

UNIVERSITY PHYSICS PHYS205

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office hours:

*Mon., Wed. & Fri. 10:00 → 11:00, Wed. 5:00 → 6:00
and by appointment any other time I'm needed.*

Course web page:

<http://personal.ashland.edu/rmichael/courses/phys205/phys205.html>

Laboratory web page:

<http://personal.ashland.edu/rmichael/courses/labmanual/labmanual.html>

ABSTRACT. The primary purpose of this course is to teach you how to think like a physicist. In other words, to be able to apply abstract general principles to specific physical situations. The degree to which you can master this ability will determine your success not only in this course, but also in your chosen profession. The secondary goal is to impart to you a body of knowledge that has been painstakingly gathered over the last 2,000 years about how the physical world works. Energy, mechanical forces, electricity, magnetism, light, sound, heat . . . the scope of phenomena covered in the field of physics is perhaps larger than any other science. Curiously, the amount of memorization required is perhaps less than most other fields. This is because physics tries to simplify complicated situations by casting them in terms of a few natural laws. Indeed, you may be surprised how few there actually are. In Physics 205 we will cover the topics of Newtonian Mechanics, Energy, Thermodynamics, and Waves & Sound, all within a Calculus and algebraic framework. You will gain an understanding of how to view the natural world within a scientific structure through the development of problem solving skills applied to the physical world.

TEXT: Physics for Scientists and Engineers. 8th *Serway/Jewett*

SOFTWARE: www.webassign.net: Course ID Ashland 3375 7496

1. ATTENDANCE

I will not take attendance during the semester, but within the framework of a small class it is obvious who is and is not attending classes. Even though attendance is not required let me make one point perfectly clear. If you do not attend class, you will find the quizzes and tests extremely difficult to pass. We will be moving at a very rapid pace, if you wish to pass the course attending all the lectures is highly recommended.

2. HOMEWORK

Problems from the text, with the possibility of additional problems in the form of a handout, will be assigned weekly. It is expected that the entire assignment will be completed in the allotted amount of time. It is also recommended that you work together on the problems. It is a good idea to form a study team. Members of the team should discuss solutions and ensure every team member understands all of the problems. We will be utilizing the software *Webassign* which came with your book this semester. The software will allow you to do most of your homework on line and will give you feedback as you go. This work will be graded and reported as part of your final grade. It is my experience that students receiving the highest grades do all of the assigned problems as well as many unassigned problems. My advice would be to work several problems a day and do as many as your schedule will allow.

3. QUIZZES

A quiz on almost every chapter will be given and will cover the homework, lecture material, and material from the book (not necessarily discussed in class). The quiz will be a 10 to 15 minute exercise with or without an intuitive question attached. Approximately 10 quizzes will be given and the lowest quiz grade dropped. If you have not done the homework or attended lectures the quiz scores will reflect this. Makeup quizzes will only be given for college related absence, or circumstances beyond your control, determined at the instructors discretion.

4. POP-QUIZZES

Several pop-quizzes will be given sporadically through out the semester. Anything from class notes or assigned reading will be fair game. The pop-quizzes will only help your grade, they will be considered extra credit and will be added to your final score. If you get zero points on the pop-quizzes it will not affect your grade in any way. This is a great chance to make up for those points lost on the quizzes and tests, by keeping up with the reading and coming to class you can increase your final grade as much as 3% (i.e. $B \rightarrow B+$).

5. TESTS

Two or Three one hour tests will be given. A combination of multiple choice and numerical questions will be the bulk of each test. You will be required to apply what you have learned. You will not just have to rework an old homework problem, but will have to use what you have learned to figure out how to do a different type of problem (i.e. you will have to develop good problem solving strategies).

6. PAPER

You will be required to write one library research paper of three to five pages length. You will have to write the paper in a scientific publication format using \LaTeX . The topics will be tailored to the individual student. I suggest you start gathering your resources early since they might have to be attained through inter-library loan. More information on the style and content will be given early in the semester.

7. FINAL EXAM

The final exam will be given only during the assigned hours. There will be no exceptions to this time, other than the college rescheduling the time. The exam will be comprehensive.

8. MAKEUP

Missed exams, quizzes or class assignments may be made up at the discretion of the instructor with prior notifications.

9. GRADING

The grades for this course will come from the in class evaluations, laboratory reports and the paper. The value of each evaluation type is given as a percentage of the total grade as shown below.

Homework	15%
Quizzes	20%
Tests	20%
Final	20%
Paper	10%
Formal Laboratory	10%
Laboratory	5%

The final grades will be assigned using the following scale as a guide;

94 \rightarrow 100%	A	76 \rightarrow 79%	C+
90 \rightarrow 93%	A-	70 \rightarrow 75%	C
87 \rightarrow 89%	B+	64 \rightarrow 69%	C-
83 \rightarrow 86%	B	58 \rightarrow 63%	D+
79 \rightarrow 82%	B-	51 \rightarrow 57%	D
		0 \rightarrow 50%	F

10. EXTRA HELP

I keep a relatively open door for students who wish extra help. Feel free to stop by my office anytime to discuss problems you might be having or ask any questions that may arise. If I am not free we can arrange a time convenient for us both. Remember I am here to help you learn. You pay my salary, so take advantage of this opportunity. My office hours are listed above, I will make a concerted effort to be in my office during these hours should you ever need to find me.

11. ACADEMIC HONESTY

Refer to the Student Handbook. You should work together on the homework and laboratories, however the paper, quizzes, and exams are expected to be your own work. Anyone caught cheating in anyway on any assignment, quiz, or exam will receive a zero for the that assignment and will be referred to the register's office for further disciplinary action. They may also be withdrawn from the course or receive an F for the course, at my discretion. I would recommend the book *Doing Honest Work in College* by *Charles Lipson* for any concerns or questions about what is honest work and what is not.