Course Syllabus	**EECS 3720 – Electromagnetics II**
Credits & Contact Hours	3 credit hours & three 50-minute lecture contact hours
Instructor's Name	Dr. Daniel Georgiev
Textbook	*Required:* F. T. Ulaby, E. Michielssen, U. Ravaioli "Fundamentals of Applied Electromagnetics", Prentice Hall, 7/E, 2015
Course Information	This course covers Maxwell's equations, boundary conditions for electromagnetics, plane-wave propagation in lossless and lossy media, wave reflection and transmission, transmission lines and waveguides, cavity resonators, radiation, antennas, antenna radiation characteristics. Prerequisites: EECS 3710 Electromagnetics I Required course for EE program

Specific Goals - Student Learning Objectives (SLOs)

The student will be able to
1. learn the basics of transmission lines (TL), propagation of harmonic signals on TL, TL parameters and equations. Be able to apply the knowledge in basic analysis and design problems.
2. learn the basics of the Smith Chart as a tool for transmission line calculations, and be able to use it for basic parameter calculation and analysis of transmission lines.
3. emphasize understanding of Maxwell's equations in differential and integral forms in solving electromagnetic problems.
4. understand the concept of plane-wave propagation in a lossless and lossy media.
5. use knowledge on wave reflection and transmission of plane waves for normal and oblique incidence, and basic analysis of transmission in optic fibers and rectangular cavities.
6. characterize the radiation of an antenna in terms of it radiation pattern, directivity, gain, bandwidth and radiation resistance.
7. understand the fundamentals of CAD modeling and to apply CAD packages to design and optimization of electromagnetic circuits.

Topics

1. Electromagnetics I Review
2. Plane Wave Propagation
3. Transmission Lines
4. Wave Reflection and Transmission
5. Radiation and Antennas