

Electromagnetism — Spring 2004

Schedule

General comments: Class meets every Wednesday from 2:10 PM to 4:50PM. Attendance matters...a lot. Almost every Monday, I will hold an optional homework review session at a time to be determined by the class.

Date	Topics	Reading Assignments	Homework Due:
14 Jan	Intro to Class Intro to E+M Remember Vectors	“Advertisement” Ch. 1.1	none
21 Jan	Coulomb’s Law Remember Some Vector Calculus Gauss’s Law	Ch. 1.2 – 1.4 Ch. 2.1 – 2.2	HW1 Post: 1.5, 1.7 Pre: 1.15, 1.18, 2.2
28 Jan	Electrostatic Potential Remember More Vector Calculus Electrostatic Potential Energy and Work	Ch. 1.5 – 1.6 Ch. 2.3 – 2.4	HW2 Post: 1.32, 1.33, 2.6, 2.9, 2.16 Pre: 2.20, 2.21
04 Feb	Electrostatic Properties of Conductors Capacitors What Laplace’s Equation Tells Us	Ch. 2.5 Ch. 3.1	TBA
11 Feb	Clever Tricks for Finding Electric Fields, Potentials, and Charge Distributions	Ch. 3.2-3.4	TBA
18 Feb	Highlights of Electric Fields in Matter	Ch. 4	TBA
25 Feb	Lorentz Force Biot-Savart Law	Ch. 5.1 – 5.2	TBA
03 Mar	MIDTERM	Covers Ch. 1-4	none
17 Mar	Mathematical Properties of the Magnetic Field Magnetic Vector Potential	Ch. 5.3 – 5.4	TBA
24 Mar	Highlights of Magnetic Fields in Matter	Ch. 6	TBA
31 Mar	Faraday’s Law Electromotive Force Electromagnetic Induction Inductors	Ch. 7.1 – 7.2	TBA
07 Apr	Maxwell’s Laws	Ch. 7.3	TBA
14 Apr	Highlights of Electromagnetic Waves	Ch. 8.1 Ch. 9.1-9.2	TBA
21 Apr	Highlights of Electromagnetism	Skim the rest of the book.	TBA
05 May	FINAL, 2:10 – 4:50 PM	Covers Ch. 1-7, 8.1, and 9.1-9.2	none