14: Gases

Heat

- Chapter 15: Temperature, Heat, and Expansion
- Chapter 16: Heat Transfer
- Chapter 17: Change of Phase

Sound

- Chapter 19: Vibrations and Waves
- Chapter 20: Sound
- Chapter 21: Musical Sounds

Electricity and Magnetism

- Chapter 22: Electrostatics
- Chapter 23: Electric Current
- Chapter 24: Magnetism
- Chapter 25: Electromagnetic Induction

Physics 131 Tentative Lab Schedule

<i>Laboratory</i>	<i>Dates</i>	
NO LAB (First week of classes)	September 4	September 6
Free Fall	September 11	September 13
Projectile Motion	September 18	September 20
Newton's Second Law	September 25	September 27
Newton's Third Law	October 2	October 4
Conservation of Momentum	October 9	October 11
Work and Energy	October 16	October 18
The Pendulum	October 23	October 25
Rotational Dynamics	October 30	November 1
Density	November 6	November 8
Hooke's Law & Simple Harmonic Motion	November 13	November 15
NO LAB (Thanksgiving week)	November 20	November 22
Mechanical Equivalent of Heat	November 27	November 29
Standing Waves in Strings	December 4	December 6
Cryptograms	December 11	December 13
NO LAB (Final week of classes)	December 18	December 20

Physics 131 Test Schedule

Test I – Wednesday, September 27

Test II – Wednesday, October 25

Test III – Monday, November 20

Test IV – Wednesday, December 20