ENEE 380/380H Course Outline Fall 2013

Topic	Textbook Sections	Lectures
Electromagnetic Model		
Introduction	1.1, 1.2	1
SI units	1.3	
Static Electric Field		
Coulomb's Law	3.3-3.3	
Guass' Law	3.4	
Electric Potential	3.5	7
Conductors, Dielectrics	3.7, 3.7	
Boundary conditions	3.9	
Capacitors	3.10	
Energy	3.11	
	Exam 1:(TBD)	
Solution of Electrostatic Problems		
Poisson and Laplace Equations	4.1, 4.2	
Uniqueness of solution	4.3	5
Method of images	4.4	
Boundary value problems	4.5-4.7	
Steady Currents		
Current density and Ohm's law	5.1, 5.2	
Electromotive force	5.3	
Continuity of current	5.4	3
Power dissipation	5.5	
Resistance	5.6, 5.7	
	Exam 2:(TBD)	
Static Magnetic Fields		
Magnetostatics postulates	6.1, 6.2	
Vector magnetic Potential	6.3	
Biot-Savart law	6.4	5
Magnetization and permeability	6.5-6.7	
Magnetic circuits	6.8-6.10	
Inductors	6.11	
Time Varying EM fields		
Magnetic induction	7.1,7.2	
Displacement current	7.3	
Maxwell's equations	7.3	4
Boundary conditions	7.5	
Time harmonic fields	7.7	
Summary		