

ENEE 680**Electromagnetic Theory****Course Outline****Fall 2010**

Chapter.Section	Topics	Lectures
1.1 – 1.13	Coulomb's Law, Electric Field, Gauss's law, Surface Charge distributions, Poisson and Laplace Equations, Green's Theorem, Electrostatic Energy, Capacitance, Variational and Iterative solutions to Poisson's equation	5
2.1 – 2.12	Method of Images, Point charges near spherical conductors, Spere's with prescribed potential, Orthogonal functions and expansions, fields near corners of conductors	4
Exam I	Around Oct. 9	
3.1-3.12	Solutions of Laplace's equations and Greens functions in spherical and cylindrical coordinate systems	4
4.1-4.7	Multipole expansions, dielectric material, boundary conditions in the presence of dielectrics, energy storage with dielectrics, models for dielectrics	4
Exam II	Around Nov. 13	
5.1 – 5.12 5.15-5.18	Biot-Savart Law, Ampere's law, vector potential, Macroscopic equations and boundary conditions, Faraday's law, Energy in a magnetic field inductors and mutual inductance	4
6.1-6.9	Maxwell's displacement current, vector and scalar potentials, Green's function for solution of wave equation, Poynting's theorem.	4
Final	Dec. 2010	

