

Course Information

PHYS 273 Fundamentals of Physics II Electromagnetism (4 credit hours)

Fall 2018. Faraday 143, Tuesday Thursday 12:30-1:45

Course website on blackboard

Instructor Information

Professor: Laurence Lurio (753-6470) (llurio@niu.edu)

Office location: La Tourette 202 (back of physics office)

Office Hours: Tuesday 2:00 – 3:00.

Course Description: Physical laws governing electricity and magnetism using calculus. PRQ: PHYS 253. CRQ: MATH 230.

Textbook: Physics for Scientists and Engineers Foundations and Connections, with Modern Physics, Debora M. Katz

Electronic Materials: This course will make use of WebAssign for homework. This can be purchased independently or as part of a Cengage Unlimited subscription. With Cengage Unlimited you can access and electronic copy of the textbook as well as ANY Cengage materials you are using across ALL of your courses AND a library of 20,000 eBooks, study guides and reference materials. Cengage Unlimited costs \$119.99 for four months, \$179.99 for twelve months or \$239.99 for twenty-four months. You also get a print rental when you activate your technology for \$7.99. You may also have the option to purchase a loose-leaf version of your textbook, which you can keep.

Lab Manuals: Laboratory manuals are available free for download from the blackboard webpage.

Intended Learning Outcomes: Students taking this course will learn how the electrical and magnetic properties of matter can be understood in terms of basic laws of nature. Students will learn to quantitatively analyze physical phenomena involving electromagnetism and will obtain facility in performing physical measurements of electromagnetic phenomena.

Student Assessment:

Student grades will be based on homework (5%), three exams (10% each) the laboratory grade (25%) a midterm (20%) and a final exam (20%). Students in PHYS 252 will have their grade based on the same scale but weighted by 1.333 to account for the lack of lab points. The expected grade curve will be (A >= 80%), (B >= 70%), (C >= 50%), (D >= 45%). Grades may be curved up from this scale, but will not be curved down. Cumulative exam scores of less than 35% will result in a grade of F regardless of the curve. Students must pass the lab section in order to pass the course.

Labs: Students will work in groups of two or three on all labs, and all partners are expected to share in hands on work to perform measurements. Attendance will be taken at labs, and lab reports will not be accepted if you haven't attended the lab. Lab recitation times will typically last 30 minutes. Lab reports are due

before lab on the following week. Report grades will be reduced by 25% for labs handed in up to one week late, 50% for two weeks and will not be accepted after two weeks.

You must print out a copy of your first lab report (in addition to the electronic submissions) and bring it to the lab on the week of 9/21. The lab write-up workshop would allow you to check with your TA if you have written your report correctly or not. Your TA will examine your report and let you know of the major things you may have missed or that need reinforcement. You will have the opportunity to fix your report and to resubmit it on BB electronically.

Academic Integrity: Students are expected to hand in their own work for homework, on exams and for laboratories. Students found cheating will receive a grade of F for that exam or assignment and be reported to the office of Community Standards and Student Conduct. Students found cheating on more than one assignment will receive a grade of F for the course.

Students with disabilities:

If you need an accommodation for this class, please contact the Disability Resource Center as soon as possible. The DRC coordinates accommodations for students with disabilities. It is located on the 4th floor of the Health Services Building, and can be reached at 815-753-1303 (V) or drc@niu.edu. Also, please contact me privately as soon as possible so we can discuss your accommodations.

Course Calendar

Day	Topic	Date	Day	Topic
Tue	Electric Forces	30-Aug	Thu	Electric Forces
Tue	Electric Fields	6-Sep	Thu	Electric Fields
Tue	Gausses Law	13-Sep	Thu	Exam I
Tue	Gausses Law	20-Sep	Thu	Electric Potential
Tue	Electric Potential	27-Sep	Thu	Capacitors
Tue	Exam II	4-Oct	Thu	Capacitors
Tue	Current	11-Oct	Thu	Current
Tue	Circuits	18-Oct	Thu	Circuits
Tue	Magnetic Fields	25-Oct	Thu	Midterm Exam
Tue	Magnetic Fields	1-Nov	Thu	Gausses Law in Magnetism
Tue	Gausses Law in Magnetism	8-Nov	Thu	Faradays Law
Tue	Faradays Law	15-Nov	Thu	AC circuits
Tue	Exam III	22-Nov	Thu	Thanksgiving Break
Tue	AC circuits	29-Nov	Thu	Maxwells equations
Tue	Maxwells equations	6-Dec	Thu	Review for final
Tue	Final Exam Noon-1:50 p.m.			

Lab Calendar

Week	Start Date	Lab
1	27-Aug	Assessment Exam, Intro to labs
2	3-Sep	Labor day week, no Lab
3	10-Sep	Pre-Lab Quiz, Electric Fields Lab
4	17-Sep	Write-up Workshop, Errors, vector analysis
5	24-Sep	Pre-Lab Quiz, Recitation, Oscilloscope Lab
6	1-Oct	Pre-Lab Quiz, Recitation, Ohm's Law Lab
7	8-Oct	Recitation, Error Analysis II Lab
8	15-Oct	Pre-Lab Quiz, Recitation, Circuits Lab
9	22-Oct	Pre-Lab Quiz, Recitation, Capacitor Lab
10	29-Oct	Pre-Lab Quiz, Recitation, Magnetic Field Lab
11	5-Nov	Pre-Lab Quiz, Recitation, Faraday's Law Lab
12	12-Nov	Pre-Lab Quiz, Recitation, AC Resonance Lab
13	19-Nov	Thanksgiving week (no lab)
14	26-Nov	Pre-Lab Quiz, Recitation, Electrostatics Lab.
15	3-Dec	Exit Assessment Exam