

EE 3308-002: Electromagnetics II
Spring 2012

Instructor(s): Robert Magnusson

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Office Hours: MW 1:30-3:00pm

Section Information: EE 3308-002

Time and Place of Class Meetings: MW 5:30-6:50pm—203 NH

Description of Course Content:

EE 3308 ELECTROMAGNETICS II (3-0) Time varying electric and magnetic fields, Faraday's law, energy in a magnetic field, displacement current, Maxwell's equations and transverse electromagnetic waves; plane waves in an unbounded medium, waves in media with planar interfaces, boundary conditions, reflection and transmission, plane waves in lossless and lossy media; electromagnetic waves in a bounded medium, guided waves, wave guides, propagation modes; transmission lines, circuit models of transmission lines, transmission line equations, reflection at discontinuities, terminations, transient response, steady state waves on transmission lines, open and short circuited lines, power flow, impedance matching and the Smith chart.

Student Learning Outcomes:

Understanding of fundamentals of electromagnetic waves

Ability to solve basic problems in simple geometries

Ability to develop mathematical models and understand their limitations

Appreciation of applications and importance of EM

Requirements:

Prerequisite: Grade C or better in EE 2307.

Regular class attendance and participation.

Required Textbooks and Other Course Materials:

Fundamentals of Applied Electromagnetics, 6th edition, F. T. Ulaby, E. Michielssen, and U. Ravaioli, Prentice Hall 2010.

Reference:

Cheng, D.K., Field and Wave Electromagnetics, 2nd Edition, Addison Wesley, 1989.

Descriptions of major assignments and examinations with due dates:

Grading: 2 in-class exams at 25% each: 50%

Homework: 15%

Final exam: 35%

Homework: Due 1 week from date of assignment, at the beginning of class. **Late homework is not accepted.** You may copy/paste problem statement to top of page, then present solution. Use 8 ½ x 11 paper and **write on one side only. Solutions must be organized and clear. Staple in top left corner.** You may work on your homework in teams; however, for grading purposes, each student needs to submit homework separately (with the names of the team-members noted). Follow these simple instructions in detail.

In-class exam dates: February 27, 2012

April 11, 2012

Final exam: Per final exam schedule: Monday, May 7, 2012, 5:30–8 p.m.

Grading Policy:

Final grade is determined based on scores in homework, exams, and project. The standard academic scale of A, B, C, D, F will be used.

Attendance Policy:

I expect students to attend class for their own benefit. I do not, however, grade you on attendance.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. Contact the Financial Aid Office for more information.

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity: It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. According to the UT System Regents' Rule 50101, §2.2, "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts."

Student Support Services Available: The University of Texas at Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. These resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals to resources for any reason, students may contact the Maverick Resource Hotline at 817-272-6107 or visit www.uta.edu/resources for more information.

Electronic Communication Policy: The University of Texas at Arlington has adopted the University "MavMail" address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. **Students are responsible for checking their MavMail regularly.** Information about activating and using MavMail is available at <http://www.uta.edu/oit/email/>. There is no additional charge to students for using this account, and it remains active even after they graduate from UT Arlington.

To obtain your NetID or for logon assistance, visit <https://webapps.uta.edu/oit/selfservice/>. If you are unable to resolve your issue from the Self-Service website, contact the Helpdesk at helpdesk@uta.edu.