PHYS-2020-003: General Physics II
Syllabus — Spring 2012

Course ID:	PHYS-2020-003
Lecture Times:	M W F 11:30 a.m. – 12:25 p.m.
Lecture Location:	Brown Hall, Room 370
Lecturer:	Dr. Donald Luttermoser
Office Hours:	W 2:00 p.m. – 3:00 p.m. (280 Brown Hall, 439-7064)
	F 2:00 p.m. – 3:00 p.m. (280 Brown Hall)
Textbook:	*College Physics, 9th Edition* by Serway & Vuille

Course Outline

Days	Topics	Readings
January 13, 18, 20	I. Electric Forces & Electric Fields	Chapter 15
January 16	**MLK Day – no class**	
January 23, 25, 27	II. Electric Energy & Capacitance	Chapter 16
Jan 30, Feb 1, 3	III. Current, & Resistance	Chapter 17
February 6	**Exam 1** (Sections I-III)	Chapters 15-17
February 8, 10	IV. Direct Current Circuits	Chapter 18
February 13, 15, 17	V. Magnetism	Chapter 19
February 20, 22, 24	VI. Induced Voltage and Inductance	Chapter 20
February 27	**Exam 2** (Sections IV-VI)	Chapters 17-19
Feb 29, Mar 2	VII. Vibrations & Waves	Chapter 13
March 5, 7, 9	**Spring Break – no classes**	
March 12, 14, 16	VIII. Sound	Chapter 14
March 19, 21, 23	IX. Electromagnetic Radiation (Photons)	Chapter 21 (partial)
March 26, 28, 30	X. Interaction of Photons with Matter	Chapter 28 (partial)
April 2	**Exam 3** (Sections VII-X)	Chapters 21, 28, 22
April 4, 6	XI. Reflection & Refraction of Light	Chapter 22
April 9, 11, 13	XII. Mirrors & Lenses	Chapter 23
April 16, 18, 20	XIII. Wave Optics	Chapter 24
April 23, 25, 27	XIV. Optical Instruments	Chapter 25
April 30*	**Final (3:50 p.m. – 5:50 p.m.)**	Chapters 13-25, 28

$\star$ — Note that the Final falls on Monday, April 30th at the time listed above. The Final covers the entire course.

For other university information, please consult the ETSU supplemental syllabus attachment at:
http://www.etsu.edu/reg/academics/syllabus.aspx
The web page for this course can be found at:
http://www.etsu.edu/physics/lutter/courses/phys2020/index.htm

Overview

General Physics II is the second semester of a one-year sequence of courses in physics — a continuation of General Physics I. **Students should have already taken PHYS-2010 before taking this course.** Topics will include electricity, magnetism, wave motion, optics, atomic, and particle physics. The main goal of this course is to demonstrate to you how the nature operates. **General Physics II is a problem-solving course, that is, the measure of a student's progress is demonstrated by the ability to solve algebraic and trigonometric problems, and not just to quote facts, laws and formulas.** The assigned homework assignments are designed to help you develop these skills and the exams will test you on these skills. It is assumed that you have a reasonable working knowledge of algebra and trigonometry at the General Physics I level. If you suspect your math preparation is inadequate by all means, please consult with me during my office hours (or at some prearranged meeting time). You are expected to have (*and know how to use*) a good *scientific* calculator — especially for the exams. The Department does not have calculators to loan, and the *sharing* of a calculator with your classmates on exams is **NOT** permitted. The book store sells such calculators.

Exams & Homework

There will be 3 exams throughout the semester, plus a comprehensive final on the dates listed on the first page of this syllabus. Each will cover material prior to the test and be taken during class time as shown in the table below. Each exam will be worth 20% and the final worth 30% of your course grade. Note that all physical constants and formulae that you may require will be supplied on the exams. Otherwise, the exams are closed book and notes – you will not be allowed to consult any external written materials. An exception to this rule concerns the final. You will be allowed to bring one 8.5x11" sheet of paper to the final with anything you wish to write on it ("examples" might be a better idea than a grocery list).

Exam	Note Sections	Textbook Chapters	Date Given
1	I, II, III	15, 16, 17	Monday, Feb 6, 2012
2	IV, V, VI	18, 19, 20	Monday, Feb 27, 2012
3	VII, VIII, IX, X	13, 14, 21, 28	Monday, Apr 2, 2012
Final	$\frac{1}{2}$ (XII–XIV) + $\frac{1}{2}$ (I–XI)	$\frac{1}{2}$ (23–25) + $\frac{1}{2}$ (13–22, 28)	Monday, Apr 30, 2012

Sickness and Make-Up Exams: If you are sick, do not come to school! If this occurs on exam day, you will be allowed to take a *make-up exam*. Note, however, that unlike the "in-class" exams which contain a combination of multiple-choice questions and written problems, the "make-up" exams will be problems only. Don't let this scare you off, many people do worse on the multiple-choice questions than on the problems. **Stay at home if you are sick!!!**

There will be 4 homework sets assigned throughout the semester composed of two sections of questions. The first section will be questions generated by the CAPA software package and accessed through the Department's CAPA web site (see **http://capa.etsu.edu/**). You will be given further information about CAPA during lecture. These CAPA questions must be accessed through a web browser and will be graded. If you don't have access to the web at home, you can use any of the computer labs on campus. The second section of problems will not be graded and will have solutions posted on the course web page. Try to do these problems by yourself before viewing the solutions on the course web page. Doing both sections of questions will be a big help in studying for the exams and the CAPA problems will be used in calculating your final grade for the course.

Each exam will have a 5 point extra credit question on it (the final will have two 5 point questions). **No other extra credit project(s) will be allowed, so don't even ask.**

Tutoring and Supplemental Help

Many students find General Physics I & II very challenging and have a difficult time understanding the principles of physics and solving physics problems. Mainly, this is due to a lack of training of logical thought skills at secondary school. Due to this, there are a variety of ways to get additional help with this course.

1. The Center for Academic Achievement offered by ETSU (see http://www.etsu.edu/scs/uts/default.asp on the web).

2. Assistance from the Professor during office hours in Brown Hall 280 (see Page 1 of this syllabus).

3. Review sessions prior to each exam (date and times to be determined during lecture the week prior to the exam).

4. Tutors for Hire can be obtained by the individual student taking *General Physics*. These tutors are typically either current or past physics majors who charge a fee for their services. Most of the current physics majors can be found in Room 260 of Brown Hall.

With these supplemental instruction options, students can gain valuable help with this difficult course.

Grading

The format of the exams will be similar to the sample exams on the course web page. Many of the "full-length" problems you will get on the exams will be modified versions of the example problems in the notes and textbook, and the supplemental homework problems presented on the course web page. From these three sources, you will have access to anywhere from 10 to 25 examples for each section of the notes. This should be more than sufficient to fill your needs for studying for the exams. The grading system will be based by the following formula:

$$\textbf{Final Course Grade} = \left[0.20 * \left(\frac{\text{Exam 1}}{40}\right) + 0.20 * \left(\frac{\text{Exam 2}}{40}\right) + 0.20 * \left(\frac{\text{Exam 3}}{40}\right) + 0.30 * \left(\frac{\text{Final}}{80}\right) + 0.10 * \left(\frac{\text{Homework}}{\text{Homework Total}}\right)\right] * 100\%$$

The final course grades will be based on the following scale:

			A	=	90% or better	**A–**	=	88–89.9%
B+	=	86–87.9%	**B**	=	76–85.9%	**B–**	=	73–75.9%
C+	=	70–72.9%	**C**	=	62–69.9%	**C–**	=	59–61.9%
D+	=	56–58.9%	**D**	=	50–55.9%			
			F	=	Less than 50%			

Note that a failing grade also will be given if the student has engaged in any form of academic dishonesty. Finally, you should not talk to your classmates during the class — that is no student will be allowed to disrupt the class. The only verbal communication allowed is asking the professor a question. **IMPORTANT NOTE: This also includes the ringing of cell phones! Turn your cell phones <u>off</u> before coming into class!** If you are caught disrupting the class once, you will be warned. A second time will result in you being dismissed from the current lecture. A third and final time will result in you failing the course. Be courteous to your neighbors, they are paying hard earned money to take this course.

Mental Health: Students often have questions about mental health resources, whether for themselves or a friend or family member. There are many resources available on the ETSU Campus, including: ETSU Counseling Center (423) 439-4841; ETSU Behavioral Health & Wellness Clinic (423) 439-7777; ETSU Community Counseling Clinic: (423) 439-4187.

- If you or a friend are in immediate crisis, call 911.
- Available 24 hours per day is the National Suicide Prevention Lifeline: 1-800-273-TALK (8255).