

PHYSICS 208: Electricity and Magnetism (Spring 2008 Sections 511-515)

Prerequisites You should have taken PHYS 218, MATH 151, and be enrolled in MATH 152 (or have taken it). You are expected to have a working knowledge of plane and solid geometry, trigonometry, algebra, vectors, differentiation and integration.

Instructor Dr. J. H. Ross
Contact: email (recommended): *jhross(at)tamu(dot)edu*. Alternative: phone 845-3842 (office) or 845-7823 (lab)
Office: ENPH-Office Wing, Room 422 or B03 (lab, in basement)
Office hours: Mon. 12:30-1:30, Wed. 2:50-3:50, Fri., 11-12 or by appointment
(I will usually be at my basement desk for office hours but if you would like to discuss course matters in a more private setting I will be happy to meet in my 4th floor office.)

Homepage <http://faculty.physics.tamu.edu/ross/208page.html>

Textbooks Young & Freedman "University Physics," 12th ed. (Complete or vol. 2); "Laboratory Manual for Physics 208," 9th ed.

Recitation/ Lab Recitation meets in HELD 119 the first hour, followed by a two hour lab. You must read the laboratory material in advance, since there is a short **lab quiz** to start the lab. See the separate lab schedule (and note: there is **no recitation or lab the first week**. If you are retaking the course, *notify me immediately* for possible lab credit. You *might* not have to repeat the lab if your lab grade was at least 80, but in that case you must *still attend recitation and take the quizzes*.

Quizzes/ Homework As soon as possible you should set up your **MasteringPhysics** account. This comes with your textbook (if you have a used textbook you may have to purchase MP access separately). Go to www.masteringphysics.com and click on the Young/Freedman textbook link. When you first register, enter the class id "MPROSS58062" for my sections. There are several parts to the homework: (a) Pencil-and-paper: Work the end-of-chapter problems (listed on this syllabus) to prepare for quizzes and exams. These are not turned in, and you may collaborate as needed, but in the end you must *understand* how to work these problems yourself. (b) Online: Some of the problems on the list will be included in MasteringPhysics assignments, along with a few additional problems. These you must do by yourself, after you understand how to work the problems. Assignments will be due after the lectures and at the end of the week when the material is covered in lecture; see the MasteringPhysics site for posted due dates as the course proceeds. These will include lecture-day assignments with one or two MasteringPhysics problems, generally due the day of the lecture. (c) Quizzes: In recitation the instructor will answer questions, and give a quiz based on the homework for that week. The Quiz average is worth 75 points out of the 750-point course grade as shown below. The other 75 points for Homework comes from Masteringphysics assignments.

Exams **The three midterms and final exam are scheduled on the next page.** (a) Each in-class midterm will last 50 minutes, and the final exam is 2 hours long. These will generally consist of problems similar in content and difficulty to the homework. Partial credit will be given if merited, however your work *must* show the steps toward the solution; **the answer alone is generally not sufficient**. (b) You will be supplied with a **formula sheet** with each exam. A copy of this sheet will be distributed in class before each exam. (c) You will need to bring a calculator to the exams. If you have a programmable type calculator, you will be asked to clear its memory before beginning the exam. (d) If you miss an exam due to an **authorized excused absence** as outlined in the *University Regulations* you must contact me no later than the next class meeting following the missed exam to arrange a makeup. We may organize a **single course-wide makeup exam**. If so, this exam will be written by a committee of 208 lecturers and administered outside normal class time within 7-10 days following the missed exam. Note: Few conditions qualify as an authorized excused absence, so avoid missing exams! (e) Bring your student ID with you to all exams for identification purposes. Exam grades will be curved depending on the conditions of each exam. Grade cutoffs will be described in class, and generally do *not* follow pre-defined cutoffs such as 90-80-70-60 %.

Course Grade The total course grade consists of 750 points distributed as follows:

	Points
3 Midterm Exams	300*
Final Exam	200*
Recitation quizzes	75
Laboratory **	100
Homework	75
Total	750

* **ALTERNATE:** In case your final exam score is better than your 3 exam average, the final will (automatically) count 300 points toward your final grade, and your exam average 200 points instead of the breakdown indicated above.

****ALSO, you must pass the laboratory and lecture** (midterm exams and final) **separately** to pass the course. Completion of **ALL** laboratory experiments is required.

Class Schedule

Week of	Chapters	Topics/Homework Assignment
Jan. 14	21 (1-7)	Electric Charge and Electric Field 21 : 4, 12, 20, 23, 33, 44, 50, 56, 58, 62, 63, 71, 75, 87, 89, 96, 107.
Jan. 22	22 (1-5)	Gauss's Law 22 : 4, 6, 8, 13, 21, 22, 24, 26, 29, 30, 35, 37, 45, 48, 51, 56, 61, 65. Note: NO MONDAY CLASS this week
Jan. 28	23 (1-5)	Electric Potential 23 : 1, 5, 13, 17, 21, 23, 33, 40, 44, 48, 57, 60, 61, 63, 66, 70, 78.
Feb. 4	24 (1-4)	Capacitance and Dielectrics 24 : 3, 5, 9, 13, 14, 20, 27, 36, 44, 50, 53, 54, 57, 59, 61, 71, 78. Exam 1 (Chap. 21, 22, 23): Feb. 8
Feb. 11	25 (1-5)	Current, Resistance and Electromotive Force 25 : 1, 8, 10, 21, 25, 33, 35, 36, 37, 44, 46, 65, 70, 76.
Feb. 18	26 (1-5)	DC Circuits 26 : 1, 6, 8, 11, 23, 29, 41, 45, 48, 51, 58, 61, 66, 70, 73.
Feb. 25	27 (1-7)	Magnetic Fields and Magnetic Forces 27 : 1, 4, 8, 12, 22, 31, 35, 39, 44, 57, 67, 72, 75, 79, 89.
Mar. 3	28 (1-7)	Sources of Magnetic Field 28 : 1, 5, 11, 15, 20, 21, 25, 31, 36, 37, 45, 51, 52, 59, 69, 81. Exam 2 (Chap. 24-26): Mar. 7
Mar. 10		Spring Break
Mar. 17	29 (1-7)	Electromagnetic Induction 29 : 3, 4, 7, 9, 18, 20, 21, 28, 30, 33, 34, 45, 53, 63, 70. Note: NO FRIDAY CLASS this week
Mar. 24	30 (1-5)	Inductance 30 : 5, 8, 12, 14, 19, 25, 31, 32, 47, 52, 60, 62, 69, 70, 78.
Mar. 31	32 (1-4)	Electromagnetic Waves 32 : 1, 5, 9, 11, 14, 16, 18, 23, 41, 44, 47, 53, 54.
Apr. 7	Exam 3 (Chap. 27-30): Apr. 11 33 (1-3,5,7)	Exam given Friday during class. The Nature and Propagation of Light 33 : 3, 7, 12, 19, 22, 27, 30, 34, 40, 41, 46, 52, 60, 61, 66.
Apr. 14	34 (1-4,6)	Geometrical Optics and Optical Instruments 34 : 2, 7, 8, 18, 19, 26, 32, 33, 47, 66, 69, 70, 111, 115.
Apr. 21	35 (1-5)	Interference 35 : 1, 4, 18, 9, 14, 30, 32, 44, 54, 58.
Apr. 28		Continuation and Review Tues Apr. 29: Friday schedule, last class day
May 6	Final Exam Tues 3:30-5:30 PM	

ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room B118 of Cain Hall or call 979-845-1637.

Honor Code

"An Aggie does not lie, cheat, or steal or tolerate those who do." All work for this course will be governed by the the Aggie Honor Code. To familiarize yourself with these rules refer to the Honor Council Rules and Procedures on the web at at the following location: www.tamu.edu/aggiehonor