

EE 3321 Electromagnetic Field Theory

Fall 2017: (August 28th – December 1st)

Section: 11580

Class Time: MW 03:00 pm - 4:20 pm

Recitation Sessions and MATLAB Workshops: F 2:00 pm to 4:00 PM.

Classroom: UGLC 324

Instructor: Dr. Benjamin C. Flores

Required Book: *Fundamentals of Applied Electromagnetics*, Seventh Edition, by Fawwaz T. Ulaby and Umberto Ravaioli, Pearson Education Inc., New Jersey, 2015.

Other Materials: All slide presentations will be posted in **Blackboard**. You are responsible for printing them, placing them in a binder, and bringing them to class.

Course Description: Fundamental laws and concepts of electrostatics, magnetostatics, transmission lines, Maxwell's equations.

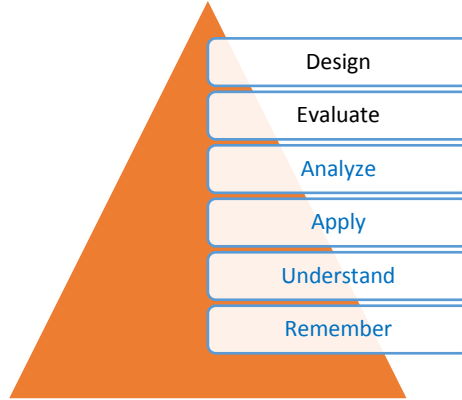
Prerequisites: By courses, students must have earned a grade of "C" or better in EE 2351 Electric Circuits. By topic, students must remember and understand:

- Phasor operations
- Cartesian, cylindrical, and spherical coordinate systems
- Gradient, divergence, curl, and Laplacian operators
- Solutions to second order ordinary differential equations

Study Habits. For every hour of lecture, you are expected to dedicate at least three hours of study per day until you understand the material and you finish your homework assignment. This is a standard expectation. Thus, you should study approximately 9 hours per week or until you fully understand the material discussed in class. Time on task is essential for your success!

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Course Outcomes: From an educational perspective, you are expected to *remember* (recall facts and basic concepts), *understand* (explain ideas and concepts), *apply* (use information in new situations), and *analyze* (draw connections among ideas). This is part of a taxonomy that describes your depth of knowledge as shown in the figure below.



You are expected to master the four lower levels of this taxonomy. Consequently, by the end of the semester, you will be able to:

- Analyze transmission lines to derive distributed parameters (Chapter 2)
- Understand spatial coordinate systems and apply calculus operators (Chapter 3)
- Apply fundamental laws to solve basic electrostatic problems (Chapters 3 and 4)
- Apply fundamental laws to solve basic magnetostatic problems (Chapters 3 and 5)
- Remember, understand, and analyze Maxwell's equations (Chapter 6).

Grading

There will be four midterm exams. The average of these exams will count 60% of your final grade. There will be a short quiz every day and there are no makeup opportunities for short quizzes. The average of these quizzes will determine 20% of your grade. There will be one MATLAB assignment per chapter. These assignments will count 10%. Homework will count 10%.

The final examination will be an opportunity to “make up” midterm exams on which you score less than 70/100 points. If you missed an exam, you may not retake an exam unless you have a justifiable reason (such illness, civic duty, or family emergency). Please inform the instructor by e-mail if you miss an exam. The instructor will determine if the justification is acceptable for a makeup.

Midterm Exams (4)	60%	Time on task
Quizzes (daily)	10%	Attendance
MATLAB Assignments	10%	Time on task
Homework and course binder	20%	Time on task organization
Total	100%	

In Class Participation

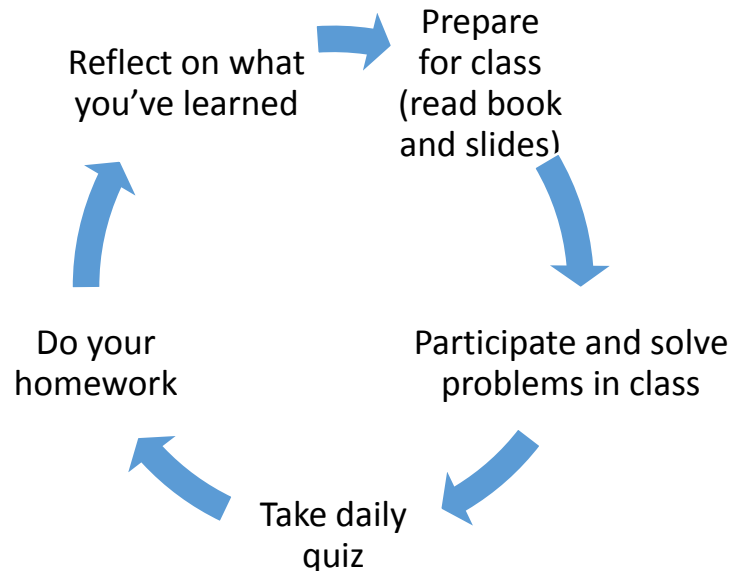
As a college student, you are expected to attend regularly and participate in class. Uncooperative behavior as determined by the instructor and classmates may be penalized with a grade reduction.

Study Strategy

Dedicating time and effort to this course can be achieved systematically. The process is simple but it requires your commitment. As a college student you should strive to:

1. Study the corresponding slide presentation **before** each class period.
2. Read the corresponding chapter sections in the book **before** each class period.
3. Attend class and participate in discussions.
4. Solve, collaboratively, the exercises in the handouts.
5. Take the daily quiz.
6. Do your homework with a study partner.
7. Reflect on what you learned and need to improve upon.

This is a cycle that a good engineer student commits to practice. As the saying goes: practice makes perfect. The expectation is that you will do your best. Your final grade should be a reflection of this effort.



INSTITUTIONAL POLICIES

Academic Dishonesty. As an entity of The University of Texas at El Paso, the Department of Electrical and Computer Engineering is committed to the development of its students and to the promotion of personal integrity and self-responsibility. The assumption that a student's work is a fair representation of the student's ability to perform is the basis for departmental and institutional quality. All students within the Department are expected to observe appropriate standards of conduct. Acts of scholastic dishonesty such as cheating, plagiarism, collusion, the submission for credit of any work or materials that attributable in the 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 will not be tolerated. Any case involving academic dishonesty will be referred to the Office of the Dean of Students. The Dean will assign a Student Judicial Affairs Coordinator who will investigate the charge and alert the student as to its disposition. Consequences of academic dishonesty may be as severe as dismissal from the University. See the Office of the Dean of Students' homepage (Office of Student Life) at <http://studentaffairs.utep.edu/dos> for more information.

You can also refer to the IEEE website for information on our code of ethics:
<http://www.ieee.org/about/corporate/governance/p7-8.html>.

American Disabilities Act. The UTEP Disabled Student Services Office was established for the purpose of providing appropriate and reasonable accommodations as mandated by the Rehabilitation Act of 1973 (<http://www.dol.gov/oasam/regs/statutes/sec504.htm>) and the Americans with Disabilities Act (<http://www.ada.gov/>). If you have needs regarding learning disabilities, please report your special needs to the course instructor the first day of classes. For additional help, contact the Center for Accommodations and Support Services (CASS): (915) 747-5148, cass@utep.edu.

Discrimination. Members of the UTEP community are protected from discrimination and harassment by State and Federal Laws. Discrimination on campus on the basis of age, gender, race, ethnicity, national origin, religion, disability, or sexual orientation is strictly prohibited.

Campus Concealed Carry. For details see <http://sa.utep.edu/campuscarry>. The instructor reserves the right not to engage individuals who carry a concealed weapon. The instructor will provide oral notice if needed.

Note: This syllabus is subject to minor changes as determined by the instructor.

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I've read the course syllabus and understand the policies and procedures that apply to this course. Furthermore, I understand that if I do not agree to sign this form and return it to the instructor I forfeit the opportunity to take any makeup exams.

Name _____

Signature _____

Student ID # _____