4400:353-301 Electromagnetics I

Dr. N. Ida

Location: TBA*

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*See: Method of delivery and note on exams:


Office Hours: See method of delivery.

Course Outline: We will follow the notes closely. The material covered includes chapters 1 and 2 (review only), chapters 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: 1st Exam 15% (Tentative: Monday, June 25)
2nd Exam 20% (Tentative: Monday, July 9)
3rd Exam 15% (Tentative: Monday, July 23)
Homework 15%
Final Exam 35% (optional, see below, on Friday July 27)

Note: after the third exam, which will be given on the last week of the Semester, your initial grade will be computed using the following weights:

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

Note: The location and time of the exam will be announced at a later date.

You then have the option of taking the final exam. There is no need to tell me what you want to do. If you take the final exam, I will re-compute the grade according to the first weights above. If
not, your initial grade becomes your grade for the Semester. This option is designed so that students that do very well in term exams do not need to take the final whereas those that did not do well can still improve their grades. The final is comprehensive and will be given at the scheduled time.

**Homework:** Will be assigned Wednesdays, to be submitted on the following Monday. Homework will be corrected, graded and returned the following Monday (see below). Please note: this is a summer class and each week of classes is roughly equivalent to two weeks of regular semester classes. The homework will also be equivalent to two regular semester’s homeworks. You will have between Wednesday to the following Monday to do the homework. Because of the extent of the homework and the short period of the summer class the submission dates are firm.

**Supporting material:** Additional material will be made available on the website:
- Sample exams from previous years (with solutions)
- Summaries to Chapters 3 through 10
- A MATLAB suite of programs that demonstrates some of the principles discussed.

**Method of delivery and other details**
**During Summer 2012, the course will be web-based. This means the following:**
- The lectures will be available on line or for download on my website: [http://ee.ascs3.uakron.edu/ida/](http://ee.ascs3.uakron.edu/ida/) Each week I will send you the links for the lectures for that week by e-mail. The lectures will be available starting the weekend preceding the week in which the lectures are to be viewed.
- This means that each week you will have to go through 8, 50 minute lectures. I will have the links to all 8 lectures for the week available on Saturday so you can download them before the week begins.
- These will be available until the next scheduled lectures. After that they will be removed from the web site.
- I will assign homework by e-mail using your University of Akron e-mail address unless you wish to use a different e-mail. If you do, send me an e-mail to that effect.
- Homework will be collected by the student assistant, graded and returned to you. More information on that later.
- **Unfortunately, in this method of delivery, there will be no office hours (but see below). You can communicate with me at any time as follows:**
  - Call me on skype from your computer: My skype name is nathanida
  - Send me an e-mail
    - Note: because I may not be in the country when you call there may be a time difference between Akron and where I may be. If that’s the case I will call you back as soon as practical. Make sure you leave contact information. I can respond by e-mail, Skype or I can call you on your phone if you leave contact information.
- I am also trying to have the class evaluation forms on line. However, since evaluations are managed by the Dean’s office, I will have to wait for their approval. Should this idea not be feasible, the evaluation forms will be given in class by the student assistant. I will notify you of this in due time.
- Exams: the exams will be written by me and proctored by the student assistant in
the assigned class and assigned time. These exams will be scanned, e-mailed to me for grading and I will then send you the graded exam by e-mail. Any question about grading of exams should be addressed to me. Any question on grading of homework should be addressed to the student assistant.

Finally, I very strongly recommend that you schedule the viewing of the lectures and your work on homework so that you complete everything on time. The class is intense and the time short. If you fall behind it is difficult to catch up. For this reason alone, I will not accept late homework. The student assistant will be instructed to this effect. Please remember, we will have an exam every two weeks or so and the only way to prepare is by working continuously and steadily.

Feedback:
I ask that you give me as much valid feedback as possible so I can assess the effectiveness of this remote delivery method from your point of view. I am particularly interested in what does not work well, how it can be changed and improved and, in general, in your impressions. Please do not wait until the end of the semester but rather, send me your comments as soon as possible so I can relate them with the material and perhaps introduce changes as we go. I will share with the class all comments (anonymously, of course), again for the purpose of soliciting the class’s input as a whole.