

## HONS 158: Honors Physics II

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**Text:** “Physics for Scientists and Engineers”, Fifth Edition, by Tipler and Mosca

**Prerequisite:** HONS 157 or PHYS 201

**Lecture:** TR 8:00–9:15, SCIC 126

**Lab:** M 3:30-6:30, SCIC 106

**Office Hours:** MW 9:00-10:30, W 3:30-5:00.

**Web:** This class has a WebCT page at <http://webct.cofc.edu>. All students are automatically enrolled. This gives you access to a list where you can ask for help solving homework problems, finding a study partner, the latest homework assignment, etc. Your teacher also visits this list and may post hints, corrections, or changes to the homework. Some links, simulations and just-in-time quizzes may be added during the semester.

Note: your *college* email address is used to login to WebCT, not some other commercial email address you might have.

**Course Description:** The second semester of a two-semester sequence in General Physics using Calculus. Topics covered include electricity and magnetism, circuits, geometric and wave optics, special relativity, and introductory atomic and nuclear physics.

These courses cover approximately the same material as PHYS 201 & 202, and hence are accepted by the Physics, Chem/Biochem, Computer Science, Biology, etc., departments as fulfilling the General Physics (with Calculus) requirement in those programs.

**Attendance:** You are expected to attend all classes and labs. This is a very cumulative course and we will cover material at a fast pace. Missing several classes can put you seriously behind, so please contact me if you are ill and we will work together to keep you on track.

**Excessive unexcused absences ( $\geq 5$ ) will result in a grade of ‘WA’.** Be sure to initial the roll when it is passed around!

**You** are responsible for what is discussed in class. If you miss class the day assignments or new test dates are announced, it is your responsibility to find out about it.

You are expected to read the appropriate sections of your text *before* we discuss them in class. Rather than repeat verbatim what is in the text, we will work problems, answer questions, and talk about topics that your book does not discuss or which I want to handle differently.

**Homework:** Homework is *very* important! Learning physics is not a spectator sport; it is a full-contact activity. I do not expect you to get perfect scores on brand new material, but I do expect you to try hard. I count the homework quite highly to encourage your efforts to master the subject.

I want to see *solutions*, not just answers. Adding a sentence here and there explaining what you are doing, where you are going, what formula you are using, etc., will help me (and you) enormously. Units are important, and answers without correct units will not be counted as correct.

You will have several strongly recommended and one required problem per chapter. Your solution to the required problem is to be turned in at the start of class, and late homework will not be accepted except by pre-arrangement. You are **encouraged** to work together on the homework, but each person must turn in their own problem solution.

**Tests:** There will be three tests throughout the semester (see dates below). Each will be 75 minutes long. No symbolic math programs or extra formula cards are allowed, just scientific calculators, sharp pencils, and sharp minds. A formula sheet will be provided the class before the test, and will also be provided with the test.

You will be notified at least a week in advance (and the web page will be updated) if there are any changes in the test dates. A valid excuse from the Dean of Undergraduate Studies is required to make up a missed test.

The lowest test grade will be replaced by the final exam grade when computing your final grade, if this is to your advantage.

**Honor Code:** The Honor Code of the College of Charleston specifically forbids cheating, attempted cheating, and plagiarism. A student found guilty of these offenses will receive a failing grade (XF) in the course. Additional penalties may include suspension or expulsion from the College at the discretion of the Honor Board.

**Disabilities** If you have a documented disability and have been approved to receive accommodations through SNAP Services, please come and discuss this with me early in the semester.

**Grading:** The new grading scheme is new for all of us – some small adjustments may be needed. This is what I plan:

Homework:	20 %
Labs:	30 %
Tests:	30 %
Final:	20 %

A:	90-100	C+:	74-76
A-:	87-89	C:	70-73
B+:	84-86	C-:	67-69
B:	80-83	D:	64-66
B-:	77-79	F:	Below 64

	Date		Topic	Cpt.	Lab
Jan.	Tue.	9	Electric Fields I	21	
	Thu.	11	Electric Fields II	22	
	Mon.	15	<b>MLK Day</b>		
	Tue.	16	Electric Potential	23	
	Thu.	18	Electrostatic Energy	24	
	Mon.	22			Electrostatics
	Tue.	23	DC Circuits	25	
	Thu.	25	Magnetic Force	26	
	Mon.	29			Simple Circuits
	Tue.	30	Review	21-25.4	
Feb.	Thu.	1	<b>Test #1</b>	21-25.4	
	Mon.	5			Kirchhoff's Rules
	Tue.	6	Magnetic Fields	27	
	Thu.	8	Induction	28	
	Mon.	12			Magnetism
	Tue.	13	AC Circuits	29	
	Thu.	15	Maxwell's Equations	30	
	Mon.	19			Faraday's Law
	Tue.	20	Review	25-30	
	Thu.	22	<b>Test #2</b>	25-30	
	Mon.	26			Polarization
	Tue.	27	Properties of Light	31	
Mar.	Thu.	1	Geometric Optics	32	
	Mon.	5	<b>SPRING BREAK</b>		
	Tue.	6	<b>SPRING BREAK</b>		
	Thu.	8	<b>SPRING BREAK</b>		
	Mon.	12			Reflection & Refraction
	Tue.	13	Physical Optics	33	
	Thu.	15	Schrödinger Equation	34	
	Mon.	19			Thin Lenses
	Tue.	20	H atom	35	
	Thu.	22	Atoms	36	
	Mon.	26			Physical Optics
	Tue.	27	Molecules	37	
	Thu.	29	Solids	38	
Apr.	Mon.	2			Spectroscopy
	Tue.	3	Review	31-38	
	Thu.	5	<b>Test#3</b>	31-38	
	Mon.	9			Independent Lab Time
	Tue.	10	Special Relativity	39	
	Thu.	12	STR/Nuclear Physics	39-40	
	Mon.	16			RELLAB
	Tue.	17	Nucl. Phys./Elem. Particle Phys.	40-41	
	Thu.	19	Review	21-41	
	Mon.	23			Oral Presentations
	Sat.	28	<b>Final Exam</b>	21-41	