

Physics 116
College Physics II
Spring, 2013

Prerequisites:	Students must have taken and passed and have passed PHY115 or PHY121.
Instructor:	Charles Benesh
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Office Hours:	M 9-10 W 11-12 Th 1:30-2:30 F 4-5
Grading:	55% - 5 Exams 25% - Weekly Homework and Quizzes 20% - Weekly Laboratory
Text:	<i>College Physics</i> by Young and Geller, 8th edition with the MasteringPhysics online homework system- <i>www.masteringphysics.com</i>

- **Exams:** Periodic exams will be given during the laboratory period, per the attached schedule. Students who cannot take the exam at the scheduled time will have five points subtracted from their score.

The exams will consist of questions similar/related to the homework problems. Roughly half of the exam will consist of multiple choice/short answer problems, with the other half composed of “story” problems similar to those on the homework. Exams are closed book, but each student is allowed a single sheet(8 1/2 by 11) of formulas.

There will be three exams and a final given, with the final consisting of a regular hour exam plus a conceptual test of topics covered during the semester. For each student, the lowest of the 5 test scores will be replaced by the average of the other four. Zeroes may not be dropped.

- **Lecture Attendance:** Regular attendance in class is both expected and recommended. Generally, quizzes are only given when attendance falls below 70%. Therefore, the day you don't show up is more likely to have a quiz.....
- **Quizzes:** I reserve the right to give unannounced in class quizzes which will count towards the homework portion of your grade. No makeup quizzes will be given.
- **Homework:** There will be a homework assignment every week. Homework will be due at the beginning of class on the assignment's due date. The homework will consist of two types, online problems which may be accessed at the MasteringPhysics website(worth 1 point each) and problems from the book which must be turned in handwritten form(2 points each). *The online assignments must be completed online.*

Written homework assignments must have your name, the due date of the assignment, and a list of the the problems assigned written at the top of the front of the first page. Solutions to the problems must appear in the order they are assigned. If any of this information is missing, a point will be subtracted from your score on that assignment.

A correct solution to a homework problem will consist of *all* of the following:

- 1. A picture that summarizes and represents the problem, including relevant physical information. Depending on the nature of the problem, this may include “physics pictures” such as free body diagrams, motion diagrams, or circuit diagrams.
 - 2. A sentence or two describing why you chose to use those equations in this particular problem. (i.e. what were the keywords in the description of the problem that told you those equations were applicable? What physical principles are you trying to apply?)
 - 3. Correct use of the equations describing the physical situation to extract the correct answer.
- **Laboratory:** Attendance in the laboratory is required. If you cannot attend a lab meeting, makeup laboratories will be available at the instructor's discretion. Arrangement for makeup labs should be made immediately(in advance if possible), as lab equipment must be arranged in advance of the proposed makeup date, and may not be available later. *It*

is extremely unlikely(although not impossible) that I will agree to allow a student to makeup more than one lab during the course of the semester.

After each Lab, a report will be turned in for grading. Please note that the average score on the lab reports is usually around 80 per cent. This means that a student's lab score will not improve her overall course grade much, but a low lab score can significantly **LOWER** your grade.

- **Late Homework and Labwork:** Homework and Lab Reports that are turned in late will be penalized one point per day they are late, including weekends and holidays.

Class Schedule - College Physics II

Jan 16	Course Intro, Electric Charge
18	Coulombs Law
	LAB: Readiness Assessment
	READ: Chapter 17
Jan 21	NO CLASS
23	Electric Fields and the Principle of Superposition
25	Field Mapping
	LAB 1 - Coulomb's Law
	READ: Chapter 17
Jan 28	Electric Dipoles
30	Gauss' Law
Feb 1	Applications of Gauss' Law
	LAB 2 - Electric Field Mapping
	READ: Chapter 17
Feb 4	Electric Potential Energy
6	Electric Potential
8	Electric Potential & Electric Fields
	Exam I
	READ: Chapter 18
Feb 11	Capacitance
13	Capacitors
15	Capacitors in Series & Parallel
	LAB 3 - Electric Potential
	READ: Chapter 18
Feb 18	Energy Storage in Capacitors & Dielectrics
20	Electric Current
22	Resistance and Electro-Motive Force
	LAB 4 - A Few Good Capacitors
	READ: Chapter 18&19

Feb 25	Energy and Power in Electric Circuits
27	Kirchoff's Laws
Mar 1	RC Circuits
	LAB 5 - Resistivity
	READ: Chapter 19
Mar 4	Magnetic Fields
6	Charged Particles in Magnetic Fields
Mar 8	Forces on Current Carrying Wires
	Exam II - Chapters 23-26
	READ: Chapter 20
Mar 11-16	NO CLASS
Mar 18	Torque on a Current Loop
20	Biot-Savart Law
22	Ampere's Law
	Lab 6 - Current Events
	READ: Chapter 20
Mar 25	Applications of Ampere's Law
27	Magnetic Flux and Induction
29	NO CLASS
	Lab 7 - RC Circuits
	READ: Chapter 20-21
Apr 1	Faraday's Law
3	Displacement Current
5	Inductance
	LAB 8 - Magnetic Fields
	READ: Chapter 21
Apr 8	Self-Inductance
10	Energy Storage in Magnetic Fields
12	R-L Circuits
	Exam III
	READ: Chapter 21
Apr 15	L-C Circuits

17	NO CLASS
19	RLC Circuits NO Lab READ: Chapter 21-22
Apr 22	AC Circuits
24	Impedance and Reactance
26	Resonance LAB 9 - Geomagnetism READ: Chapter 22-23
Apr 29	Electro-magnetic waves
May 1	Energy in Electromagnetic Waves READ: Chapter 23
May 6	Last Day of Final Exam Week