

Tentative Schedule

4. Electrostatics

- (a) Coulomb and Gauss' Law *Dec 8, Jan 17, Jan 19*
- (b) Gauss' theorem *Jan 24*
- (c) Scalar potential *Jan 26*
- (d) Conductors *Jan 26, 31*
- (e) Capacitance *Jan 31, Feb 2*
- (f) Current, Ohm's Law and Circuits *Feb 2, 7*

5. Electrodynamics

- (a) Derivation of Maxwell's equations *Feb 7, 9*
- (b) Magnetostatics *Feb 14, 16*
- (c) Dipole expansion, Larmor precession *Feb 16*
- (d) Lorentz force *Feb 21*
- (e) Faraday's law *Feb 21, 23*
- (f) Inductance *Feb 28*
- (g) AC circuits *Mar 1, 8*

***** Midterm Exam - March 6 *****

- (h) Light waves *Mar 20, 21*

6. Quantum Mechanics

- (a) Overview *Mar 22*
- (b) Complex vector space, state vectors *Mar 27*
- (c) Probability, measurement, operators *Mar 29*
- (d) Commutation relations, spin-1/2 *Mar 29, Apr 3*
- (e) Spin-1/2 measurement, rotations and time evolution *Apr 3, 5*
- (f) Two spin-1/2 particles *Apr 10*
- (g) General angular momenta *Apr 12*
- (h) Position space *Apr 12*
- (i) 1-dim quantum mechanics *Apr 17*
- (j) Uncertainty principle *Apr 19*
- (k) Simple harmonic oscillator, field theory *Apr 24, 26*