PHYS 4201/6201 – ELECTRICITY and MAGNETISM I

Fall 2022

Professor: Loris Magnani Office: Physics 238 Phone: 542-2876
E-Mail: loris@uga.edu
Web Page: www.physast.uga.edu/~loris/astr4201/prob.html
Class Hours: MWF 12:40 PM – 1:30 PM in Physics 327
Office Hours: W 3:30 PM – 5:00 PM (or by appointment)
Call Number: PHYS 4201: 25800
PHYS 6201: 25801

Textbook: *Introduction to Electrodynamics –4th ed.* – David J. Griffiths (Pearson: Addison Wesley) - Required. It will also be used in PHYS 4202.

This course is an upper-level physics course dealing with the basics of electrodynamics theory. This is a two-semester course and PHYS 4201 is the first part that deals primarily with vector analysis, electrostatics, electric fields in matter, and magnetostatics.
I assume you have at least two years of Calculus and PHYS 3700 and PHYS 3900 as part of your background.

Grading: 5 to 10 homework problems will be assigned every week or two on the Monday class. The due dates will be announced in class and will be posted on the webpage. You may work with others in the class on the homework, but, if you choose to do so, you must write on the homework who 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 from each homework assignment to grade. Your performance on the graded problems will dictate your final homework grade.

There will be three midterms; on Monday, September 12th, on Monday, October 10th, and on Monday, November 7th. The final exam for this course is cumulative and will be on Monday, December 14th, from noon till 3 PM. The homework will constitute 15% of your grade, the midterms 20% each for a total of 60%, and the final exam will be 25% of your total score. If you miss an exam, you will have to schedule a makeup exam within one week of the original exam date. For every two days that any homework assignment is late, ten points (out of 100) will be deducted from the final score for that homework.

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 90.00 – 100.00
A-	corresponds to 87.00 – 89.99
B+	corresponds to 84.00 – 86.99
B	corresponds to 80.00 – 83.99
B-	corresponds to 77.00 – 79.99
C+	corresponds to 73.00 – 76.99
C	corresponds to 70.00 – 72.99
C-	corresponds to 60.00 – 69.99
D	corresponds to 50.00 – 59.99
F	corresponds to less than 50.00

PHYS 6201 Requirements

If you are taking this course for PHYS 6201 credit (either as a graduate or undergraduate student) you will have to do an extra homework problem for each homework set (this will be graded in addition to the regularly graded problems. Also, on the final exam you will have to do two extra exam problems.

Attendance Policy

You are responsible for all topics discussed in class, as well as class announcements (e.g., changes in homework due dates or exam dates). 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. If you have to miss class for Covid-related reasons, you should arrange to get lecture notes from fellow students or from me. You are still responsible for completing homework assignments and exams though you may turn them in later.

Academic Honesty

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.

The University Health Center offers FREE workshops, classes, mentoring and health coaching led by licensed clinicians or health educators:
https://healthcenter.uga.edu/bewelluga/

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

Tentative Class Schedule & Readings:

Week of Topic/Readings

August 14 – introduction – vector analysis– Ch. 1
August 21 – more on vector analysis – Ch. 1
August 28 – even more on vector analysis – Ch. 1
Sept. 4 – Labor Day holiday on Sept. 5 – electrostatics – Ch. 2
Sept. 11 – electrostatics – Ch. 2
First midterm: Monday, September 12th – Ch. 1
Sept. 18 – electrostatics – Ch. 2
Sept. 25 – electrostatics, special techniques – Ch. 2-3
Oct. 2 – special techniques – Ch. 3
Oct. 9– special techniques – Ch. 3
Second midterm: October 10th – Ch. 2
Oct. 16 – special techniques – Ch. 3
Oct. 23 – Fall Break holiday on Oct. 28 – electric fields in matter – Ch. 4
Withdrawal Deadline – Monday, October 24th
Oct. 30 – electric fields in matter – Ch. 4
Nov. 6 – electric fields in matter – Ch. 4
Third midterm: November 7th – Ch. 3
Nov. 13 – magnetostatics – Ch. 5
Nov. 20 – Thanksgiving break – Class **will meet** on Monday, Nov. 21
Nov. 27 – magnetostatics – Ch. 5
Dec. 4 – magnetostatics – Ch. 5
Tuesday, Dec. 6 is the last day of classes (Friday Class Schedule in Effect, so we will meet)
Reading Day – Wednesday, December 7, 2021
FINAL EXAM – Monday, December 14th – Cumulative