

<p><b>Fall 2012</b></p> <p>(last updated: 9/5/12)</p>	<p><b>PHYSICS 272/272H</b>  <b>University of Maryland</b>  <b>Department of Physics</b></p>	<p><b>Prof. D.C. Hamilton</b></p>
<p><u>TITLE:</u></p>	<p>Introductory Physics: Fields (3 Credits)</p>	
<p><u>INSTRUCTOR:</u></p>	<p>Prof. D.C. Hamilton  Room 3201, Computer and Space Sciences Building  Phone: 301-405-6207  Email: dch@umd.edu  Web site for this course: <a href="http://space.umd.edu/dch/p272f12/">http://space.umd.edu/dch/p272f12/</a>  Office hours: By appointment (please email or call or ask after class)</p>	
<p><u>TA</u></p>	<p>Yuan Yan Tay    yannietyy@gmail.com  Office hour:     4:00-5:00 pm, Fridays, PHY1303</p>	
<p><u>PREREQUISITE:</u></p>	<p>Prerequisite: PHYS171 or PHYS161 and MATH141  Corequisite: MATH241</p>	
<p><u>TEXT:</u></p>	<p>Giancoli, <i>Physics for Scientists &amp; Engineers, Vol. 2 (Fourth Edition)</i></p>	
<p><u>COURSE DESCRIPTION:</u></p>	<p>This is the second semester of a three semester, calculus based, general physics course. The subjects covered include electric and magnetic fields and potentials, simple circuits, and Maxwell's equations in integral form.</p>	
<p><u>LECTURES:</u></p>	<p>PHY 1410, TuTh 12:30–1:45 pm  PHY 1201 F 12:00–12:50 pm</p> <p>Class time will be spent on a mixture of lecture material, lecture demonstrations, and clicker questions used for class discussion. There is not enough time to cover all of the material in class, and I will rarely spend class time doing derivations that appear in the book. Nonetheless, you are responsible for all the assigned material, which for most chapters will be all the material in Giancoli, even if it is not discussed in class. We will discuss a few topics that are not covered in Giancoli.</p> <p>We will sometimes spend time in class, particularly on Fridays, for problem solving sessions in groups or at the board.</p> <p>You are expected to do the reading assignments in the textbook before each class. Assignments will be listed in the Semester Schedule on the course web site.</p>	
<p><u>HOMEWORK:</u></p>	<p>Homework will mostly be done on line using the <i>Mastering Physics</i> site associated with this course (<a href="http://www.masteringphysics.com">www.masteringphysics.com</a>). You will need an MP access code that either came with a new textbook or may be ordered online at the same web site. The MP course ID for this course is <b>MPHAMILTON50694</b>.</p> <p>Assignments will appear weekly and will generally be due on Tuesday morning of the following week at 2:00 am. Credit for the assignment will gradually decrease from 100% before the due time to 50% 24 hours after the due time. It will remain at 50% until the end of the semester.</p> <p>Most weeks, two or three problems will be assigned to be done on paper and to be handed in at the beginning of class on Tuesday. Assigned paper problems will be listed on the course web site. Late paper homework will not be accepted except in the case of illness or other extreme circumstances. Solutions will be posted at the Mastering Physics site after the due date. Each paper problem is worth twice as much as an MP problem.</p>	

<u>EXAMS:</u>	Midterm exams:	Thursday, Oct. 4 Thursday, Nov. 15	
	Final exam:	Tuesday, Dec. 18 (PHY 1201)	1:30 – 3:30 pm
	<p>Makeup exams will be given only in the case of serious of medical situations or excused University absences. For planned absences, you must inform me in advance. You are required to take the final exam.</p> <p>The exams are closed book and closed notes, but you be provided with a formula sheet for each exam.</p>		
<u>EXTRA HELP:</u>	I will be available after each lecture to answer questions. I will also answer questions sent to me via email. Or make an appointment via email or phone. Your TA will also have an office hour. You are encouraged to seek help at the first sign of difficulties.		
<u>CLASS PARTICIPATION AND CLICKERS</u>	<p>To get feedback during lectures and to encourage your active participation in the learning process, I will ask you to purchase one of the campus standard clickers made by Turning Technologies (Model RFC-03 or equivalent). You may also use an iPhone, iPad, iPod touch, or Blackberry if you purchase a ResponseWare license. Find out more about clickers at <a href="http://clickers.umd.edu">clickers.umd.edu</a>. You must register your clicker at <a href="http://my.umd.edu">my.umd.edu</a> under the Academics &amp; Testudo tab. Your clicks will not be recorded unless you register your clicker.</p> <p>Starting the third week of class, I will record your clicks but not whether your answer was right or wrong. By participating in the class in this manner, you will earn participation points worth 5% of your grade. To handle missed classes due to illness, forgotten clickers, etc., I will give full participation credit if you have clicks in 75% of the possible classes.</p>		
<u>HONORS SECTION</u>	<p>272H students will complete an honors paper on a relevant topic of their choice, to be approved by the instructor. Topics must be chosen by the end of September. A paper (10 typed pages, double spaced) on the topic will be due one week before the end of classes. An outline of the paper will be due at the end of October. More details will be supplied later.</p> <p>272H students will also be assigned additional homework problems.</p>		
<u>GRADING:</u>	Your semester grade will be based on the following percentages:		
		P272	P272H
	Two midterm exams	40%	40%
	Homework	25%	20%
	Final exam	30%	25%
	Participation points (clickers)	5%	5%
	Honors project		10%
<u>ABSENCES DUE TO ILLNESS</u>	We will follow the new University policy, which can be found at <a href="http://www.president.umd.edu/policies/v100g.html">www.president.umd.edu/policies/v100g.html</a> .		
<u>DISABILITY SUPPORT SERVICE:</u>	If you have a documented disability and wish to discuss academic accommodations, please contact me as soon as possible.		
<u>TIPS FOR DOING WELL:</u>	<ol style="list-style-type: none"> <li>1) Read the material in the textbook <i>before</i> and <i>after</i> the material is discussed in lecture.</li> <li>2) Freely ask questions in lecture.</li> <li>3) Work all of the homework problems. This is how you learn physics. You are allowed and encouraged to discuss homework with anyone you wish. However, you must do your own final work. No copying, please.</li> <li>4) Seek help immediately if you do not understand the material. If you have difficulties</li> </ol>		

	<p>with the homework, try to analyze what is causing you problems. That is the first step towards better understanding. Don't wait until just before exams.</p> <p>5) Remember that you are responsible for material discussed in class, including demonstrations, even if it does not appear in the textbook.</p>
<u>HONOR CODE:</u>	<p>The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards in this course. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <a href="http://www.shc.umd.edu">http://www.shc.umd.edu</a>. I will ask you to sign the Honor Pledge on all examinations: "I pledge on my honor that I have not given or received any unauthorized assistance on this examination."</p>

Physics 272/272H Prof. Hamilton		Semester Schedule		Fall 2012
Last revision: 8/30/12				
Week of	Giancoli Chapter	Topic	Homework (online HW due Tuesday 2:00 am, written HW due at Tuesday lecture except as noted)	
Aug 30	21	Electric charge and Coulomb's law	None	
Sept 3	21	Electric field	#1 (Chap. 21) HW due Thursday, Sept 6	
Sept 10	22	Gauss's law	#2 (Chap. 21)	
Sept 17	23	Electric potential	#3 (Chap. 22)	
Sept 24	24	Capacitors and dielectrics	#4 (Chap. 23)	272H paper topic due Sept 28
Oct 1	Tu – Catch-up and review Th – <b>EXAM #1</b> , Oct. 4 (Chaps 21-24)		#5 (Chap. 24)	
Oct 8	25	Current and resistance	None	
Oct 15	26	DC Circuits	#6 (Chap. 25)	
Oct 22	27	Magnetic Field	#7 (Chap. 26)	
Oct 29	28	Ampere's law	#8 (Chap. 27)	272H paper outlines due Monday, Oct 29
Nov 5	29	Faraday's law of induction	#9 (Chap. 28)	
Nov 12	Tu – Catch-up and review Th – <b>EXAM #2</b> , Nov. 15 (Chaps. 25-29) F - Chap. 30 Induction		#10 (Chap. 29)	
Nov. 19	Tu – Chap. 30 <b>Th-F - Thanksgiving Recess</b> (Nov. 22-23)		None	
Nov 26	31	Maxwell's equations	#11 (Chap. 30) HW due Friday Nov. 30	
Dec 3	31	EM waves and Relativity	#12 (Chap. 31) HW due Friday, Dec. 7	272H papers due Tuesday, Dec 4
Dec 10	All	Tuesday, Dec 11. Last class. Review for final exam.	#13 (Relativity) Friday, Dec. 14	
Dec 17	<b>FINAL EXAM</b>	Tuesday, December 18	1:30-3:30 pm (Cumulative) PHY 1201	