

PHYS 4202/6202 – ELECTRICITY and MAGNETISM II

Spring 2022 – Dr. Loris Magnani

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary during the course of the semester and will supersede anything written here.

Professor: Loris Magnani Office: Physics 238 Phone: 542-2876
E-Mail: loris@uga.edu
Web Page: www.physast.uga.edu/~loris/astr4202/prob.html
Class Hours: MWF 12:40 PM – 01:30 PM in Physics 327
Office Hours: MW 4:00 PM – 5:00 PM (or by appointment)
Call Number: PHYS 4202: 27333
 PHYS 6202: 27337

Textbook: *Introduction to Electrodynamics* –4th ed. – David J. Griffiths (Pearson: Addison Wesley) - Required.

This course is an upper-level physics course dealing with the basics of electrodynamics theory. Electricity and Magnetism is a two-semester course and PHYS 4202 is the second part that deals primarily with magnetic fields in matter and time-varying electric and magnetic fields.

I assume you have at least two years of Calculus and PHYS 3700 and PHYS 3900 as part of your background. Also, and this is a strict requirement, I assume you have taken PHYS 4201 or an equivalent course in electrostatics and magnetostatics.

Class Attendance: In-person attendance is not required but is strongly encouraged. There is no online component to the class. You are responsible for anything discussed in class. If you should miss a class and wish to find out what was discussed, consult with classmates or the instructor.

Homework: 4 to 10 homework problems will be assigned each week (or, every other week, depending on how much material is covered) on the Monday class of that week. Due dates for each homework assignment will be on the course web page. You may work with other students in the class on the homework, but, if you choose to do so, you must

write on your submitted work who(m) you worked with. There is no penalty for working with others, but I will assign the same exact grade to all the people who worked on the problems together. I will not grade all the problems assigned, but will choose one or two problems from each homework assignment to grade. Your weekly performance on the chosen problem(s) that is(are) graded will dictate your final homework grade. For every two days that any homework assignment is late, one point (out of a total of ten points) will be deducted from the final score for that homework.

Grading: There will be three midterms; see the schedule below for the tentative dates. The final exam for this course is cumulative and will be on Wednesday, May 11th, from noon till 3 PM. the midterms count 20% each for a total of 60% of the final score, the homework counts for 15%, and the final 25%. If you miss a midterm exam, you will have to schedule a makeup exam within one week of the original exam date. If you miss the final exam, you must make it up the next day.

Your numerical score based on the above percentages will be calculated at the end of the semester and letter grades will be assigned using the following scale:

A	corresponds to 92.00 – 100.00
A-	corresponds to 88.00 – 91.99
B+	corresponds to 84.00 – 87.99
B	corresponds to 80.00 – 83.99
B-	corresponds to 76.00 – 79.99
C+	corresponds to 72.00 – 75.99
C	corresponds to 68.00 – 71.99
C-	corresponds to 60.00 – 67.99
D	corresponds to 50.00 – 59.99
F	corresponds to less than 50.00

Student Responsibilities: Please make a reasonable attempt to arrive on time. If you must leave earlier than the scheduled end of class, please try to do so quietly and discreetly. Class disruptions or distracting behavior will not be tolerated.

You are encouraged strongly to read the chapter in the book relevant to the material being covered in class. If the schedule of readings changes significantly from that detailed below, then those changes will be announced in class.

Ask for clarification on anything you find unclear, ambiguous, or unspecified. This includes both course policies and lecture material. Errors in this syllabus will be corrected and posted on the webpage for this course (see above).

You are responsible for all topics discussed in class, as well as class announcements. Although attendance is not mandatory, it is in your best interest to attend every class, and absence from class does not excuse you from the above responsibilities.

Know the rules concerning withdrawals and incompletes, published in the UGA *Undergraduate Bulletin*. Note that I will NOT withdraw you from the course for excessive absences.

All students are responsible for knowing, understanding, and abiding by the academic honesty policy of the University of Georgia, which can be found online at <http://honesty.uga.edu>

If you have any questions about this policy and how it pertains to your work in this course, please ask me for clarification.

If you have any questions or concerns about this syllabus, please contact me.

Tentative Class Schedule & Readings:

<u>Week of</u>	<u>Topic/Readings</u>
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January 9	– review; magnetostatics – Ch. 5
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January 16	– the vector potential – Ch. 5
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January 23	– magnetic fields in matter – Ch. 6
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January 30	– magnetic fields in matter– Ch. 6
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February 6	– electrodynamics – Ch. 7
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First midterm: February 11th	– Ch. 5 and 6
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February 13	– electrodynamics – Ch. 7
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February 20	– conservation laws – Ch. 8
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February 27	– conservation laws – Ch. 8
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March 6	– SPRING BREAK
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March 13	– electromagnetic waves – Ch. 9
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Second midterm: March 18th	– Ch. 7 and 8
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March 20	– electromagnetic waves – Ch.9
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Withdrawal Deadline – Thursday, March 24th	
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March 27	– electromagnetic waves – Ch. 9
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April 3	– potentials and fields – Ch. 10
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April 10	– potentials and fields – Ch. 10
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April 17	– potentials and fields – Ch. 10
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April 24	– radiation – Ch. 11
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Third midterm: April 25th	– Ch. 10
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May 1	– radiation – Ch. 11
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May 3	– Tuesday: Last day of classes
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May 4	– Wednesday: Reading Day
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FINAL EXAM – Wednesday, May 11th	, noon – 3 PM; Cumulative
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