EE 101B – ELECTROMAGNETIC WAVES
Mon/Wed 4:00 PM-5:50 PM, MS 5200
Spring 2018

Instructor: Mona Jarrahi
66-147E Engineering IV, Phone: (310) 206-1371
Office Hours: 6-7:30 pm on Mondays
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Course TAs: Chunru Fan, fanchunr@g.ucla.edu
Office Hours: 2-3:30 pm on Thursdays, and 11:00-12:30 on Fridays
Location: Engineering IV 6F TA meeting room


References
U. Inan and A. Inan, Electromagnetic Waves
David K. Cheng, Field And Wave Electromagnetics
David Pozar, Microwave Engineering
Reitz et. al, Foundations of Electromagnetic Theory
C. Balanis, Advanced Engineering Electromagetics.

Pre-requisite: EE101A - Engineering Electromagnetics

Goals: Introduction to radio and optical wave propagation, waveguides, and antennas. Introduction to theory and applications of electromagnetic waves. Lay foundation for advanced EM, Optics, RF and Microwave courses.

Discussion
1A: Fri 3:00-3:50 pm Humanities Building A26
1C: Fri 2:00-2:50 pm Public Affairs Building 1264

Homework: Homework assignments will be given every week (6-8 problems). You are strongly encouraged to do the problems. Due the following week at or before the beginning of lecture.
**Late Policy:** Late homework is discounted at 50% for the first day, not accepted if more than a day late. Homework solutions will be available at the course website. Do not allow yourself to get behind.

**Exams:** There will be one midterm and one final exam. No make-up exam will be given. If you have a legitimate excuse for missing a test, your other tests will be averaged.

**Grading:**

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Midterm</td>
<td>30%</td>
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<tr>
<td>Homework</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
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**Course Outline**

**Chapter 7: Plane Electromagnetic Waves**
Solution of the wave equation, plane waves in lossless and lossy media, polarization of waves, phase and group velocities, Poynting vector for elliptically polarized waves.

**Chapter 8: Wave reflection and Transmission**
Wave reflection and transmission at normal incidence, Snell's laws, Wave reflection and transmission at oblique incidence, Fibers and Waveguides.

**Chapter 9: Radiations and Antennas**
Basic antenna parameters, Half-wave dipole, Large Aperture Antennas, Friis transmission formula, antenna arrays.