

Spring 2009
EE2307-002 Electromagnetics I
Syllabus

1. Instructor: Samir Iqbal
2. Office Location: NanoFab 217; Mailbox: 19072
3. Phone and Email: (817) 272-0228; Fax: (817) 272-7458, SMIQBAL@uta.edu
4. Office Hours: M4:30-5:30, Tu 2:30-3:30,W: 10:00-11:00
5. Course Meeting: MW 5:30 pm to 6:50 pm in GACB 103
6. Instructor Information Online:
http://www.uta.edu/ee/faculty_intro.php?id=60 and
<http://www.uta.edu/ee/NanoBioLab/contact.htm>
7. Link to Additional Course Material: <http://webct.uta.edu>
8. TA: TBA
9. TA Office Location and Hours: TBA
10. Catalog Description: Electric charge, Coulomb's law, static electric field, electric potential, electric flux, Gauss's law, divergence theorem, electric conductor, dielectric media, permittivity, electric field boundary conditions, capacitance, electrostatic energy and forces, steady electric current, electromotive force, Kirchhoff's voltage law and Kirchhoff's current law; Static magnetic field, Ampere's law of force, Biot-Savart law, Ampere's circuital law, curl of the magnetic field, Stokes' theorem, vector magnetic potential, magnetic flux, magnetic fields in media, permeability, magnetic field boundary conditions, magnetic forces and the Hall effect.
11. Requirements:
Co-requisite: EE2446 and MATH 3319.
12. Student Learning Outcomes (ABET):
 - a) Understanding of orthogonal coordinate systems.
 - b) Understanding of vector and scalar function of space and their application in representing vector fields.
 - c) Understanding the relation between electric charges and the associated electric fields.
 - d) Capability to provide mathematical description of an electric field in unbounded media.
 - e) Understanding of the relation between steady electric current and magnetic field.
 - f) Capability to provide mathematical description of magnetic field in unbounded media.
 - g) Understanding of the effects of medium properties, including discontinuities, on static electric and magnetic fields.
 - h) Understanding of methods to measure the effects of electric charges and steady electric current.
 - i) Capability to apply the concepts to solve electrostatic and magnetostatic problems.
13. Required Text:
Field and Wave Electromagnetics, 2nd Ed, by David K. Cheng,
Addison-Wesley Publishing 1989, ISBN: 0-201-12819-5.

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14. Description of Major Assignments:

Two midterm exams
One final exam, per university final exam schedule
Homeworks

15. Grading Policy:

Homework 10%
Two Midterm Exams 50% (25% each)
Final Exam 40%

Pop quizzes may be given and count towards the homework portion of the grade. The instructor reserves the right to modify the grading scheme.

16. Missed Exams, Quizzes and Makeup Work:

Late homework will be penalized at 50% per day late. Homework is due at the beginning of class. Missed exams and quizzes will be given a makeup only for serious illness or emergency and require a doctors certificate or similar written documentation. If you can not meet an assignment due date or appear for an exam, give me advance notice. Email me, call a friend to email me or meet me before any anticipated conflict of schedule. No credit will be given for the missed assignment unless such absence/delay/failure-to-deliver occurs due to a documented emergency. Students requiring a makeup exam must make an appointment within one week after the scheduled due date or exam date. You may be asked to furnish further evidence to confirm the nature of emergency. Only the instructor reserves the right to provide accommodation for missed assignments or tests. No early exams will be given.

17. Attendance:

Attendance is required.

18. Drop policy:

Drop policy will be as per University guidelines. See the Registrar's Bulletin or the University Calendar in the front part of the UTA catalog for drop dates. For a time table online see: http://www3.uta.edu/registrar/registration_schedule_Spring2009_Regular.asp

19. Tentative Lecture/Topic Schedule (course content). .

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| a) Vectors | j) Static magnetic field |
| b) Coulomb's law | k) Ampere's law of force and Biot-Savart law |
| c) Gauss's law | l) Stokes' theorem |
| d) Divergence theorem | m) Magnetic fields in media |
| e) Electric conductors | n) Hall effect |
| f) Dielectric media | o) Magnetic Vector Potential |
| g) Electrostatic energy and forces | p) Faraday's Law |
| h) Electric Potential | |
| i) Kirchhoff's voltage law and Kirchhoff's current law | |

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20. WebCT:

The WebCT will be used to post grades of your assignments, homeworks, etc. Use your OIT login information to access WebCT at <https://webct.uta.edu/>.

21. Final Review Week:

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no themes, research problems or exercises of similar scope that have a completion date during or following this week will be assigned, unless specified in the class syllabi. During Final Review Week, no examinations constituting 10% or more of the final grade will be given, except makeup tests and laboratory examinations. In addition, no portion of the final examination will be given during Final Review Week.

22. Americans with Disabilities Act:

If you require an accommodation based upon disability, please meet me in my office during the first week of classes. 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 92-112 - The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled 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.

As a faculty member, I am required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at www.uta.edu/disability. Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

23. Academic Dishonesty:

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. You are required to carefully read and sign the form titled "STATEMENT ON ETHICS, PROFESSIONALISM, AND CONDUCT FOR ENGINEERING STUDENTS". If you need a soft copy of this statement, send me an email.

"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." (Regents' Rules and Regulations, Series 50101, Section 2.2 and Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22)

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For the first occurrence of academic dishonesty (plagiarism, copying, collusion etc.) by a student, a zero grade will be given on the exam, report, assignment, or project, as the case may be. Second occurrence of academic dishonesty by the same student (individual or in a team) will result in automatic reduction of one grade letter in the final grade. The Office of Student Judicial Affairs will be informed in writing in all cases of academic dishonesty.

Plagiarism has many shapes, but can be explained in a few examples. It maybe presenting someone else's published words (and work) in a way that these words (and works) do not clearly show the source. Any text from someone else's work can not be used "verbatim" unless in double quotes and followed by a citation (or appropriate credit). Website sources like Wikipedia are generally not allowed in this course but same policy of citation holds for internet sources also. If you are in doubt, ask me. You can not work in collusion or team if you are assigned "an individual assignment."

24. Student Support Services Available

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

25. E-Culture Policy:

When sending an email to me, please put the course number [EE2307-002] as the first text on the email subject. This will get you prompt attention from me. The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT-Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email.

All students are assigned an email account and information about activating and using it is available at www.uta.edu/email. New students (first semester at UTA) are able to activate their email account 24 hours after registering for courses. There is no additional charge to students for using this account, and it remains active as long as a student is enrolled at UT-Arlington. Students are responsible for checking their email regularly.

I will send important course-related information to your UTA e-mail address ONLY. Your email to me should also come from a UTA email account. My junk mail filter does not like hotmail, yahoo, gmail and a long list of other words in email addresses. Your email message sent from non-UTA accounts may never reach me. You will be responsible for any misplaced or mis-directed email that is sent from non-UTA email address.

26. Grade Grievance Policy:

If you have any grievance regarding a grade, consult with me. Information about the UTA grievance policy is given at http://www.uta.edu/gradcatalog/general_info#grievances