Syllabus for Electromagnetics  
ECE 3025A – Fall 2005

Class Description:

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**ECE 3025 Electromagnetics**

Presentation of the laws and applications of electromagnetics. This course covers transmission line theory, basic electrostatics, Maxwell’s equations, and introductory concepts in electromagnetic waves.

**Instructor:** Greg Durgin  
Office: 511 Van Leer  
Office Hours: MWF immediately after class  
Tuesday 1:30 – 3:30 p.m.  
Others by appointment  
E-mail: durgin@ece.gatech.edu  
Office Phone: (404) 894-2951  
Class Web Page: http://www.propagation.gatech.edu/ECE3025

**Textbook:** First 4 Weeks: online class notes  

**Prerequisites:** Students must have taken ECE 2040 (Circuit Analysis) and one of the following math courses: MATH 2403 or MATH 2413. Note: Advancement in the ECE program requires students to complete ECE 3025 Electromagnetics with a final grade of at least C.

**Grading:**  
20% Homework – Expect approximately 10 homework assignments over the course of the semester. Homework will be assigned on Wednesday and collected the following Wednesday at the beginning of class. Late homework is not accepted.
50% Midterm Examinations (3) – There will be 3 in-class examinations, each testing material covered since the previous midterm examination. The two highest midterm scores will count 20% each toward the final class grade; the lowest midterm score will only count 10% toward the final class grade.

30% Final Examination – There will be one final, comprehensive examination and it will count 30% towards the final class grade.

Quiz Dates: Three in-class quizzes and one final exam will be administered on the following days:
- Midterm 1 – 21\(^{th}\) September 2005 (Wednesday)
- Midterm 2 – 24\(^{th}\) October 2005 (Monday)
- Midterm 3 – 21\(^{th}\) November 2005 (Monday)
- Final Exam – 15\(^{th}\) December 2005 (Thursday), 8:00 – 10:50 a.m.

Any change to this schedule will be announced with advanced notice.

Computer Usage: The web will be used extensively in this class to disseminate homework assignments, lecture materials, and class announcements.

Some homework assignments may involve the use of Matlab\textsuperscript{tm} software. Most students should have access to this software through a university computer lab or their own personal computing packages. If not, please inform the instructor.

Tentative Lecture Topics:

| I.  | Transmission Lines | V. | Maxwell’s Equations |
| II. | Vector Calculus    | VI. | Wave Propagation   |
| III. | Electrostatics     | VII. | Waveguides         |
| IV.  | Magnetostatics     | VIII. | Antennas          |

See class website for a more detailed listing of course topics from Fall 2003.

Honor Code: The Honor Code applies to every aspect of this class, with only one noteworthy exception: student discussion of concepts and techniques for solving homework problems is permitted and even encouraged outside the classroom. However, all submitted work must be original.