

Syllabus for Physics 100-01, Fall 2012

Elements of Physical Science

Instructor: Dr. John D. Shaw
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Office: Merion Science Center 128
Office Hours: See Posting in D2L
or by appointment

Lectures: MWF 10:00 – 10:50

Merion Science Center 109

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

Text & Resources:

Required textbooks: *Physics: A Conceptual World View by Kirkpatrick and Francis 7th edition*
Available at bookstore. Also available online at cengagebrain.com with digital and rental versions.
Note that WebAssign is **REQUIRED** for the homework. If you have purchased a used text, you need to get a WebAssign license for this course for the semester. Details on how to obtain this will be available via a link on D2L. The class key is **wcupa 2082 8259**.

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). Check the D2L webpage often for course announcements and updates.

Course Description and Content:

A study of motion, energy, light, and some aspects of modern physics.

Prerequisite: Basic mathematical skills including basic algebra and simple geometry at the high school math level; I will assume that you have done this sort of math before, though it may be a few years since you've seen it or used it. We will also be making, reading, and interpreting diagrams, which you should have some previous experience doing.

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:

Four Midterm Exams:	45% (3 x 15% each, lowest one is dropped)
Final Exam (Cumulative):	20%
Total Homework:	20%
Total in class i>Clicker quizzes and participation:	15%

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 – 73
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 are four exams listed on the schedule, the lowest score will be dropped, the other three will be worth 15% of your final point total each. If you miss an exam for any reason you will receive a zero for that exam. **THERE WILL BE NO MAKE-UP EXAMS GIVEN** and as such one exam can be missed without penalty as it will count as the dropped exam in the final point tally. Only under very special circumstances will there be any change to this policy, and in those cases, exceptions will be made ONLY when the instructor is notified prior to the scheduled exam time of a conflict.

Tests will consist of mostly multiple choice questions and one or more open-ended problem(s), which will be designed to be similar to example and practice problems done in class or homework. The scope of each test (with the exception of the final) is limited to the chapters listed in the class schedule at the end of this syllabus. However, even though earlier material is not explicitly tested it may still appear on an exam.

Tests will be closed book, but you will be permitted to use one 8.5 x 11” sheet of paper (front only!) with your own, *handwritten* notes. **The instructor or exam proctor** reserves the right to refuse the use of typed sheets, or sheets which contain information on the front and back, during an exam. Also, you are permitted to use calculators during exams, but ONLY a calculator that is not part of an **internet accessible device (e.g. an iPod/iPad)**, cell phone, **E-book reader**, etc. **If you use such a device during an exam, your exam will be taken and you will get a zero on it, without exception.** Extra calculators **will not be available** for you to use during exams. It is YOUR RESPONSIBILITY to make sure you have a stand-alone calculator for an exam if you want to use one.

You will be able to review graded exams, but you are not allowed to keep them. They will be retained by the instructor if you wish to inspect them through the end of the scheduled semester. The

grade posted on D2L is your official grade, if it does not match the grade on the exam, you must inform the instructor before the final exam date.

There is a final exam and it is cumulative. It counts for one-fifth of your final grade. The date and location will be the normal time determined by the final schedule when it is available.

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 in WebAssign at least one week before the due date and these *will be* graded. Homework solutions will be posted on *D2L* after the due date. Problems and due dates will be posted in D2L, as well, but submissions **MUST** be made through WebAssign. Any access issues and technical connection problems will be handled by the WebAssign technicians, the instructor cannot and will not handle any WebAssign technical issues or problems. However, the instructor is available during office hours and via eMail for content related questions. Remember that you should not expect immediate email responses but it may take up to a full business day to respond.

See the WebAssign notes in D2L for how to set up your account, the class key is **wcupa 2082 8259**.

Quizzes and in class participation:

This will occur using the i>clickers for the most part. During class various questions or problems will be asked and you will respond via your clicker. You should be prepared to answer questions or problems based on homework and readings at the beginning of class and/or material presented in class at the end. This is a good measure of your understanding as the class progresses.

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, exams, class participation or quizzes. 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. **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.

Please turn off all cell phones, iPods, iPhones, smart phones, BlackBerrys, etc. before class. If you are expecting an emergency call, change your phone to vibrate mode and answer the call outside of our classroom. You are not allowed to use cell phones for texting or gaming during class. Doing so is distracting to your classmates and instructor. If you use your cell phone or other device inappropriately during class, **5 points will be deducted from the nearest exam grade**. If you feel the temptation will be too great, be on the safe side and leave your cell phone stored in your bag. The use of laptops in class is not allowed, however, an exception will be made for those who bought an e-copy of the required textbook, provided that I see proof of the e-copy on your computer. Terms of laptop use in these cases can be discussed with me on an individual basis.

All students are encouraged to sign up for the University's free WCU ALERT service, which delivers official WCU emergency text messages directly to your cell phone. For more information and to sign up, visit www.wcupa.edu/wcualert. To report an emergency, call the Department of Public Safety at 610-436-3311.

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 September 1 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 26 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	Text	HW Due
1	8/27/2012	Last to Drop - 9/2	Course Intro Math Review	World Views Theories and Laws	Measurements Scales	Chapter 1	
2	9/3/2012		Labor Day - No Class	Speed, Velocity and Acceleration	Free Fall Vectors	Ch. 2 ,Ch. 3 (through adding vectors)	HW 1 - 9/5
3	9/10/2012		More Vectors Newton's Laws I	Newton's Laws II	Circular Motion	Ch. 3, Ch. 4 (through Accel. In Circ. Motion)	HW 2 - 9/12
4	9/17/2012		Projectile Motion	Gravity I	EXAM 1 Chapters 1 - 4	Ch. 4, Ch. 5 (through satellites)	HW 3 - 9/19
5	9/24/2012		Gravity II	Gravity III	Momentum	Ch 5, Ch. 6 (through cons. of momentum)	HW 4 - 9/26
6	10/1/2012		Collisions	Kinetic Energy Work	Potential Energy Conservation of Energy	Ch. 6, Ch. 7 (through cons. of mech. Energy)	HW 5 - 10/3
7	10/8/2012		Fall Break - No Class	Energy summary Power	Rotation Torque	Ch 7, Ch. 8 (through Rotation Inertia)	HW 6 - 10/10
8	10/15/2012		Center of Mass Angular Momentum	Heat Temperature	EXAM 2 Chapters 5 - 8	Ch. 8, Ch 13 (through Absolute Zero)	HW 7 - 10/17
9	10/22/2012	Last day to Withdrawl - 10/26	Heat Transfer	Heat Engines	Refrigerators Entropy	Ch. 13, Ch 14	HW 8 - 10/26
10	10/29/2012		Vibrations Waves I	Waves II	Waves III	Chapter 15	HW 9 - 11/2
11	11/5/2012		Static Electricity Charge	Electric Field Electric Force	EXAM 3 Chapters 13 - 15	Ch 20 (through electric field lines)	
12	11/12/2012		Electric Potential Electric Current	Voltage, Power Circuits	Magnets Electromagnetism	Ch 20, Ch 21	HW 10 - 11/16
13	11/19/2012		Electromagnetic Induction	Thanksgiving Break No Classes		Ch 22	
14	11/26/2012		Electromagnetic Radiation	Reflection	Refraction	Ch 22, Ch 17, Ch 18	HW 11 - 11/28
15	12/3/2012		Diffraction Polarization	Other Topics	EXAM 4 Chapters 16 - 22	Ch 19	HW 12 - 12/5
16	12/10/2012		Other Topics				

*Subject to Change