

NASSP Honours Electrodynamics Part 1

Lecture Schedule 2014

N o.	Date	Topic	Ref.
1	24/02	Introduction, Maxwell integral eqns., electrostatics: Gauss, Poisson	ED-01, ED-02
2	25/02	Review Gauss, Poisson; polarization, bound charges, displacement D	ED-03 s9
3	26/02	D, E bdy. condns., energy; magnetostatics: currents, Biot-Savart	ED-04 s9
4	27/02	Biot-Savart apps., Ampere's law, vector potl., magnetization, H field, χ	ED-05 s7
5	28/02	Tut 1	
6	03/03	B, H bdy. condns, mag. energy, pressure; Faraday's law, V and A; Lorenz	ED-06 s6
7	04/03	Displacement current; Maxwell's eqns.; Helmholtz thm.; gauge transformations	ED-06 s17
8	05/03	Retarded potentials; Poynting vector; worked examples	ED-07 s7
9	06/03	Wave eqns. for E & B; plane EM waves in free space: transverse, reln. E & B	ED-07 s17
10	07/03	Tut 2	
11	10/03	Waves in arbitrary dirn., wave energy; worked examples; waves in lih media	ED-08 s7
12	11/03	Material interfaces: reflection & refraction; Fresnel coeffs., examples	ED-08 s19
13	12/03	EM waves in conductors; dispersion and group velocity; complex amplitude	ED-09 s5
14	13/03	Wave polarization: circular, elliptical, polarizers, plates, reflection, scattering	ED-09 s25
15	14/03	Tut 3 + worked examples	