Physics 211 – Physics for Science and Engineering I

Section 2 (Fall 2006)
101 Lewis Hall
Tuesdays and Thursdays, 8:00 – 9:15 AM

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NOTE: PHYS 221 (Lab Physics for Science & Engineering I) is a co-requisite for PHYS 211. If you are not enrolled in PHYS 221, you must register for it or you will be dropped from PHYS 211. If you have already successfully completed PHYS 221, let me know.

Office Hours:

Monday 9:00-11:00, Physics Tutoring Room
Tuesday 10:00-12:00, 228 Lewis Hall

My main office is Room 1025, NCPA (National Center for Physical Acoustics).
If you need to see me outside of office hours, please make an appointment.
I am glad to work with you over the phone or by email.

Textbook:

Fundamentals of Physics, 7th Ed., Halliday, Resnick, and Walker
We will cover Chapters 1-17.

You will also need a "clicker"

Grading:

The grades are based on the following:

25 %	Final Exam
20 % each	2 Midterm Exams
20 % total	Quizzes (Most Thursdays – except Exam weeks) *Typically 1 to 3 problems. The lowest two quiz scores are not counted.*
12 % total	Homework Assignments (Bi-weekly) *The lowest two homework scores are not counted.*
3 %	Class Participation *Students will be called on in class. You should be ready to respond to simple questions on the lecture material. The questions are usually taken from the Checkpoints in each chapter of the textbook.*

For each homework assignment, a subset of problems will be singled out for detailed grading. Extra credit problems may be assigned on occasion. Homework assignments will be posted on the Blackboard site in the afternoon on Tuesdays and Thursdays. There

is also an opportunity to write an extra credit report. Details are given later in this document.

Note that the total Quiz score is the same as a midterm exam. I want to reward those students who work hard over the course of the semester and stay on top of the material.

Grading Scale:

100 – 87.5	A
87.5 – 75.0	B
75.0 – 62.5	C
62.5 – 50.0	D
<50.0	F

Rules:

Attendance is expected.
The deadline for homework is the beginning of class (8 AM).
Be prepared to show your student ID or Driver's License on Exam days.
You may use the Student's Solutions Manual, HOWEVER *use of the Instructor's Solutions Manual is considered cheating. Students who use it will be subject to formal academic discipline charges.*

Goals:

The central goal is for you to learn how to think about and apply physical concepts. This class will primarily focus on the laws of mechanics (how and why things move, and how to predict those movements). The main challenge you will face is in developing problem solving skills. Physics problems often involve several steps and usually they require more than just a simple application of formulas in the book. The problems may seem very difficult early on. It may take some time for you develop your skills and doing the homework is an essential part of the process. I am available to help you. I want you to do well. Come to my office hours, and/or use the Physics Tutoring Room. I am also willing to work with you over the phone. E-mail is another option (although I can't guarantee that you will always receive a timely response to e-mail inquiries).

Physics is inherently mathematical. A strong grasp of algebra and trigonometry are essential. You will also be expected to make use of differential calculus. Read ahead of the lectures. Get enough sleep, relax and get ready to stretch your brain.

Extra Credit

The student will write a report based on a published scientific article or magazine article. The student must get my approval of the subject matter/article before beginning. Each student attempting this must have a unique subject/paper. Subjects will be awarded on a first-come, first-served basis. Typically, the credit score is based on the amount of work it

appears you put into the paper. For example, if it seems you put in an effort similar to that required to do two homework assignments, you'll get two homework assignments worth of credit.

The criteria by which these will be judged are as follows:

1. It must attempt to explain the subject matter and conclusions of the paper in terms that are comprehensible to at least one other classmate. It may be given to others in the class for evaluation.
2. It must follow the general form of introduction/body/conclusion and be grammatically correct. I will not accept a paper with substandard grammar or style.
3. It must have a short abstract (<100 words) summarizing the content.
4. All sources of information must be documented, including internet sources (include http link).

The student must make a photocopy of the article in question that will be turned in with the paper. (Go to the library and make the photocopy.)

The journals that you can use are:
American Journal of Physics
Physics in Medicine and Biology
The Physics Teacher
Physics Education
Physical Review Focus
Industrial Physics
Physics Today
Physics World
Scientific American
New Scientist

Schedule (This is subject to change)

Date			Material
August	22		Chap 1
	24		Chap 2, Chap 3
	29		Chap 3, Chap 4
	31	Quiz	Chap 4
September	5		Chap 4, Chap 5
	7	Quiz	Chap 5
	12		Chap 5, Chap 6
	14	Quiz	Chap 6
	19		Chap 7
	21	Quiz	Chap 7, Chap 8
	26	**EXAM 1**	
	28		Chap 8
October	2	**Drop Deadline**	
	3		Chap 8, Chap 9
	5	Quiz	Chap 9, Chap 10
	10		Chap 10
	12	Quiz	Chap 11
	17		Chap 11, Chap 12
	19	**EXAM 2**	
	24		Chap 12, Chap 13
	26	Quiz	Chap 13
	31		Chap 13, Chap 14
November	2	Quiz	Chap 14
	7		Chap 14, Chap 15
	9	Quiz	Chap 15
	14		Chap 15, Chap 16
	16	Quiz	Chap 16
	21	BREAK	
	23	BREAK	
	28		Chap 17
	30		Chap 17, Exam Review
December	**5**	**Final Exam**	**Tuesday, 8 am**

We will hold study sessions for the two midterm exams. These will be held in Lewis Hall (usually 101 or 109) and we'll agree on a time/date that is best for the majority of the students.