

# 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  
1:00 pm – 3:00 pm, Monday and Wednesday  
*and by appointment*

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

## 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>	
<b>NO LAB</b> (First week of classes)	September 5	September 7
Free Fall	September 12	September 14
Projectile Motion	September 19	September 21
Newton's Second Law	September 26	September 28
Newton's Third Law	October 3	October 5
Conservation of Momentum	October 10	October 12
Work and Energy	October 17	October 19
The Pendulum	October 24	October 26
Rotational Dynamics	October 31	November 2
Density	November 7	November 9
Hooke's Law & Simple Harmonic Motion	November 14	November 16
<b>NO LAB</b> (Thanksgiving week)	November 21	November 23
Mechanical Equivalent of Heat	November 28	November 30
Standing Waves in Strings	December 5	December 7
Cryptograms	December 12	December 14
<b>NO LAB</b> (Final week of classes)	December 19	December 21

## Physics 131 Test Schedule

Test I – Wednesday, September 28

Test II – Wednesday, October 26

Test III – Monday, November 21

Test IV – Wednesday, December 21