

Physics 1502V
Honors Introduction to Electricity and Magnetism
Spring 2014

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Email: crowell@physics.umn.edu (NOTE: Email is not recommended as a means to contact me about routine class matters. Please take full advantage of the opportunity to talk to me before or after lectures as well as during my scheduled office hours.)

Office Hours: Will be posted on the web page after the first day of class.

Course web page:

[<Insert course link here>](#)

Course announcements and assignments will be posted on this page. Note the links on the right side of the page. Most of the material for the course will be on the “Links and Downloads” page. You are also responsible for any announcements or assignments made on the web page, in class, on WebAssign, or by email. The course email list will be based on the official list generated by the university. Please do not ask us to change to any other email address.

Lectures: MTWF 11:15 in Phys 131. As noted below, all quizzes for this course are scheduled on Fridays. Most (but not all) other Fridays will be used for lectures.

Discussion and laboratory sections as assigned: Discussion sections will meet on Thursday, January 20 and each week thereafter. Note that attendance at discussion sections is mandatory. Laboratories will meet (in Room 215) for the first time the week of January 24th.

Text: *Electricity and Magnetism*, by Edward M. Purcell and David J. Morin (3rd ed., Cambridge University Press). Note: Make sure you buy the 3rd edition. Among other changes, it uses SI units. All previous editions use CGS units. You should also purchase online access to Tipler and Mosca, *Physics for Scientists and Engineers*, 6th edition, which is the textbook for 1402V. We will use Tipler & Mosca for homework assignments as well as additional material (oscillations and waves) not covered in Kleppner and Kolenkow. You should NOT purchase access to WebAssign, which is not used in 1502V. Note that a full version of a standard calculus-based introductory physics textbook is an essential reference for all science and engineering majors. You may choose to buy the paper version of Tipler (used copies abound on the Web) or some other text.

Quizzes - One-hour problem solving quizzes will be held FRIDAYS **February 4, March 4, April 8, and April 29**, at locations to be announced later. Grades earned on these quizzes will be credited towards your final course grade. The lowest quiz grade will be dropped, and so only your best three quizzes will be used in calculating your final grade. Quizzes will be closed-book. The use of calculators (but not computers) will be allowed. **NO MAKE-UP QUIZZES WILL BE GIVEN.** Exceptions to this policy, in accordance with University-wide rules, will be considered only for those cases specified by policy:

<http://www.policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html>

Note that for the special cases covered by this policy, particularly intercollegiate athletic events and religious observances, you must advise me well in advance (in person and by confirming email) so that appropriate arrangements can be made. Note that illness is generally not a consideration in making exceptions to the exam policy unless a physician explains in writing that you were physically unable to take the exam.

Final exam - The result of a three-hour final exam will be credited toward your course grade. This exam will be held on **Saturday May 14, 8:30 - 11:30 a.m.** (location to be determined). The final exam will be closed-book and must be taken at the specified time and place. Exceptions to this rule will be granted only according to the university policies noted above.

Laboratory: Laboratories will meet for the first time during the week of January 24th at the assigned time in Room 215. The laboratory part of this course consists of six units: waves, electrostatics, capacitors and dc circuits, magnetostatics, Faraday's law, and RLC circuits. You will design and carry out experiments that address the fundamental principles being taught in the lecture part of the class. Your lab grade will be based on a lab logbook documenting your activities as well as two papers to be submitted over the course of the semester. Details, including due dates, will be provided at your first laboratory meeting. **Note that you must complete all six laboratory units in order to receive a passing grade in this course.** Your lab logbook should be a bound quadrille-ruled (graph paper) notebook and should be used only for this course.

Homework - Each week on Friday a number of exercises and problems taken from the textbook will be posted on the course website.

Problem sets will be due each Thursday at the beginning of your discussion section. **NO LATE HOMEWORK WILL BE ACCEPTED.**

Some notes: **There is nothing more important to success in this course than mastery of the material as evidenced by problem solving.** Although the written solutions of homework problems must be your own work, discussion of the problems with your peers is encouraged.

Remarks on grading - Problems on quizzes and the final exam will be graded based on your success in communicating a logical and organized path towards their correct solution, grounded in a correct assessment of the underlying physics. Diagrams, written explanations and especially a logical algebraic development done neatly and including well-defined variables and a consistent notation are key elements of the correct solution of problems. Disconnected diagrams, equations or answers simply written down without explanation will not receive credit. Partial credit will be given for steps of an organized solution up to the point where a departure from the correct solution path occurs, but only if these steps can be clearly understood by looking at the paper you submitted. Again: a grader looking at your paper must be able to understand what you have done, how and why you did it, and to discern the correctness of your reasoning.

Academic conduct: Students in this course must adhere to all policies of the University of Minnesota and the College of Science and Engineering with respect to scholarship and conduct. These policies are available for review at:

<http://it.umn.edu/students/policies/index.html>

In particular, you are encouraged to read the statements on scholastic dishonesty, disruptive behavior, and the use of electronic devices during exams. Violations of these policies will lead to penalties, including a failing grade “F” in the course and expulsion from the University.

Special accommodations: If you have a disability that will require consideration in the administration of this course, the staff will work with the Office of Disability Services to ensure that all reasonable accommodations are provided. Please contact the Office of Disability Services (<http://ds.umn.edu>), not the instructor, to make such arrangements.

Classroom etiquette: Cell phones must be turned off. Computers may be used only for notetaking, accessing your textbook, or accessing online course resources as required during the lecture (this will be rare). All other forms of electronic communication and web access are not allowed at any time. Note that the use of any electronic devices, except handheld calculators without wireless capability, is forbidden during exams. Lectures will require active verbal communication (both ways!) between students and the instructor. Anything that impedes this process (from web browsing to reading the newspaper) is rude and disruptive.

Teaching assistants - In addition to the instructor, a number of teaching assistants have been assigned to share the responsibilities of this course. Their names and contact information will be posted on the course website.

Grading: Your grade in this course will be based on the following components:

40% - Scores of best three-out-of-four quizzes

30% - Score on the final exam

20% - Laboratory (note rule on completion of all lab units as discussed above)

10% - Graded homework assignments

The assigned letter grade for the course will be based ROUGHLY on the following percentages of the maximum possible overall score:

A: 86-100%, B: 72-85%, C: 58-71%, D: 44-57%, F: 0-43%.

These numbers are subject to shifts of a few percent. Each letter grade may further be assigned a plus or minus reflecting its location within the range of percentages; there are no A+ or D- grades.