PHYS 112-4 General Physics II **Spring 2013**
Instructor: Dr. Cattell Office: W4-33

General Physics II is the second semester of College Physics at Community College of Philadelphia. This is an algebra-trigonometry based course. The prerequisite is Physics 111, General Physics I (or equivalent), with a grade of at least a C.

The textbook used for this course is *Physics*, ninth edition, by Cutnell and Johnson. The publisher is John Wiley & Sons, Inc.

Chapters

Chapter 18 Electric Forces and Electric Fields

Chapter 19 Electric Potential Energy and the Electric Potential

Chapter 20 Electric Circuits

Chapter 21 Magnetic Forces and Magnetic Fields

Chapter 22 Electromagnetic Induction

Chapter 23 Alternating Current Circuits

Chapter 24 Electromagnetic Waves

Chapter 25 The Reflection of Light: Mirrors

Chapter 26 The Refraction of Light: Lenses and Optical Instruments

Chapter 27 Interference and the Wave Nature of Light

Resources

1. Library References
   a. *Fundamentals of Physics* (ninth edition) by Halliday, Resnick and Walker; Wiley
   b. *University Physics* (any edition) by Sears, Zemansky and Young; Addison-Wesley

2. Online Resources
   a. Numerous resources can be found in WileyPLUS. See the first few pages of your text and the demo at http://www.wileyplus.com
   b. The Student Companion Site for Cutnell and Johnson's *Physics*: http://www.wiley.com/college/cutnell/ After the page loads click on the "Student Companion Site" link to the right of the picture of the text.

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Tests

Tests given in this course:

1. Seven half-hour quizzes during the semester. The first is on Friday, January 25.
   (See the homework assignments for the dates of the other quizzes.)

2. Five hour tests during the semester. The first is Friday, February 1.
   (See the homework assignments for the dates of the other tests.)

3. A comprehensive final exam at the end of the semester.

Determination of Grade

Homework 10%
Lab Reports 20%
Quizzes 20%
Tests 25%
Final 25%

If you take all the hour tests, your lowest hour test grade will be dropped. At the end of the course you will have a course average calculated from the averages of your homework, lab reports and hour test grades and your grade on the final (with the weights shown above). Your course average will be a number between 0 and 100. If your laboratory average is at least 60% the following scale determines the letter grade you receive for the course:

90-100 A
80-89 B
70-79 C
60-69 D
Below 60 F

If your laboratory average is less than 60% you will receive an F regardless of your overall course average.

Homework

The only way to learn a subject is to practice it yourself. It is therefore important that you do the homework and turn it in. Your test scores will reflect how well you learned the material assigned for homework. (Note that homework, quizzes and tests together account for 55% of your final grade.)

Laboratory Sessions

You should be scheduled for a two-hour laboratory session, which meets once a week. You are required to have Volume II of the Physics Laboratory Instructions, which is available in the Community College of Philadelphia Bookstore.

Attendance

Class attendance will be taken. It is important that you do not miss class unnecessarily. If you miss two consecutive weeks of class the instructor may initiate an official "drop" form for you and send it to the Registrar who will inform you and change the permanent record accordingly.

Final date to drop courses without penalty of an F grade:
Monday, April 8, 2013.

PHYS 112-4 Homework **Spring 2013**
Text: *Physics* by Cutnell and Johnson, ninth edition Dr. Cattell

Homework is to be done through WileyPLUS. WileyPLUS can be accessed at http://edugen.wiley.com/edugen/class/cls309472/ or through your instructor's web page. You must first register for WileyPLUS using the instructions that came in the package with your textbook and lab manuals. See your instructor if you have questions or need help. The problem numbers given below are for your reference and practice before you submit your answers through WileyPLUS. (*Note:* The problems will be the same but numerical values may be different when you use WileyPLUS.).

You can obtain help with homework from your class instructor during his office hours. You may also obtain help from student tutors and the Instructional Aide in room W4-23B.

Additional resources for students can be found at the Student Companion Site: http://www.wiley.com/college/cutnell/

After the page loads click on the "Student Companion Site" link to the right of the picture of the text.

Homework should be done through Wiley PLUS by the date specified below. ***Homework is due by 11:00 PM on the indicated due date.*** You will not be able to work on the assignment after this time.

Chapter 18 Electric Forces and Electric Fields
1, 3, 9, 11, 19, 31, 35, 41, 47, 67, 69, 73

Homework for Chapter 18 is due on Friday, January 25. Quiz 1 is on January 25.

Chapter 19 Electric Potential Energy and the Electric Potential
1, 3, 7, 11, 17, 27, 31, 33, 35, 37, 51, 62

Homework for Chapter 19 is due on Friday, February 1. Test 1 is on February 1.

Chapter 20 Electric Circuits
1, 5, 11, 17, 25, 27, 31, 37, 41, 45, 53, 55, 110, 113, 121

Homework for Chapter 20 is due on Friday, February 8. Quiz 2 is on February 8.

Chapter 20 Electric Circuits (continued)
65, 69, 73, 77, 81, 85, 87, 93, 95, 97, 103

The remainder of the homework for Chapter 20 is due on Friday, February 15. Test 2 is on February 15.

Chapter 21 Magnetic Forces and Magnetic Fields
1, 3, 9, 11, 17, 19, 23, 27, 31, 37, 40, 47, 49, 55, 59

Homework for Chapter 21 is due on Friday, February 22. Quiz 3 is on February 22.

PHYS 112-4 Homework **Spring 2013**
Text: *Physics* by Cutnell and Johnson, ninth edition Dr. Cattell

Chapter 22 Electromagnetic Induction
3, 5, 15, 17, 19, 23, 29, 35, 37, 41, 47, 49, 55, 61, 65

Homework for Chapter 22 is due on Friday, March 1. Test 3 is on March 1.

Chapter 23 Alternating Current Circuits
1, 5, 11, 13, 17, 19, 21, 22, 25, 31, 37, 49

Homework for Chapter 23 is due on Friday, March 15. Quiz 4 is on March 15.

Chapter 24 Electromagnetic Waves
1, 3, 7, 9, 11, 15, 17, 19, 25, 29, 33, 35, 39, 41, 51

Homework for Chapter 24 is due on Friday, March 22. Test 4 is on March 22.

Chapter 25 The Reflection of Light: Mirrors
3, 5, 8, 9, 13, 17, 19, 23, 25, 27, 41

Homework for Chapter 25 is due on Friday, March 29. Quiz 5 is on March 29.

Chapter 26 The Refraction of Light: Lenses and Optical Instruments
1, 3, 5, 7, 11, 13, 15, 18, 19, 27, 29, 107

Homework for Chapter 26 is due on Friday, April 5. Quiz 6 is on April 5.

Chapter 26 The Refraction of Light: Lenses and Optical Instruments (continued)
33, 35, 36, 47, 51, 55, 59, 63, 69, 71, 79, 83, 87, 93

The remainder of the homework for Chapter 26 is due on Friday, April 12. Test 5 is on April 12.

Chapter 27 Interference and the Wave Nature of Light
3, 7, 9, 11, 17, 19, 23, 25, 29, 37, 39, 47

Homework for Chapter 27 is due on Friday, April 19. Quiz 7 is on April 19.

The Final Exam will be given during the week of April 29, 2013.

Policies for Missed Tests, Quizzes and Repeated Work

The following policy applies to tests and quizzes given during the semester. The word "test" used below refers to *both* hour tests and half-hour quizzes.

All Tests Taken

If you take all the tests, your lowest test grade is discarded when determining your average at the end of the semester.

One Test Missed

If you miss one test, you are not allowed to make it up. Instead, the grade of the missed test is counted as the lowest grade and discarded as stated above. (This policy is followed *regardless of the reasons* you missed the test.) All remaining test grades are counted in the average.

More Tests Missed

If you miss more than one test, the first test you missed is handled as stated above under "One Test Missed" and the rest that you missed are counted as zeros and are not dropped. (Again, this policy is followed *regardless of the reasons* you missed the tests.)

Remarks

You should always be aware of the test schedule. You will always be told in advance when you are going to have a test.

If you had a grade of at least 70 in the last test you took[1] in the course and you know in advance that you will not be able to take the next test at its scheduled time (due to work, a doctor's appointment, etc.) let the instructor know as soon as possible. The instructor may let you take the test at an alternate time. If you do not take the test at the alternate time, the instructor, at his discretion, may drop the test or count the test as a zero according to the policy given above. *You may have only one make up during the semester.*

(*Note:* Tests taken during the class period *before* the scheduled time for a test are not counted as make up tests. Let the instructor know by the day before the test if you need to take the test before its scheduled time.)

Repeated Work

Tests once taken cannot be repeated, including the Final. Work resubmitted after the due date will not be accepted; only work submitted by the due date will count as part of your grade.

[1]If you are requesting an alternate time for the *first* test you have to take the second test at its regularly scheduled time and obtain a grade of at least 70.

COMMUNITY COLLEGE OF PHILADELPHIA
DEPARTMENT OF PHYSICS
POLICY CONCERNING
ACADEMIC DISHONESTY

American higher education and science have an old and strong tradition of honesty. There is no room in academia or science for cheating or any other type of academic dishonesty. Many of the nation's universities and colleges rely on an honor system concerning examinations; to be found cheating during an examination is the basis for immediate expulsion.

Cheating may be defined as (a) looking at another student's examination paper, (b) asking another student for any type of help during an examination, (c) bringing notes of any type not allowed by the instructor to an examination, (d) presenting work done by another as your own (plagiarism), (e) falsification of information including laboratory data, (f) lying, (g) making notes during an examination on scrap paper to give to another student, (h) stealing an examination, (i) asking another person for help on take-home examinations, (j) writing notes on desk tops, (k) passing calculators that contain information to another student, (1) changing answers on an examination after it has been turned in, and (m) having another student take an examination for you. Any of these violations constitutes a highly serious offense which will ultimately result in some type of disciplinary action.

Persons properly trained in science, perhaps more so than the general public, find scientific and academic cheating highly offensive. How can one trust the laboratory data or scientific findings of a person known to cheat? Will this person make an honest scientist or engineer? Does this person or his personal work have any integrity? One single instance of cheating can cast doubt on everything that person does, and it can follow one for a lifetime.

Students caught cheating will find that it may result in (a) a grade of zero on the test or assignment, (b) removal from the course, (c) your name being reported to the Office of Academic Affairs, with the recommendation that you be expelled from the college. If you are not expelled, all your present and subsequent professors will be notified of your academic dishonesty. Last, you will never receive any letter of recommendation from any Community College of Philadelphia Physics Department faculty member.

Now think it over, is cheating worth the risk of having the above happen to you? If you think these things won't happen, you are sadly mistaken. You will find out the hard way. The great majority of students are honest, and cheating is not usually a problem. We apologize to those of you who work honestly that we have found it necessary to write this statement because of a few who are dishonest.

The above is based on the Community College of Philadelphia Department of Chemistry Policy Concerning Academic Dishonesty dated September 1994.

Are You Overloaded?

A common problem among college students is overloading – trying to handle more work than is possible. If you work at a job or have other time-consuming responsibilities while attending college it is important that you do not take on excess course work. The following describes a simple formula you can use to determine if you are overloaded.

Study Time – You must allow yourself ample study time for the courses that you take. This includes time for homework assignments. As a rule of thumb multiply the number of credit hours that you take by 2. This gives the *minimum* number of hours per week you should spend studying.

Time in Class – You must allow for the time you spend at the College attending courses. This is the number of hours you are present in class (and in lab) per week.

Hours Working – You must allow for the time you spend at work and the time you spend for other *regularly-scheduled* responsibilities that do not allow you to do college work. Add together the number of hours you spend on all these activities per week.

Add together your Study Time, Time in Class and Hours Working. This total **should not exceed 60 hours per week**. If the total exceed 60 hours per week, your course work will suffer and your grades will meet neither your expectations nor your ability.

Example 1 A student works part-time 15 hours per week and is taking 12 credits. The time she spends in class and lab amounts to 15 hours per week.

Study Time:	$2 \times 12 = 24$ hours/week
Time in Class:	15
Subtotal:	39 hours/week
Hours Working:	15
Total:	54 hours/week

This student is not overloaded.

Example 2 A student works part-time 25 hours per week. He also spends one hour every weeknight helping an elderly relative with housework. He is taking 10 credits and spends 12 hours per week in class and lab.

Study Time:	$2 \times 10 = 20$ hours/week
Time in Class:	12
Subtotal:	32 hours/week
Hours Working:	30
Total:	62 hours/week

This student is overloaded and needs to either: 1) reduce his hours working or 2) reduce the number of credits he is taking, whichever is appropriate for his situation.

Student Learning Outcomes for Physics 112

1. Demonstrate an understanding of basic concepts and terminology of electricity and magnetism.

2. Demonstrate an ability to use the concepts of electricity and magnetism, together with concepts of work and energy, to solve problems involving the mechanics of charged particles.

3. Demonstrate an understanding of the concepts of networks and circuit theory by solving basic problems of networks and DC and AC circuits.

4. Demonstrate an understanding of the theory of magnetic fields and forces.

5. Calculate magnetic flux and use Faraday's law and algebra to calculate average currents induced by changing magnetic flux.

6. Demonstrate an understanding of the phenomena that give rise to light waves and solve problems related to the refraction and diffraction of light.

Dr. David F. Cattell, Spring 2013

Office: W4-33

Office Hours: 10:00 AM to 11:30 AM on Tuesdays and Thursdays
10:00 AM to 11:00 AM on Wednesdays
3:00 PM to 4:00 PM on Wednesdays
1:50 PM to 2:50 PM on Fridays

Office Telephone: (215) 751-8417
Fax: (215) 496-6059

Internet email: dcattell@ccp.edu

D. Cattell Web page: http://faculty.ccp.edu/faculty/dcattell/

To Students Receiving Title IV Financial Aid Funds

Effective Fall 2000, students who receive Title IV financial aid funds and who withdraw from ALL their classes before completion of 60% of the term, i.e., the 10th week (or its equivalent for summer terms) may be required to return all or a portion of their financial aid award. If it is determined that funds must be returned to the financial aid programs, students must make satisfactory payment arrangements within 45 days of notification or they become ineligible for further financial aid funding.

College Catalog

The College catalog contains, among other things, the current College calendar, information on tuition and fees, information on academic programs, admissions information, financial aid information, College notices, student policies, information on educational programs and course descriptions.

The catalog is available online at http://www.ccp.edu.

Telephone Numbers

Main Switchboard: 751-8000
Academic Advising: 751-8893
Student Activities: 751-8210
Bookstore: 751-8150
Security: 751-8111

Declaration of Receipt of the Physics 112-4 Course Syllabus
Spring, 2013

I, the undersigned student, attest that I received the following documents from the course instructor, Dr. David Cattell, for section 004 of the Physics 112 course, General Physics II, at Community College of Philadelphia for the Spring 2013 semester:

- Course outline titled "General Physics II" which includes an explanation of the grading procedure for the course.
- A copy of the homework assignments which indicates when assignments are due, how they are to be submitted and the dates of hour tests and quizzes.
- A document titled "Policies for Missed Tests, Quizzes and Repeated Work" which includes a description of the procedure that will be followed if a student misses a test or a quiz or resubmits work after the due date.
- A document titled "Community College of Philadelphia Department of Physics Policy Concerning Academic Dishonesty" which includes a definition of cheating and a description of the procedure that will be followed if a student is caught cheating.
- A document titled "Are You Overloaded?" which cautions against overloading and provides a formula for a student to determine if he or she is overloaded.
- A document titled "Student Learning Outcomes for Physics 112" which summarizes learning objectives for the course.
- A document titled "Dr. David F. Cattell, Spring 2013" which gives the course instructor's Website URL, email address, fax number, office telephone number, office location and office hours for this semester.

I also attest that I understand the contents of these documents and agree to abide by any policies they describe.

Name (printed) _____ Signature _____

ID Number _____ Email _____ Date _____

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