

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 – 2:00 pm, Monday

11:00 am – 2:00 pm, 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 four (4) 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>Date</i>
NO LAB (First week of classes)	September 14
Free Fall	September 21
Projectile Motion	September 28
Newton's Second Law	October 5
Newton's Third Law	October 12
Conservation of Momentum	October 19
Work and Energy	October 26
The Pendulum	November 2
Rotational Dynamics	November 9
Density	November 16
Hooke's Law & Simple Harmonic Motion	November 23
Mechanical Equivalent of Heat	November 30
Standing Waves in Strings	December 7
Cryptograms	December 14
NO LAB (End of semester)	December 21

Physics 131 Test Schedule

Test I – Wednesday, September 30

Test II – Wednesday, October 28

Test III – Monday, November 23

Test IV – Monday, December 21