

PHYSICS 272, 272H – Fall 2017  
University of Maryland  
Department of Physics

- TITLE: Introductory Physics: Fields
- INSTRUCTOR: R. L. Greene, Room 0365, Center for Nanophysics and Advanced Materials  
(entrance is from the plaza between the Math and Physics buildings.)  
[rickg@umd.edu](mailto:rickg@umd.edu) Office phone: 301-405-6128  
Office Hours: Wed 4-6pm and by appointment
- WEB SITE: All course announcements, homework assignments and solutions, exam solutions, etc. will be posted on the ELMS website:
- TEXT: D. C. Giancoli, 4<sup>th</sup> edition, Vol 2
- MEETING TIME: PHYS 1204 Tues, Thurs 12:30-1:45pm — Lectures  
ESJ 0215 Monday 11:00-11:50pm — Discussion
- The Monday class will be devoted to solving problems in groups, with input from me. There will also be a quiz on the previous week's homework. This is a required part of the course; excessive absence will result in a lower grade.
- DESCRIPTION: This is the second semester of a calculus-based three semester sequence in introductory physics. The main theme is "fields" focusing on electromagnetism
- HOMEWORK: Homework will be due at the beginning of the each week's Thursday's lecture. Please **staple** the pages together and put your name and the assignment number on the first page. Any loose, corner-folded or paper-clipped homework will not be graded. Late homework will not be accepted except in the case of illness verified by a doctor's note. Your lowest homework grade will be dropped.
- HONORS HW: For those enrolled in 272H, additional homework problems will be assigned that either are more challenging or refer to optional topics not covered in class. Please hand in this homework separately from the regular assignment.
- QUIZZES: Starting the week of September 10, a 15 min quiz will be given during Monday's class every week except during those weeks in which hour exams are scheduled. Each quiz will consist of a problem similar to one of the homework problems due that week or some conceptual short questions. Make-up quizzes will not be given; however, your lowest quiz score will be dropped.

EXAM DATES: Mid-term exams: Thurs Oct 5; Thurs Nov 16

Final exam: Monday Dec 18 1:30-3:30pm

In the case that any student misses one of the two hour exams due to illness supported by a doctor's note, a makeup exam will be given at the end of the semester covering material from both hour exams. You are required to take the final exam to pass the course.

EXTRA HELP: I will be available after each lecture to answer questions. Or come see me during my office hours or make an appointment for another time. Your grader may also be available for help. Contact him directly by email. You are encouraged to seek help at the first sign of difficulties.

GRADING: Your semester grade will be based on the following percentages:

2 Hour exams	50%
Quizzes	10%
Homework	10%
Final exam	30%

HOW TO GET A GOOD GRADE:

This course will be run primarily using the "flipped" classroom approach. This means that there will be minimal lecturing during the class time. Class time will be spent on solving problems, answering questions, working in groups, and observing demonstrations. Therefore, it is mandatory that you read the material in the textbook before the material is discussed in class.

In addition, you must do all of the homework problems. This is how you best learn physics. You are allowed and encouraged to discuss homework with anyone you wish. However, in order to learn, you should initially make a serious attempt to solve the problems by yourself.

There is a lot of homework assigned in this course. If you are not willing to put in the significant effort required to do this homework, read the textbook before class, etc., then you should consider taking PHYS 272 with another instructor.

You are responsible for understanding material discussed in class, including demonstrations, even if it does not appear in the textbook.

An excellent set of lectures on the subject matter of this course can be found online. See W. Lewin, 802X lectures from MIT. These may be useful to look at before and after the related material is discussed in class.

GRADER: Mark Zic markzic@terpmail.umd.edu

## TENTATIVE SCHEDULE

WEEK	TEXT	TOPIC	HW ASSIGNMENT (due at Thursday lecture)	QUIZ
Aug 28	Ch 21	Coulomb's Law/Electric Field		None
Sept 4	Ch 22	Gauss's Law	#1 (Ch 21)	None
11	Ch 23	Electric Potential	#2 (Ch 22)	#1, Ch 21
18	Ch 24/25	Capacitance/Dielectrics, Current and resistance	#3 (Ch 23)	#2, Ch 22
25	Ch 25/26	Resistance and DC circuits	#4 (Ch 24/25)	#3, Ch 23
Oct 2	Exam 1 (Ch 21-25)	Thursday, Oct 5 Oct 3--Review	None	#4, Ch 24/25
9	Ch 27	Magnetism	#5 (Ch 25/26)	None
16	Ch 28	Sources of Magnetic Field	#6 (Ch 27)	#5, Ch 25/26
23	Ch 29	Electromagnetic Induction and Faraday's Law	#7 (Ch 28)	#6, Ch 27
30	Ch 30	Inductance, LC oscillations, RLC circuits	#8 (Ch 29)	#7, Ch 28
Nov 6	Ch 31	Maxwell Equations and EM waves	#9 (Ch 30)	#8, Ch 29
13	Exam 2 (Ch 26-30)	Thursday, Nov 16 Nov 14--Review	None	#9, Ch 30
20		Review of exam2 and Make-up Exam	None	None
27	Ch 36	Relativity and Electromagnetism	#10 (Ch 31)	None
Dec 4	Ch 34	Fields from moving charges-validity of Gauss's Law	Review HW-does not need to be submitted	#10, Ch 31
11		Final Exam Review		

**FINAL EXAM: Monday, 18 December, 1:30-3:30pm (comprehensive)**

**Academic honesty:**

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 for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.shc.umd.edu>.

The University has adopted an Honor Pledge, which is a statement undergraduate and graduate students are asked to write by hand and sign on examinations, papers, or other academic assignments not specifically exempted by the instructor. The Pledge reads: "I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination." In this course it is assumed that all students have entered the University agreeing to the honor principle which would apply in general to all campus activities, so usually no specific statement is required.