PHY180, Fall '13, Course Syllabus

Instructor: Dr. Matthew M. Waite, MSC 133, 610-436-2573, mwaite@wcupa.edu
Class Meeting: MWF 10:00-10:50 am (Recitation: Tu 2-2:50 pm)
Office Hours: MTuWF 11:00 -12:00, MTuW 1:00-1:30, or by appointment.

Course Web Page: D2L

Course information can be found here throughout the semester. The syllabus, homework problem solutions, and other interesting stuff can be found here. Check it periodically!!

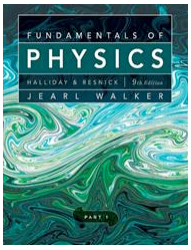
Course Goals: Our goals are to explore, analyze, and investigate the world around us and to gain a better understanding of how and why various physical phenomena occur. In our study of these physical phenomena, we aim to use our mathematical tools to aid us in gaining not only a qualitative conceptual perspective, but to provide a quantitative applied understanding as well.

As we strive to achieve these course goals, we will, in turn, achieve a number of the more basic goals of the general education curriculum at West Chester University, including the:

1. Ability to communicate effectively
2. Ability to employ quantitative concepts and mathematical methods
3. Ability to think critically and analytically

Text: Fundamentals of Physics, Vol. II (or Extended), (9th Ed.) by Halliday, Resnick & Walker, (John Wiley & Sons, Hoboken, NJ, 2010)

This book comes in a wide variety of forms including electronic, hardback, and paperback. Please see the website for options.



Grading:

4 Exams (Drop one, 15% each)	45%
Homework	15%
Lab	20%
Cumulative Final	20%

Attendance: You are expected to attend every class period. If you know ahead of time that you are going to miss a class, let me know BEFORE the class! It is up to you to make arrangements to get the lecture notes from a classmate and to learn of any important announcements that might have been made during class. Repeatedly missed classes will be noticed and attendance will be recognized in the "Class Participation" portion of the final grade.

Excused absences are limited to University-Sanctioned Events (which follow the Excused Absence Policy for University-Sanctioned Events as described in the West Chester University Undergraduate Catalog), and absences due to serious illness or injury, or the death of family members (each of which is to be verified by a practicing, non-related, physician.)

Cell phones and texting are NOT ALLOWED during class. Cell phone use is disruptive to your classmates and to your instructors. Please put turn **off** your phones or put them on **silence**, tuck them away in your bookbag, purse or European carry-all, and forget about them until after class. If I see anyone texting or using their cell phones during class, I will take 5 points off of the nearest exam grade, and you will be considered "absent" for that day, since you are obviously not mentally present.

Disability: We at West Chester University wish to make accommodations for persons with disabilities. Please make your needs known by contacting the Office of Services for Students with Disabilities at ext. 3217 **and** me at the above listed contact information.. Sufficient notice is needed in order to make the accommodations possible. The University and I desire to comply with the ADA of 1990.

Homework: Each week there will be an assignment of 8-10 problems on eWiley. Usually, the assignments will be due on Fridays, but there are a couple of occasions when they are due on either Wednesday or Monday, it is up to YOU to make sure you are aware of the due dates! Homework is due by 8:00 pm on the due date. At 8:00 pm, the solutions will be posted on the web page, and no more eWiley assignments will be accepted. The eWiley system stops accepting grades at the pre-indicated due date and time, I cannot grant extensions. Due dates for the homework chapters are indicated in green on the schedule below.

At the end of the semester, one homework grade will be dropped, so, if you miss one assignment, it's no big deal. But you don't want to make a habit of it; it could be very damaging to your grade at the end of the semester. Please note that homework accounts for 15% of your total grade, as much as an exam!

I encourage you to discuss the homework problems together, and to work and learn together, but any assignment you turn in for a grade must be YOUR OWN WORK!! It is in your best interest to learn how to do the problems yourself.

Exams: There will be four hourly exams throughout the semester. These hourly exams will focus on the most recently covered lecture and class material, but they should be considered cumulative in the sense that we will be building upon what we have already learned throughout the semester. I DO NOT give make up exams. If you miss an exam, you will receive a ZERO for that exam and it will be

recorded as a zero. Only under very special circumstances will there be any change to this policy, and in those cases, exceptions will be made ONLY when I am notified prior to the scheduled exam time of a conflict. If you have ANY questions or concerns about this particular point, please come take to me and get clarification BEFORE it's too late!

Laboratory: Just about each week you will have a laboratory assignment. The labs manual should be bought at Dynamic Bookstore. Be sure to purchase the PHY180 manual, and not the PHY170 manual. The allotted laboratory time is only 2 hours, therefore, it is your responsibility to prepare for the lab session by reading the lab assignment BEFORE lab each week. Your lab instructor may choose to administer a short quiz at the beginning of lab based upon this reading. Labs are indicated in purple below.

Schedule: (This schedule is tentative, I will try to follow it as closely as possible!)

Month	Date	Week	Reading	Topic
Aug.	26	1-M	NA	Intro & Electric Charge (0, No Lab)
	28	W	Ch. 21	What IS an "Electric Field?"
	30	F	Ch. 22	...And Where Does it Come From? (21 - Practice, not counted)
Sept.	2	2-M	NA	Labor Day (0, No Lab)
	4	W	Ch. 22-23	The Gauss Hauss - or "Flux"
	6	F	Ch. 23	Using Gauss to Make My Life Easier (22)
	9	3-M	Ch. 24	Electric Potential is NOT Potential Energy (1, Electric Charge)
	11	W	Ch. 24	...but it IS Potentially a Field
	13	F	Ch. 24	More on Electric Potential (23)
	16	4-M	EXAM I	Chapters 21 - 23 (2, Mapping)
	18	W	Ch. 25	the Cap in the Hat
	20	F	Ch. 25	Can We Save it For Later? Energy, that is.... (24)
	23	5-M	Ch. 26	Current Events (3, R's & Circuits)
	25	W	Ch. 26	Ohm My Gosh!!
	27	F	Ch. 26-27	What Can The Current Do For ME??!!? (25, 26)
	30	6-M	Ch. 27	Getting a Current To Flow...Circuits (4, Kirchoff's Laws)
Oct.	2	W	Ch. 27	Let's Plug Things In!!
	4	F	Ch. 28	What IS a "Magnetic Field?" (27)
	7	7-M	Fall Break	No Classes (0, No Lab)
	9	W	Ch. 28	...And Where Does it Come From?
	11	F	EXAM II	Chapters 24 - 27
	14	8-M	Ch. 28-29	A Little Electron Can Do WHAT!?!?! (5, RC Circuits)
	16	W	Ch. 29	Wires & Magnets
	18	F	Ch. 29-30	Solenoids & Toroids (28)
	21	9-M	Ch. 30	An Introduction to Induction (6, Earth's B-Field)
	23	W	Ch. 30	RL Circuits and Another Way To Store Energy
	25	F	Ch. 31	Hmmm...Looks Familiar... (29)
	28	10-M	Ch. 31	Oscillations and LCR Circuits (7, EM Ind.)
	30	W	Ch. 31	An Alternate Type of Current: Alternating Current

Nov.	1	F	Ch. 32	Magnetism In Matter...What REALLY Matters?!? (30)
	4	11-M	Ch. 32	All Sorts of ISMS (0, No Lab)
	6	W	Ch. 32	James Clerk Maxwell and His Wonderful Equations
	8	F	Ch. 33	Electromagnetic Waves (31)
	11	12-M	EXAM III	Chapters 28 - 31 (8, AC)
	13	W	Ch. 33	Which Way Does The Wave Poynt??
	15	F	Ch. 34	Making Pictures (32, 33)
	18	13-M	Ch. 34	Mirror, Mirror... (9, Snell's Law & Lenses)
	20	W	Ch. 34	Optical Instruments
	22	F	Ch. 35	Interference (34)
	25	14-M	Ch. 35	Colorful Soap Bubbles (10, Interf. & Diff.)
	27	W	Thanksgiving	No Classes
	29	F	Thanksgiving	No Classes
Dec.	2	15-M	Ch. 35-36	Diffraction (Lab Final) (35)
	4	W	Ch. 36	Wave Theory of Light
	6	F	Exam IV	Chapters 32 - 36 (36: Conceptual/lecture notes, no problems)
	9	M	Review (All!!)	Last Day of Classes