

EE221 Electromagnetic Theory

Textbook: Field and Wave Electromagnetics by David Cheng 2nd edition

Course Information	Grading			Attendance
	Mid1%25	Mid2%25	Final %50	Maximum 4 weeks absence excused

Week	Topics	Ch.	Sec.	Homework
17 Feb	Coordinate System Vector Analyses	2	2.4-2.10	P.2.14, 16, 17, 18, 20, 26, 34, 37
24 Feb	Gauss Law, Electrostatic potential: symmetrical cases	3	3.1-3.6	R.3.10,11,19 and P.3.11, 12, 19
03 Mar	Multipole expansion, dielectric media, polarization density, bound charges, capacitors	3	3.7-3.11	P.3.22, 23, 24, 28, 33
10 Mar	Laplace Eq. image method: planar, cylindrical geometry	4	4.1-4.4	R.4.6, 7, 10, 11 and P.4.4, 7, 17
17 Mar	Boundary Value Problems: Cartesian, spherical and cylindrical geometry.	4	4.5-4.7	P.4.18, 21, 22, 25, 26, 27
24 Mar	Ohm's Law, Steady Current	5	5.2-5.7	R.5.14, 17, 18, 19, 20 and P.5.9, 21, 23
31 Mar	Magneto statics: Biot-Savart/Ampere Law, Vector Potential, magneto static potential	6	6.1-6.4	R.6.11, 12, 14, 17 and P.6.6, 10, 15, 19
07 Apr	Magnetization: equivalent current and charges, inductance	6	6.5-6.12	R.6.18, 20, 21, 23, and P.6.21, 10, 15, 22, 26, 33, 38, 39
14 Apr	Faraday's Law, Maxwell's Equations, Poynting Theorem	7	7.1-7.6	R.7.1, 17, 18, 25, and P.7.15,25, 30
21 Apr	Midterm Exam			
28 Apr	Plane Wave in Lossy media, Polarized waves,	8	8.3-8.6	R.8.2, 10-13, 19-21, and P.8.4-9, 15, 20, 21
05 May	Normal incidence, multiple layers, oblique incidence: TE and TM polarization	8	8.7-8.10	P.8.22-26, 27, 28, 32-34,40
12 May	Metallic wave guide: modes	10	10.1-10.5	R.10.5, 11-13, 22, and P.10.8-11, 16, 17
19 May	Holiday			
28 May	Dielectric wave guides	10	10.5-10.6	