

Physics 211 : Introductory Physics I 2010 Fall (3749) Syllabus

Meets Mon+Wed+Fri 11⁰⁰ – 11⁵⁰, +Mon 12⁰⁰ – 12⁵⁰ in Sci.277 (56 classes + final exam)

PHY 211 is a 4-credit course for undergrad majors in Physical Science or Engineering.

You are expected to enroll in Phy202 (or 212) during the same term as Phy211.

Instructor : Dr. Curt Foltz ... Science 159 ... foltzc@marshall.edu ... 696-2519

Office hours: MWF 8³⁰-10³⁰, 1³⁰-3⁰⁰; T 10³⁰-12, 12³⁰-2³⁰; R 11³⁰-12³⁰, 3³⁰-5

Do stop by my office, anytime 9-7pm. I'll put a note on my door if I'm elsewhere.

Regular Attendance - Diligent Preparation expected - Tenacious Attention anticipated

- Lectures will often show a different perspective than our textbook has.
- Classmates' discussion can usually not be reproduced to the same effect.
- Necessary recitation / practice / exercise is not as much fun outside of class.
- Commentary that accompanies an example problem solution is important.

Prerequisites: Mth229 (calculus I with analytic geometry)

When you encounter ideas that are hazy, try to sharpen them

(textbook? a study partner can be much more help here – see me if they are not).

Required: *Physics for Engineers and Scientists* Ohanian & Markert (3rd ed, Norton 2007)

web browser : course home page: www.science.marshall.edu/foltzc/Phy2111.htm

email access : I'll use your marshall address for all official communications

attendance : at each class meeting ready to learn (pen or pencil, calculator, textbook)

time & effort: outside of class, 6-8 effective hours per week to do the assignments

Recommended : notebook with empty pages (to use in class, and outside of class)

non-programmable calculator : buttons (not menu) for EXP/EE, \sin , \sqrt{x} , x^2 , e^x , $1/x$

study partner : it's more thorough and usually more fun than studying by yourself

occasional access to a different book, for a new perspective on a sticky topic

(*concepts*: Lightman, Mills, Beiser, Dixon, Barrett ; *practical*: Schaum's Outline

(*different*: Tom Moore, Reese, ProjectPhysics ; *advanced*: Feynman, Symon

Objectives: Phy.211 is part one in a three-semester sequence introducing the concepts and principles which describe and explain the physical world's behavior. Theories relate properties of an object, and conditions of its environment, to changes that will occur (in properties and conditions) as processes proceed. Simplified models approximate portions of the complicated physical world to explain key aspects of these processes. Students will simplify scenarios (from bio, chem, geology, space, technology, *etc*), to obtain conceptual and quantitative descriptions (Force, Work, Impulse, Action, *etc*). Students will represent invisible quantities on diagrams, will graph relationships, and will use cause-effect wordings. Students will translate sentences to symbolic forms, will manipulate symbols to obtain new arrangements, and will interpret calculations so as to recognize magnitudes for quantities on atomic, human, and planetary scales.

Plan for graded homework after almost every class, Quizzes nearly every week.

280 pts = 4 Exams x 70 pts/Exam (~Sep.27, Oct., Dec.14@10:15)

120 pts = 12 Quizzes x 10 pts/Quiz

160 pts = 40 HW sets x 4 pts/HW A > 87% > B > 78% > C > 70% > D > 61%

560 pts <= (approximate point count! contributions will be 50% + 20% + 30%)

Rules : If you miss a quiz or exam, contact me before the next class to arrange a make-up.

If you miss a homework due date, email me to see about getting it to me for grading.

Late homework will be out of 3-4 points (not 5) ; out of 1-2 after that set is returned.

Homework assignments will be posted : www.science.marshall.edu/foltzc/Phy2111.htm

“suggested as practice” will not be graded, but should guide our classroom activities.

“paperwork” solutions must show an intermediate step for the answer to be counted.

(“webwork” questions will probably be only as review for exams, not for grading.)

do some practice before the graded problems; some before a quiz; some before exam

Physics I digs deeply into the *properties* and *behavior* of physical *objects* and *quantities*.

Distinguish intrinsic properties (mass, length) from conditional ones (weight, speed) and distinguish physical quantities (Energy, momentum, Force) from their objects.

Phy211 describes what an object does, and tries to explain why it does that process.

We might spend 40% of our effort on quantities, 30% on the math, 20% on objects.

We will use object vectors, and take derivatives of functions, with commentary.

Suggestions: look at the chapter pictures & read the captions, before class begins.

Ask in class when you don't understand what we're doing, and why we're doing it.

Try some practice problems, before next class – participate in discussion of them.

We engage in recitation activities whenever we need our memories stirred.

Statements that are valid for ALL Classes at Marshall:

Academic Dishonesty Policy: progress in science is founded on honesty and openness – no lying, no cheating, no stealing (plagiarism) – zero tolerance – see pp.102-108 in the undergrad catalog : www.marshall.edu/catalog/undergraduate/ug_09-10.pdf

Incomplete Grade Policy: must have done ¾ of the course successfully (*i.e.*, passing); course work must be completed within 1 semester (*i.e.*, by 2011 May) – see pg.134

Inclement Weather Policy: don't over-risk your safety to get to class – see catalog pg.95

Affirmative Action Policy: equal opportunity at Marshall is outlined on catalog pg.93

Students with Disability Policy : the student must initiate procedures ... first, see info at www.marshall.edu/disabled/ ... then, contact the Office of Disabled Student Services in Prichard Hall 117 (696-2271) , which will communicate with me.

Computing Services' Acceptable Use Policy: don't lend your account, or spam, or solicit see www.marshall.edu/ucs/CS/acceptuse.asp