

August 15, 2008

Electromagnetics I: 4400:353

Time: MTWF 11:00-11:50 AM
Room: JAR 150
Dr. N. Ida (ASEC N252), e-mail: ida@uakron.edu, TEL: 972-6525

TEXT: N. Ida, Engineering Electromagnetics, 2nd edition, Springer Verlag, 2004. (see Note 7)

Office Hours: To be decided by mutual agreement. Suggested times: Monday Wednesday and Friday, 9-11 AM. However, I ask that you come and see me any time (between 7:00 AM and 6:00 PM), regardless of office hours. There will be instances in which I will be busy with other activities. In such cases I ask that you either wait or see me at other times. My telephone number is 972-6525. I will be glad to answer your questions over the phone but it is almost impossible to help with homework assignments over the phone. It is much more likely that we will misunderstand each other than by talking face to face. So please come and see me with any questions you may have. You may also communicate with me by e-mail. My e-mail is ida@uakron.edu.

Course Outline: We will follow the book rather closely. The material covered includes chapters 1, 2, 3, 4, 5, 7, 8, 9 and 10. The topics are:

Chapter 1 and 2: Review of Vector Algebra and Calculus. (Very short review; < one week)

Chapter 3: Coulomb's Law and the Electric Field

Chapter 4: Gauss' Law and the Electric Potential

Chapter 5: Boundary Value Problems

Chapter 7: The Steady Electric Current

Chapter 8: The Static Magnetic Field

Chapter 9: Magnetic materials and Properties

Chapter 10: Faraday's Law and Induction

Grading policy:

There will be three midterm exams, homework assignments and an optional final exam as follows:

Option A:

1st Exam	15%	October 3 (tentative)
2nd Exam	20%	October 31 (tentative)
3rd Exam	15%	Nov. 26 (firm – see note 1 below)
Homework	15%	
Final Exam	35%	(see notes 2-4 below)

You may choose to take the final exam. If you do not, your grade will be calculated as follows:

Option B:

1st Exam	22.5%
2nd Exam	35%
3rd Exam	22.5%
Homework	20%

Notes:

1. I will be willing to move the third exam earlier but will not agree to have the exam after thanksgiving. The reason: I want you to enjoy thanksgiving without the worry of this exam.
2. After the third exam, your initial grade will be computed using **Option B**. You will have this grade before you decide if you need or want to take the final exam.
3. The final exam will be given at the scheduled time. It is your choice to take it or not. If you do, your grade will be calculated based on **Option A**. If you do not take the final exam, your grade will be calculated based on **option B**. There is no need to tell me of your choice but you are welcome to discuss it with me. The higher grade of the two options will be used.
4. The two options are designed so that students that do very well in mid-term exams do not need to take the final while those that did not do well can still improve their grades by taking the final exam.
5. If you have the first edition of the Engineering Electromagnetics book, you may still use it. However, before you do so, log on to the Springer website and download the errata file for the 1st edition. (the errata file is part of the “supplementary files”). You may have to first go to <http://www.springeronline.com/> and then search for the book title. Once you obtain the errata file, enter all corrections carefully in your text. If you have the 2nd edition, 2nd printing, there is no errata file to worry about.
5. Before each exam, I will make available sample exams. These will be posted on my web site - <http://ee.asc3.uakron.edu/ida/> under the heading Electromagnetics I, for downloading. The number of exams may vary but usually there will be two exams with solutions and one without solutions. The purpose of this third exam is for you to try on your own.
6. I am trying to change the classroom. Those of you that had classes in JAR 150 will know that it is an exceedingly poor classroom. As soon as we find another classroom you will be notified by e-mail
7. There are two version of the second edition. These are essentially identical except for some minor corrections and modifications. The newest is the “Second printing” and is a thicker book than the regular 2nd edition. It is only thicker because the paper used is heavier – they both have the same number of pages, etc. Either version is fine.

Homework: Will be assigned on Mondays and will be due on Monday (or the first class) of the following week. Homework will be corrected, graded and returned. Solutions to all homework problems will be posted. There will be no homework assigned on thanksgiving week so that you may enjoy the thanksgiving break.

Supporting material: Additional material (previous exams with solutions, some notes, etc.) will be made available from time to time. This material is optional.

Help Session: I will hold a weekly help session after the third week of the Semester. The location and time will be announced after we discuss times convenient to all students. Help sessions are optional and intended for questions and answers, solution of problems and examples, etc.

Grader: The grader for this course is Mathew Kollartis. Any questions about grading of homework assignments should be discussed with Mathew. However, I will grade all exams so any questions about exams should be addressed to me.

Software: If you go to my website you will find two software programs you may download. You should download the first one (Electromagnetic Simulations) and use it throughout the semester. It deals with simulations to many of the issues we will study and may help in understanding. The second program (The Smith Chart) as well as parts of the first program deal with E&M II issues and will only be useful during the Spring Semester. The programs are written in Matlab.