E3407: Electromagnetics

Time and location: Please check with your MyMav page.

Blackboard access	https://elearn.uta.edu
	· All the **lecture notes**, **laboratory notes**, and **textbook chapter problem solutions** are posted in the Blackboard. They are all password and copyright protected.
Lab session access	The lab notes and report templates are posted in the Blackboard in the class session page. They are NOT in the lab session page.
Description (4)	EE 3407 ELECTROMAGNETICS (3) + Laboratory Session (1)
	Time varying electric and magnetic fields, 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, antennas. Problems and experimental demonstrations will be covered during recitation and laboratory sessions.
Exam schedules:	Published in the Blackboard.
Prerequisites:	Prerequisite: C or better in both EE 2347 and PHYS 1444. Co-requisite is EE 3446.
Required textbook	Fundamentals of Applied Electromagnetics, 6/E. Fawwaz T. Ulaby, Eric Michielssen, Umberto Ravaioli ISBN-10: 0132139316 • ISBN-13: 9780132139311

	Prentice Hall • Published 02/25/2010 Reserved in the Engineering library.
Policy	Grading Midterm exam #1 25% Midterm exam #2 25% Pop quizzes 5% Final exam 25% Lab 20%
Grade policy	All grades or scores are final after two weeks from the day the scores are given. After the two week period, your scores or grades will not be changed.
Ethics and conducts of students	· The College of Engineering cannot and will not tolerate any form of academic dishonesty by students. This includes, but is not limited to cheating on examinations and homework/project assignment; plagiarism or collusion. Definitions of cheating on exams includes · Copying from another's paper, any means of communication with another during exam, giving aid to or receiving aid from another during exam; · Using any material during exam that is unauthorized by the proctor; · Taking or attempting to take an exam for another student or allowing another student to take or attempt to take an exam for oneself; · Using, obtaining, or attempting to obtain by any means the whole or any part of an unadministered exam. · Plagiarism is the unacknowledged incorporation of another's work into work which the student offers for credits. · Collusion is the unauthorized collaboration of another in preparing work that a student offers for credit. · All students have to sign the Statement on Ethics, Professionalism and Conduct of Engineering Students for College of Engineering,

University of Texas at Arlington and submit it electronically in Blackboard. The student fail to do so will not receive credits.

- Any evidence of cheating or plagiarism in reports will cause ZERO credit. This is a zero-tolerance policy. Any evidence of cheating or plagiarism in final project reports will receive ZERO credit for the entire semester.
- Any conduct considered as cheating and evidence will be handed over to the Provost Office. The lecturer and teaching assistants will not be personally involved.

- Email, classroom and profession etiquette
  - Students are required to present professionalism, courtesy and politeness in the classroom and lab. No loud voices, invasive or intrusive behaviors are allowed. No food is allowed in class. Any violation will be reported to the UTA police.
  - Student visits and phone calls are only allowed in the office hours and TA office hours. Please do not visit without an appointment if you cannot make it in the office hours. Appointment can be made through emails.
  - It is important to follow common email etiquette. Any email that looks like a text message will be ignored because our goals are to mentor students to have professionalism. Being polite and courteous is not difficult to follow [complete list is in http://www.101emailetiquettetips.com/. The following are cited from the website]
  - Make sure your e-mail includes a courteous greeting and closing. Helps to make your e-mail not seem demanding or terse.
  - Address your contact with the appropriate level of formality and make sure you spelled their names correctly.
  - Read your email out loud to ensure the tone is that which you desire.

- The exam dates will be published in the Blackboard in advance. One week notice is required in the case of events for

	absence. Any reason for absence has to be communicated through email, using student's UTA email account, to the professor and undergraduate advisor to receive approval. For emergency, a doctor's notes or an official affidavit of legitimate reasons and proof has to be presented. Professor and Undergraduate advisor will determine if the reason is acceptable. · No make-up exam will be given. · Any transfer, free or charged with money, of the previous exam material is considered copyright violation. · The labs and classrooms are shared by other students. Talking on the phones, talking loudly, watching materials unrelated to the class or lab session, listening to music through headphone during the sessions, and any inconsiderate behaviors are not allowed. The classrooms and labs are the places to learn. Police will be called directly if the student does not follow the rules.
Americans with Disabilities Act:	The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93-112 - The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled the *Americans with Disabilities Act (ADA)*, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens in the United States. We are required by law to provide reasonable accommodation to students with disabilities so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester (before the census date) and in providing authorized documentation through designated administrative channels (Office for Students with Disabilities, 601 S. Nedderman Dr. · University Hall, Room 102, Box 19510 · Arlington, TX 76019, Phone: 817-272-3364 · Fax: 817-272-1447). Students can check http://www.uta.edu/disability/ for information.

Textbooks:

Recommended textbooks

- Electromagnetics For Engineers (W/Cd) by Fawwaz T. Ulaby, Prentice Hall 2004, ISBN: 0131497243. [We were told by the bookstore that this book will be phased out in the future.]
- Fundamentals of Applied Electromagnetics, 6/E, Fawwaz T. Ulaby, Eric Michiellssen, Umberto Ravaioli, Prentice Hall, 978-0-13-213931-1. [Our class will adapt this book in the future.]
- Field and Wave Electromagnetics, 2/E, David K. Cheng, ISBN-10: 0201128195. [This book will be used as a reference.]

References:

- Basics
  - Fundamentals of Electromagnetics with Engineering Applications, Stuart M. Wentworth, ISBN: 0-470-10575-5
  - Engineering Electromagnetics, Constantine A. Balanis, ISBN: 0-471-62194-3
  - Electromagnetics, James R. Ogden, ISBN: 0878915508
  - Electromagnetics for Engineers: With Applications to Digital Systems and Electromagnetic Interference, EMAG Solutions Companion, Clayton R. Paul, ISBN: 0-471-67591-1
  - Engineering Electromagnetics, William H. Hayt, Jr. and Hohn A. Buck, 7th Edition,
  - Engineering Electromagnetics, Nathan Ida, ISBN: 0-387-20156-4
  - Fundamentals of Engineering Electromagnetics, David K. Cheng, ISBN-10: 0201566117
- Waves
  - Electromagnetic Field Theory Fundamentals, Bhag Singh Guru, ISBN-10: 0521830168
  - An Introduction to Classical Electromagnetic Radiation, Glenn S. Smith, ISBN-10: 0521586984
  - Electromagnetic Waves, David H. Staelin, Ann Morgenthaler, Jin Au Kong, ISBN: 0132258714
  - Electromagnetic Waves, Aziz S. Inan, Umran S. Inan. ISBN: 0201361795
  - Fields and Waves in Communication Electronics, 3rd Edition, Simon Ramo, John R. Whinnery, Theodore Van Duzer, ISBN:

0-471-58551-3
  - Scattering of Electromagnetic Waves, Advanced Topics, Leung Tsang, Jin Au Kong, ISBN: 0-471-38801-7
- Antenna
  - Antenna Theory & Design, Revised Edition, Robert S. Elliott, ISBN: 0-471-44996-2
  - Antenna Theory and Design, 2nd Edition, Warren L. Stutzman, Gary A. Thiele, ISBN: 0-471-02590-9
  - Foundations of Antenna Theory and Techniques, Vincent Fusco, ISBN: 0130262676
  - Antenna Engineering Handbook, Fourth Edition, John Volakis, ISBN: 0071475745