



PHYS 272/272H: Introductory Physics - Fields

Fall 2017

Mon., 12:00-12:50PM, Tues. and Thurs., 2:00-3:15PM, Toll 1402



Prof. James Williams

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PSC 2160

Office Hours: Tuesday 10-11AM

(301) 314-2161

Course Description: Second semester of a calculus based general physics course designed for physics majors. Electric and magnetic fields and potentials, simple circuits, Maxwell's equations in integral form. Continues the application of mathematics to conceptual models, now with more abstract components.

Prerequisites: PHYS161 or PHYS171; and MATH141; and must have completed or be concurrently enrolled in MATH241. Credit only granted for: PHYS142, (PHYS260 and PHYS261) or PHYS272. Additional information: CORE Distributive Studies Physical Sciences Laboratory Course only when taken concurrently with PHYS275.

Credit Hours: 3

Text(s): Physics for Scientists & Engineers, 4th Edition, by Douglas Giancoli Pearson Prentice Hall. ISBN: 978-0-13-149508-1. In addition there are many good books that cover the topics of this course.

1. *Electricity and Magnetism*, Purcell and Morin
2. *Feynman Lectures Volume II*, Feynman
3. *Introduction to Electrodynamics*, D. J. Griffiths (more advanced book)
4. *div, grad, curl and all that*, H. M. Schey

Grade Distribution:

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|----------------|-----------------------|
| Homework | 25% |
| Midterm Exams | 40% |
| Final Exam | 35%, (25% for Honors) |
| Honors Project | 10% |

Course Materials: The course material will all be available through ELMS

Exams: There will be two midterm exams and a final exam.

Exam 1: Tuesday October 3, 2:00-3:15pm

Exam 2: Thursday November 2, 2:00-3:15pm

For true medical emergencies, I will accommodate those with valid, documented excuses. *The exams are closed book and closed notes, but you will be provided with a formula sheet for each exam.*

ELMS/E-mail: I will use ELMS to communicate with the class. However, I can often be reached at night or on weekends by email.

Lectures: Monday 12:00-12:50, Tuesday/Thursday 2:00-3:15pm, Room 1402, John Toll Physics Building. Class time will be spent on a mixture of lecture material, lecture demonstrations, and class discussion. 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. You should do the reading assignments in the textbook before each class. Assignments will be listed in the Semester Schedule on the course web site.

Homework: The purpose of the homework is for you to engage with the material. This is how you will master it, and it will help you discover what you don't yet fully understand. Discussing physics helps understanding. You are encouraged to discuss the homework with fellow students, with our grader, or with Prof. Williams. However, what you turn in should be your own answers.

1. Usually assigned once every week.
2. Must be turned in at the beginning of class on the due date (not to the grader).
3. Please make sure you **include your name and the homework and course numbers, and staple the pages together.**
4. **Late homework accepted only under dire circumstances:** if you know it will be impossible to turn in an assignment on time you must discuss this with me in advance of the due date.

Religious Observances: Students are responsible for notifying the instructor of any intended absences for religious observances within the first two weeks of the semester.

Tips for doing well:

1. Attend class.
2. Freely ask questions both in and out of class.
3. Read the textbook before and after class.
4. Do all of the homework problems. This is mostly where you learn, and there is a strong correlation between homework and exam grades.
5. Seek help immediately if you don't understand the material.

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.