

PHYS 1212 *University Physics II*

Spring Quarter, 2007

Course Syllabus

INSTRUCTOR

Barry L. Zink
Assistant Professor
Office: Physics 404
(303) 871-3025
barry.zink@du.edu
<http://portfolio.du.edu/bzink2>

Office Hours:
Mondays 3-5pm
Thursdays 3-5pm
Fridays 11-Noon
(or by appointment)

COURSE GOALS

This is the second in a three-quarter course sequence that will introduce you to the basic concepts and practice of physics. The topics and tools presented provide the foundation for future study in engineering, astronomy, biology, chemistry, and interdisciplinary fields, as well as physics. This quarter's course will cover elasticity and statics, basic fluid mechanics, waves and harmonic motion, basic thermodynamics, gravitation, and possibly an introduction to "modern" physics. This course is required for physics majors and all students in engineering, and recommended for any other science majors who are also required to take calculus.

Like *U. Phys. I*, this will be a rigorous course, but will hopefully be a fun and rewarding one as well. The course material is challenging, but please remember that as your instructor, **I AM HERE TO HELP!!** My job is NOT to make the material harder, but to do what I can to make sure you learn what physics is, why you should care, and how to successfully apply the ways of thinking, quantitative methods, and concepts that make up introductory physics to your future studies, and perhaps to life in general! By the end of this sequence you should find that you can answer many questions about the world that you couldn't before. If those answers make you ask even more questions, congratulations! You just might be a scientist...

PREREQUISITES

PHYS 1211 *University Physics I*
MATH 1951 *Calculus I*
MATH 1952 *Calculus II*
MATH 1953 *Calculus III* (concurrent enrollment)

CLASS SCHEDULE

Lectures: Monday, Wednesday, Thursday, and Friday 10:00-10:50 AM, Olin 105

Laboratory: You MUST be enrolled in ONE of the following sections that meet in Physics B7:

Section 1: Tuesday, 8:00-9:50 AM
Section 2: Tuesday, 11:00 AM-12:50 PM
Section 3: Tuesday, 3:00-4:50 PM

IMPORTANT DATES

Exams:

Midterm Exam I April 16, 2007, 10-10:50 AM, Olin 105
 Midterm Exam II May 11, 2007, 10-10:50 AM, Olin 105
 Final Exam Wednesday, June 6, 10-11:50 AM, Olin 105

Exams are closed book, though you will be allowed to bring one letter sized sheet of paper to each exam with whatever information you like on it. However, be sure your “cheat sheet” is legible with the naked eye; no magnifying glasses, scanning electron microscopes, etc. will be allowed in exams. You should also bring a calculator, pencil, and eraser. Paper will be provided, and **NO OTHER ITEMS** will be allowed in the lecture hall during exams.

Homework: Assigned roughly weekly, due the following week in class at 10 AM. This quarter the solutions will be posted immediately after the homework is due, so **NO LATE WORK WILL BE ACCEPTED!**

Quizzes: We will have roughly one quiz per week. Quizzes will be taken ONLINE via <http://blackboard.du.edu>. The problems will be very closely based on material presented either in lecture, homework, or labs. If you are keeping up with the course and attending lecture, the quizzes should be easy! Quizzes (even though you will do them online outside of class) are **CLOSED BOOK, CLOSED NOTES, and MUST BE DONE ON YOUR OWN!**

GRADING POLICY

The assignments and exams are weighted to give your final score in the following manner:

Assignment	Weight
Lab Work	20%
Quizzes	10%
Problem Sets	20%
Midterm Exam I	15%
Midterm Exam II	15%
Final Exam	20%

You CAN get an A in this course if you **WORK** hard, **LEARN** the material, and **DEMONSTRATE** your learning through performance on the assignments and exams. The final grade will not simply be assigned at fixed point cut-offs, but will be based on how well each student’s scores demonstrate mastery of the material. If your performance demonstrates that you learned only enough physics that you won’t need to repeat the course, expect a C. If you demonstrate a comprehensive command of the material, expect an A. If you are somewhere in between, expect a B. Individual scores will be compared to the overall performance of the class in order to avoid a particularly difficult assignment or exam adversely affecting everyone’s grade. Overall scores will be presented frequently in class, and are always available on <http://blackboard.du.edu>. If you are worried about your grade, **come to office hours!** We can discuss ways to improve.

PARTIAL CREDIT

Homework and exam questions will ALWAYS be graded to give “partial credit,” meaning that a final correct answer is NOT the only part of the grade. In fact, demonstrating your thought process and setting up the problem correctly is a LARGE part of your grade. A correct answer given to a problem with no evidence of how you arrived at that answer is NOT WORTH ANYTHING! As you are completing your homework, imagine you are teaching the grader your method for doing each problem. To give yourself the best chance for high grades, make sure your work is clear and easy to follow. You will probably want to rewrite your solutions after your first time through the assignment.

REQUIRED TEXT

David Halliday, Robert Resnick, and Jearl Walker, *Fundamentals of Physics*, 8th edition, *Part II*, Wiley 2006 (ISBN: 978-0-470-17524-8)

SUPPLEMENTARY READING

Feynman, Leighton, and Sands, *The Feynman Lectures on Physics*, Addison-Wesley (any edition)

Clifford Swartz, *Prelude to Physics*, Wiley, 1983

Dare A. Wells and Harold S. Slusher, *Physics for Engineers and Science, Schaum's Outline Series*, McGraw-Hill, 1983 (or similar newer edition)

Jerry D. Wilson, Anthony J. Buffa, *College Physics*, 5th ed., Prentice Hall, 2003

John D. Cutnell, Kenneth W. Johnson, *Physics*, 6th ed., Wiley, 2003

Douglas C. Giancoli, *Physics: Principles with Applications*, 5th ed., Prentice Hall, 1998.

Larry Gonick and Art Huffman, *The Cartoon Guide to Physics*, Harper-Perennial, 1990 (?)

INTERNET RESOURCES AND COMMUNICATION

This syllabus, along with any other course information such as homework assignments, exam solutions, etc. are ALWAYS available online at the course homepage on <http://blackboard.du.edu>. The most recent course grades are also ALWAYS available on <http://blackboard.du.edu> and any questions regarding current grades will be referred to blackboard.

E-mail is a very reliable way to communicate with me, and the best way to arrange office hours by appointment if you cannot attend at the times posted above. I will likely communicate with the class via e-mail during the quarter, so it is good to get in the habit of checking your e-mail frequently, if you don't already do so.

WAYS TO GET HELP

Every student in this course has multiple ways to get help with problem sets, pre-labs and lab reports, general concepts, or other problems. These include:

- **Physics Help Desk:** Graduate Teaching Assistants are available to any physics student nearly all hours of the week at the Physics Help Desk, located in the 1st floor lobby of the Physics Building. The current Help Desk schedule will be handed out in class, and also available on <http://blackboard.du.edu>.
- **GTA Office Hours:** Each of the physics Graduate Teaching Assistants (GTAs) has office hours in addition to Help Desk. Times are posted with the Help Desk schedule.
- **My Office Hours:** I have set aside time for weekly Office Hours on Monday and Friday from 11am-12pm, and Thursday from 2-4pm. I will be in room 404 in the Physics Building, or easily found nearby. If you cannot attend these times, call or e-mail me to make other arrangements.
- **Tutoring:** If you desire additional individual help, the Physics Department maintains a list of private tutors. See Barb Stephens in the Physics Office (2nd Floor of the Physics Building) for more information.

ESTIMATED SCHEDULE OF LECTURES

Week 1.....	Equilibrium and Elasticity
Week 2.....	Fluids
Week 3.....	Oscillations
Week 4.....	Waves
Week 5.....	More Waves!
Week 6.....	Temperature, Heat, First Law of Thermodynamics
Week 7.....	Kinetic Theory of Gases
Week 8.....	Entropy and Second Law
Week 9.....	Gravitation
Week 10.....	Intro to Modern Physics?

HONOR CODE VIOLATIONS

You have all read, understood, and signed the University of Denver Honor Code. I expect you to follow the Honor Code. Violations will be taken seriously, and are potential grounds for failing the course. If you cheat, you LEARN less, and you violate everyone's trust. I will be grumpy, to say the least.