Syllabus for Physics 140-03, Spring 2012

Instructor: Dr. John D. Shaw **Office: Merion Science Center 120**
e-Mail: jshaw2@wcupa.edu **Office Hours: MW 3:00 – 5:00***
T 1:00 – 3:00*
or by appointment

Lectures: MWF 2:00 – 02:55 **Merion Science Center 112**

Laboratory Sections (in Merion Science Center 124)

SecNum	Day	Start	Finish	Instructor
51	Wed	01:00 PM	02:55 PM	Galatola
52	Wed	03:00 PM	05:00 PM	Galatola
53	Thu	03:00 PM	05:00 PM	Shaw
54	Thu	09:00 AM	10:55 AM	Shaw
55	Thu	11:00 AM	12:55 PM	Shaw
56	Thu	01:00 PM	02:55 PM	Sudol
57	Fri	09:00 AM	11:00 AM	Feierman

Class webpages: Found on West Chester University's D2L site.
You need to be registered to see the course website!

Text & Resources:

Required textbooks: *College Physics: A Strategic Approach, Volumes 1 & **2**, Knight, Jones, and Field* Available at bookstore.

Optional textbook: College Physics: A Strategic Approach, Student Workbook, 2nd Edition, Volume 2

Lab Manual: Available at bookstore. **(Required)**

Desire2Learn (D2L) *Website:*

This course has a Desire2Learn website associated with it, where announcements and course documents will be posted. Report any problems with Desire2Learn by emailing d2l@wcupa.edu or visiting the ACC student helpdesk in 20 Anderson Hall (610-436-3065).

Course Description and Content:

Physics 140 is the second of two courses that serve as an introduction to the fundamental concepts in physics applicable to the world that we can perceive with our senses. Some of the topics presented in this course are oscillation and electrostatics, electronics, magnetism, optics, and nuclear physics. A passing grade in PHY 130 is the prerequisite for this course.

Prerequisite: Successful passing grade in PHY130 (preferably C or better), mastery of algebra, geometry and trigonometry skills.

* Subject to change, check the course website (D2L) for current office hours.

Course Objectives:

- Develop an understanding (including concepts and mathematical methods) needed to solve problems in fundamental electrostatics, electronics, magnetism, optics and atomic physics.
- Exercise and develop reasoning skills.
- Exercise and develop problem-solving skills.
- Exercise and develop metacognitive skills.

Grading of the Course:

The weight of each portion of the course is as follows:

Three Midterm Exams:	45% (3 x 15% each)
Final Exam:	25%
Total Quizzes:	20%
Total Labs:	10%

Each lab is graded on a point scale of 0 to 10 or 15 (dependent on the lab), and your total Lab Grade is the average of your individual lab grades after your worst lab has been dropped.

Each quiz is graded on a scale of 0 to 10, and your total Quiz Grade is the average of your individual quiz grades after the worst grade has been dropped.

At the end of the semester, your total numerical course grade is converted into a letter course grade based on the following scale:

A:	93 and above	C:	73 – 77
A-:	90 – 93	C-:	70 – 72
B+:	87 – 90	D+:	67 – 70
B:	83 – 87	D:	63 – 67
B-:	80 – 83	D-:	60 – 63
C+:	77 – 80	F:	Below 60

Course Requirements:

Exams:

There will be **three midterm exams:** *tentatively* scheduled for February 22, March 26, and April 25. There will be a cumulative **final exam,** two hours long, given during finals week at a date TBD (check D2L later in the semester). Midterm #1 will *most likely* cover chapters 20, 21 and 22. Midterm #2 will most likely cover chapters 23, 24, and most of Chapter 25. Midterm #3 will most likely cover the end of chapter 25 and chapters 17 & 18. The final exam will be cumulative.

Examinations will be **closed book**, i.e. memory aids, class notes, textbooks, etc. are not allowed. Simple scientific calculators may be used in exams. If you have other than a simple scientific calculator, you must obtain approval to use it and clear its memory before any or exam.

Homework:

Reading: The Course Schedule shows what topics and sections of the book are to be covered in each lecture/week. It is expected that you will have read the relevant sections *before* each lecture. Note that the course may proceed faster or slower than the tentative schedule.

There will be about ten to fifteen problems posted at least one week before the "due date" and these *will not* be graded. Homework solutions will be posted on *D2L* the night of the due date. Problems and "due dates" will be posted in D2L, as well.

Quizzes:

Most weeks, there will be a take home quiz given at the end of lecture. It will be due either in person or be received electronically by the beginning of the next lecture. **Late submissions will not be accepted.** The quiz will consist of one or two problems. The material will be from the chapters of the textbook previously covered in lecture and homework assignments. Altogether there will be 10-13 such quizzes throughout the semester, your worst quiz grade will be dropped. *The quizzes will count for a total of 20% of the course grade*.

Partial credit will be given for quizzes and exam solutions, provided the correct logical steps of the solution can be identified (neatness helps). No credit will be given if only the final answer is written without the steps leading up to it.

Laboratories:

During the semester, there will be a total of 9 labs. Labs will be conducted by a lab instructor (see above) and you will receive instruction on how to complete labs there.

For each student, the worst of the lab grades will be dropped and the others averaged to get the total Lab Grade. *The total Lab Grade counts for 10% of the total Course Grade*. If a student misses one lab, that will count as the lowest lab grade and be dropped. **Important**: *If a student misses two labs, his or her Course Grade will be lowered by a full letter grade. If a student misses three labs, he or she will fail the course*.

Missed labs can be made up only in the case of an excused absence approved by your individual lab instructor. This needs be arranged with your instructor first.

Lab grades ***cannot*** be transferred from a previous attempt at this course.

COURSE POLICIES:

Attendance in Lecture

All students are expected to attend all lectures unless officially excused. If you are absent, **it is your responsibility to find out from other students what you missed.** Missing lectures **will not excuse you from any material** covered nor excuse homework, quizzes, labs, or exams. In cases of extreme illness or emergency that require prolonged absence, you are responsible for contacting the appropriate Dean whose office will contact your professors and make appropriate recommendations.

Missed Exams or Quizzes

Absences for those religious holy days that are not in the university's Academic Calendar and absences for university athletic competitions are excused absences only if the instructor is notified in the first two weeks of class. Most other kinds of excused absence only require that the instructor be notified in advance. There are some emergency situations where it is impossible to inform the instructor in advance and will be dealt with according to University policy. **In general, quizzes cannot be submitted late nor can exams be "made up".**

Academic Honesty and Other General Policies

You are **required** to read and comply with the University's Policy on Academic Dishonesty. We reserve the right to photocopy exam papers before returning them to you after they are graded. During exams and quizzes you are only allowed to have out writing utensils and simple calculators. You are not to have out any other kinds of devices or any pieces of paper other than those provided. We will supply both the test papers and an adequate supply of writing and scrap paper.

For questions regarding Academic Dishonesty, the No-Grade Policy, Sexual Harassment, or the Student Code of Conduct, students are encouraged to refer to their major department's handbook, the Undergraduate Course Catalogue, the Rams Eye View, or the University Web Site. Please understand that improper conduct in any of these areas will not be tolerated and may result in immediate ejection from the class.

ADA Policy Statement

West Chester University will make accommodations for persons with disabilities. Consult the Office of Services for Students with Disabilities (ext. 3217) and bring the resulting documentation to the instructor.

Intellectual Property Statement

The instructor for this course utilizes copyrighted materials under the "Freedom and Innovation Revitalizing United States Entrepreneurship Act of 2007" (Fair Use Act). Apart from such copyrighted materials, all other intellectual property associated with this course is owned and copyright protected by the instructor, including, but not limited to, lectures, course discussions, course notes and supplementary materials posted or provided to students authored by the instructor, assessment instruments such as quizzes and exams, and Power Point presentations. No recording, copying, storage in a retrieval system, or dissemination in any form, whether electronic or other format, by any means of the intellectual property of the instructor, either in whole or in part, is permitted without the prior written permission of the instructor. When such permission is granted, it must specify the utilization of the intellectual property and all such permissions and waivers shall terminate on the last day of finals in the semester in which this course is held.

Links and references to on-line resources provided by the instructor may lead to other sites. The instructor does not sponsor, endorse or otherwise approve of any information appearing in those sites, nor is responsible for the availability of, or the content located on or through, external sites. Apart from materials used in accordance with the Fair Use Act, the instructor takes no responsibility for material that is otherwise offered at web sites and makes no warranty that such material does not infringe any third party rights. However, should any of this type of material be present and this fact is brought to the attention of the instructor, they will remove references to it from course materials.

Withdrawal Notice

A syllabus constitutes a contract between student and instructor. Your continued enrollment after the January 28 drop deadline indicates that you accept all instructional practices, requirements, and policies. If you find the standards to which you will be held accountable too rigorous, if you are unable to reliably access the internet to use Desire2Learn, or if an ongoing scheduling conflict prevents you from attending regularly and punctually, you should officially withdraw (grade "W") through the Registrar's Office by the October 28 course withdrawal deadline. You are responsible for checking your grades before this withdrawal deadline so you aren't surprised by your standing as the end of the course approaches.

Working Together

You are encouraged to study together and work on homework together. Homework is for the purpose of learning to do problems. If you just copy someone else's homework answers *without having tried to do the problems yourself*, you will learn very little from the homework, and you will be at a disadvantage on the tests, where you will have to rely on your own understanding. My suggestion is that you try the problems yourself before asking someone for help. If you get stuck, please post it on the discussion forum on Desire2Learn (and/or come to my office hours); please do not email me. Other students will very likely share your question, and you can learn this material much faster if you work with your peers. Again, I will read and respond in the Desire2Learn discussions. By getting stuck, and then being shown how to overcome that obstacle, you learn more, and what you learn sinks in much better.

Please make use of my office hours, and don't hesitate to email me about any of the following:

- To schedule a time to meet if you cannot make it to any of my office hours
- Questions/feedback related to class organization, syllabus, and grading
- Notification of upcoming excused absences
- Other course-related matters you do not wish to share with your classmates

If you want to ask me a question directly, please do the following: (1) Formulate a proper question and put it in writing. (2) Search for the answer to that question in the information that is already available to you (all documents will be posted on Desire2Learn in electronic form). (3) If you cannot find the answer to your question in a reasonable amount of time, then determine the best method to contact me (email, or visit). This will result in the most efficient use of your time and mine.

Additional help with physics is available through three different forums: the Learning Assistance & Resource Center, the Department of Physics, and private tutors. More information about tutoring will become available during the second week of the semester.

TENTATIVE SCHEDULE*

Week		Notes	Mon. Lecture	Wed. Lecture	Fri. Lecture	Lab	Text	HW
1	1/23/2012	End of Drop - 1/28	Class Introduction Electric Charge	Coulomb's Law	Electric Fields	No Lab	20.1 - 20.4	
2	1/30/2012		Electric Fields and Resultant Forces	Conductors Electric Potential	Electric Potential	1: Electrostatics	20.5 - 21.3	HW 1 due 1/30
3	2/6/2012		Electric Potential and Fields Conservation of Energy	Electric Potential and Electric Field	Capacitors Dielectrics	2: Error Analysis	21.3 - 21.9	HW 2 due 2/6
4	2/13/2012		Electric Current The Electric Battery	Electric Potential, Current and Resistance	Ohm's Law	No Lab	22.1 - 22.4	HW 3 due 2/13
5	2/20/2012		Circuit Analysis I	EXAM 1 (Chapters 20 - 22)	Circuit Analysis II	3: Ohm's Law	22.5 - 23.4	HW 4 due 2/20
6	2/27/2012		Circuit Analysis III	Capacitors	RC Circuits	4: Resistance Circuits	23.5 - 23.7	HW 5 due 2/27
7	3/5/2012		Magnetism	Electric Charges in Magnetic Fields	Electric Currents in Magnetic Fields	No Lab	24.1 - 24.2 24.5 -24.7	HW 6 due 3/5
	3/12/2012	**Spring Break**						
8	3/19/2012		Mangetic Fields Generated by Electric Currents	Motional EMF Magnetic Flux	Faraday's Law Lenz's Law	5: Magnetism	24.3 - 24.4 25.1 - 25.4	HW 7 due 3/19
9	3/26/2012	Last Day to Withdrawal - 3/30	EXAM 2 (Chapters 23 - 25.4)	Alternating Current	Electromagnetic Waves I	*Lab Pratical*	26.1 - 26.2 25.5	HW 8 due **3/24**
10	4/2/2012		Electromagnetic Waves II	Interference	Diffraction	No Lab	17.1 - 17.3	HW 9 due 4/2
11	4/9/2012		Light Rays	Reflection Mirrors I	Mirrors II	6: Spectra	17.5 - 17.6 18.1,2,6	HW 10 due 4/9
12	4/16/2012		Refraction Snell's Law	Thin Lenses I	Thin Lenses II	7: Diffraction	18.3 - 18.5 18.7	HW 11 due 4/16
13	4/23/2012		The Camera The Eye	EXAM 3 (25.5,26.1&2, 17.1 -18.7)	The Eye Magnifying Lens	9: Lenses	28.1 - 29.2	HW 12 due 4/23
14	4/30/2012		Telescopes & Microscopes Photons	Photoelectric Effect De Broglie Waves	Energy Quantization Atomic Structure	*Lab Pratical*	28.1 - 28.6	HW 13 due 4/30
	5/7/2012			FINAL EXAM???		No Lab		HW 14 due 5/4

*All activities listed are subject to change. Check D2L daily for updates!