University of Southern California
Ming Hsieh Department of Electrical Engineering
EE 330 (Electromagnetics I)
Fall Term 2016 (Session 001, Section 30463R)
Units: 3
Tuesday, Thursday, 14:00–15:20, SGM 601

Instructor: Alireza Tabatabaeenejad
alirezat@usc.edu

Office Hours: Thursday, 16:00–18:00 (or by appointment), DRB 226

Teaching Assistants: Liang Chen, chen83@usc.edu
Pratik Shah, pratiks@usc.edu

TA Office Hours: Pratik: Monday, 16:00–18:00, DRB 226
Liang: Wednesday, 16:00–18:00, RTH B105

Discussion: Friday, 10:00–11:50, GFS 108
Friday, 12:00–13:50, GFS 221

Course Website: blackboard.usc.edu
Calendar: https://goo.gl/n7FFzo
Twitter: @USC_EE330

Primary Text: Ulaby and Ravaioli, Fundamentals of Applied Electromagnetics (7th Edition); Website: http://em7e.eecs.umich.edu/

Other References: David K. Cheng, Field and Wave Electromagnetics
Kraus and Fleisch, Electromagnetics with Applications
U. Inan and A. Inan, Electromagnetic Waves
Hayt and Buck, Engineering Electromagnetics

Grading:
10 Homework Sets 30%
Midterm Exam 30%
Weekly Quizzes (in Discussion) 10%
Final Exam 30%

Important Dates:
First Day of Class 08/23/2016
Midterm Exam 10/06/2016, 14:00–15:20
No Class 11/08/2016
Thanksgiving 11/23–27/2016
Last Day of Class 12/01/2016
Final Exam 12/08/2016, 14:00–16:00

Homework
All homework sets are due in class one week following assignment. Late homework will not be accepted. Solutions will be posted on the course website 2–3 days after due date.
Prerequisite
You are expected to be familiar with circuit analysis, Ohm's law, Kirchhoff's current and voltage laws, and undergraduate calculus.

Course Description
This course will cover basic static and dynamic electromagnetic field theory and applications, electrostatics, magnetostatics, Maxwell's equations, energy flow, plane waves incident on planar boundaries, and transmission lines.

Learning Objectives
By taking this course, you will gain a deeper understanding of electromagnetic concepts and applications. Particularly, you will learn

- Analysis and design of transmission line circuits
- Spatial patterns of the electric and magnetic fields induced by charges and currents
- The gradient, divergence, and curl operation on spatial functions
- The temporal and spatial waveforms of plane waves propagating in lossless and lossy media
- Field distributions inside a rectangular waveguide
- Basics of antennas and radiation pattern of linear antennas

Miscellaneous Information
1. All exams are closed-book. You may use a calculator and notes written on both sides of a single 8.5”×11” sheet of paper. You will be tested on all material covered in class, on the assigned readings, and on the homework problems as well as problems similar to those. Please bring your USC ID card to each exam; it may be checked during the exam.
2. You must take the exams at the scheduled times. If you are absent during an exam, you will receive a grade of zero unless you have a valid reason for your absence and you have discussed it with the professor prior to the exam. A student must discuss a final examination conflict with the professor no later than two weeks prior to the scheduled examination date to arrange an acceptable alternate examination date and time.
3. The weekly quizzes are short (~15 minutes in duration) and are given during the discussion sessions. They are closed-book, closed-notes, and given throughout the semester. They cover material from the preceding week’s lecture and homework.

University Policy on Grading and Correction of Grades
Grading is consistent with the "Grading and Correction of Grades" handbook.

Honor Code
The common-sense honor code applies to all aspects of this course. The fine print is below on the specific issue of how much collaboration is permissible among students in the preparation of solutions to problem assignments. Bottom line is that all homework assignments are to be completed on your own. You are allowed, and encouraged, to consult with other students in the current class regarding the general approach to solving problems, but all work submitted by you must be your work alone. It is important that you learn how to do these problems on your own. You are not allowed to possess or in any way derive advantage from the existing solutions prepared in previous years by former students, earlier professors, or from on-line sources. Violations of this
policy are grounds for disciplinary actions filed with the Deans Office. If you have any questions or are in doubt, do not hesitate to ask for clarification.

**USC Statement on Academic Integrity**
USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one’s own academic work from misuse by others as well as to avoid using another’s work as one’s own. All students are expected to understand and abide by these principles. *SCampus*, the Student Guidebook, contains the Student Conduct Code as well as the recommended sanctions.

**USC Statement for Students with Disabilities**
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the instructor (or to TA) as early in the semester as possible.

**Religious Holy Days**
University policy grants students excused absences from class for observance of religious holy days. Students are advised to scan their syllabi at the beginning of each course to detect potential conflicts with their religious observances. Please note that this applies only to the holy days that necessitate absence from class and/or whose religious requirements clearly conflict with aspects of academic performance. Students should contact the faculty in advance to request such an excused absence. The student will be given an opportunity to make up missed work because of religious observance.

**Emergency Preparedness/Course Continuity in a Crisis**
In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies. See the University’s Website on Campus Safety and Emergency Preparedness.
# Tentative Lecture Schedule

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