

Physics 212 – General Physics II

Fall 2006

Course Information

Instructor:	David Withoff	ffdjw@uaf.edu
Lecture:	MWF 9:15-10:15 AM 203 Natural Sciences Facility	
Office:	108 Natural Sciences Facility	474-5330
Office Hours:	MW 10:15-11:15 AM	Other times by appointment, or as announced in class; email anytime
Credit Hours:	3+1 (including the lab)	
Course Content:	This course provides an introduction to thermodynamics and to electricity and magnetism. Topics to be covered include: temperature, ideal gas laws, kinetic theory of an ideal gas, thermal properties of matter, heat engines, laws of thermodynamics, entropy, electrostatics, electric fields and electric potential, magnetism, Maxwell's equations, resistors, capacitors and inductors, direct and alternating current, electrical circuits, and electromagnetic radiation. This course is designed for people who are majoring in science or engineering. Successful completion of this course can be applied toward the baccalaureate degree core natural sciences requirements.	
Prerequisites:	Proficiency with mathematics through college calculus. Algebra, trigonometry, and calculus will be used extensively. Previous experience with physics at the level of high school physics is desirable.	
Laboratory:	There is a lab associated with this course. All labs and lab reports must be completed to get a passing grade for this course. The last day to turn in lab reports is the last day of instruction (Monday, December 11).	257 Natural Sciences Facility
Text:	Physics for Scientists and Engineers, Raymond A. Serway and John W. Jewett, Jr., 6th edition (2004).	This course covers chapters 19-34

Grading: Letter grades will be based on points accumulated during the semester. Points may be accumulated as follows:

Homework	100 points
Quizzes (10 quizzes, 100 points each)	100 points
First Midterm	100 points
Second Midterm	100 points
Lab (10 labs, 100 points each)	100 points
Final Exam	150 points
Total possible points	650

Letter Grades: A: >90% (585 points)
B: >80% (520 points)
C: >70% (455 points)
D: >60% (390 points)

Homework

There will be a homework assignment due every Wednesday at 5PM, starting Wednesday, September 6 (the first Wednesday of the semester).

The first homework assignment is Chapter 21, Problem 24 from the textbook. I will work out the solution to this problem in class, but to get credit for the homework you still need to write up and turn in the solution by 5PM on Wednesday, September 6.

Answers to the odd-numbered problems can be found in the back of the book. I also sometimes work out solutions to the homework problems in class before the homework is due. You can in most cases get full credit for the homework if you submit your homework on time, show a reasonable attempt at solving the problem, and your final answer is correct.

You are strongly encouraged to try *really* hard to do the problems on your own before looking up the solutions or asking for me or anyone else to solve the problems for you. Most people learn physics better by doing problems themselves than by watching the instructor do problems. Most exam and quiz questions will be similar to homework problems.

Homework should be turned in to the Physics 212 homework box in the Physics Department Office (102 Natural Sciences Facility), or directly to me.

Quizzes

There will be a quiz during the first 15-20 minutes of class every Friday, except for Fridays on which there is an hour exam. Quizzes will consist of problems similar to homework problems or to problems discussed in class. **There will be no makeup quizzes.** If you miss a quiz, the best way to make up for it is to do an extra credit assignment.

Extra Credit

You may do up to three extra credit projects, which can substitute for your lowest quiz scores, including quizzes that you missed. See me about choosing an extra credit project.

Midterm Exams

There will be two hour exams (10/6 and 11/10). These exams will typically consist of 10-20 short questions and 4-6 longer problems. Topics covered in each exam will be discussed in lecture.

Hour exams will begin at the start of class and end at the end of class. You are responsible for getting to class on time and for turning in your exam at the end of class. Makeup exams will be provided only by prior arrangement or if unforeseen circumstances prevent you from taking the exam during the regular class period.

Unless otherwise announced, **no books, notes, or calculators may be used during quizzes or exams.**

Lab and Lab Reports

There is a lab associated with this course. **All labs and lab reports must be completed to get a passing grade for this course. The last day to turn in lab reports is the last day of instruction (Monday, December 11).** There are two lab sections:

Tuesday 2:15 – 5:15 p.m.

Wednesday 2:15 – 5:15 p.m.

See Mr. Robert Parsons about attending a lab section other than the one for which you are registered. If you do not have written permission, the teaching assistant will not permit you to attend the different lab section.

There will be an opportunity to make up labs during the week of the Thanksgiving holiday. Times and procedures for making up a lab will be announced in class. Other questions about the lab, including questions about the grading of lab reports, should be directed to the teaching assistant in charge of your lab, or to the laboratory supervisor, Mr. Robert Parsons (114 Natural Sciences Facility).

Final Exam

There will be a comprehensive final exam from 8AM-10AM on Saturday, December 16 in the same location as the regular lecture.

Blackboard

I encourage you to check your Blackboard account for this class for course documents and announcements and to verify that I have entered your scores correctly. I will enter scores for quizzes, homework, labs, and exams as soon as they become available to me.

Complaints and Concerns: You are always welcome to talk to me about anything. If you have a question or concern that cannot be resolved by me contact the department chair, Dr. Craven, through the Physics Department Office, Room 102 Natural Sciences Facility.

Disabilities Services: The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. I will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodations to students with disabilities.

Plagiarism and cheating: Although you may work together on labs and homework, any materials that you submit for grading, and everything that you do on quizzes and exams, should be entirely your own work. You are expected to conduct yourselves in accordance with the Student Code of Conduct, which prohibits cheating, plagiarism, and other forms of academic dishonesty. For more information see the UAF catalog or <http://www.uaf.edu/catalog/current/academics/regs3.html>.

General Advice (from Prof. Newman): Physics is not something you read and memorize; rather, it is something you learn how to do. Try the following study procedure:

1. Read the chapter prior to lecture, so that you will know what it's about
2. Listen carefully to the lecture and take notes
3. This is crucial: Do not go back and read and re-read the chapter until you "understand it." Rather, start working problems, going back through the chapter to clarify points as they come up. I suggest you try to answer all "Quick Quiz" problems in the text and the "Questions" at the end of the chapter. If you understand these, you've probably understood the salient points of the chapter.
4. Think! Don't simply try to fit the problems into the form of another problem; think through the problem first.

For additional study suggestions, see <http://godel.ph.utexas.edu/~larry/how/how.html>.

Tentative Class Schedule

Monday	Wednesday	Friday
		9/1 Course overview Opening Quiz
9/4 Labor Day No Class Errors Lab	9/6 Chapter 21 Last day for full refund of tuition and fees Due: Homework #1	9/8 Chapter 20 Quiz #1
9/11 Chapter 22 Gas Thermometer Lab	9/13 Chapter 19 Due: Homework #2	9/15 Chapter 20 Quiz #2
9/18 Chapter 20 Latent Heat Lab	9/20 Chapter 21 Due: Homework #3	9/22 Chapter 22 Quiz #3
9/25 Chapter 23 Thermal k	9/27 Chapter 23 Due: Homework #4	9/29 Chapter 24 Quiz #4
10/2 Chapter 25 Lab used for Recitation	10/4 Review Due: Homework #5	10/6 First Midterm (Chapters 19 - 25.4)
10/9 Chapter 25 Coulomb Lab	10/11 Chapter 24 Due: Homework #6	10/13 Chapter 26 Quiz #5
10/16 Chapter 26 Potential Mapping Lab	10/18 Chapter 27 Due: Homework #7	10/20 Chapter 27 Quiz #6
10/23 Chapter 27 Capacitance Lab	10/25 Chapter 28 Due: Homework #8	10/27 Chapter 28 Quiz #7
10/30 Chapter 29 DC Circuits Lab	11/1 Chapter 29 Due: Homework #9	11/3 Chapter 29 Quiz #8
11/6 Chapter 29 Lab used for recitation	11/8 Review Due: Homework #10	11/10 Second Midterm (Chapters 25 - 29)
11/13 Chapter 30 E/M Ratio Lab	11/15 chapter 30 Due: Homework #11	11/17 Chapter 31 Quiz #9
11/20 Chapter 31 Makeup Labs	11/22 Chapter 32 Due: Homework #12	11/24 Thanksgiving No class
11/27 Chapter 32 Current Balance Lab	11/29 Chapter 32 Due: Homework #13	12/1 Chapter 33 Quiz #10
12/4 Chapter 33 Lab used for recitation	12/6 Chapter 34 Due: Homework #14	12/8 Chapter 34 Quiz #11
12/11 Last day of class Last day to turn in lab reports for a grade	Finals week	12/16 (Saturday) Final Exam 8AM-10AM