

<u>Lecture</u>	<u>Date</u>	<u>Reading assignment given out</u>	<u>Optional reading</u>	<u>Lecture topic</u>	<u>grad</u>
1	23-Aug-06 wed	4.6 energy in EM field	HM ch1 (review) 4.1 cons chg, continuity eqn 4.2 EM induction 4.3 displ current 4.4 Max eqns 4.5 Potential fcns	course admin/logistics review of Maxwell/gaussian units some basic plasma physics	read: A6-A8 (tensors), LL sections 6, 7, 13
2	25-Aug-06 fri	4.8 Maxwell stress tensor 4.10 EM and relativity	Handout: Chen/plasma physics 4.7 ES energy and coeff of potl Griffiths 8.2.2	energy in EM field sketch of poynting theorem	
3	28-Aug-06 mon	ch5 EM waves 5.1 plane waves in dielectrics		example of poynting theorem intro to stress tensor	D and E in birefringent media index ellipsoid, phase matching read: HM 14.1-14.3
4	30-Aug-06	5.2 polarization		stress tensor examples	
5	1-Sep-06 HW1 due	online handout: Guenther/polarization 5.3 poynting vector: complex fields 5.4 photon momentum		wave eqn from Maxwell plane waves basic polarization states: linear, circ, elliptical	
6	4-Sep-06	online handout: Hecht/waveplates handout for birefringence		Jones vectors: rep of state in basis intensity and momentum calcs for waves radiation pressure (photon picture)	relativity and Lorentz transformations read: 14.4-14.5
7	6-Sep-06 Add/drop date	5.5 plane waves in conducting media		polarizers birefringence polarization control/waveplates	
8	8-Sep-06 HW2 due	5.6 skin effect		plane waves in conducting media	
9	11-Sep-06	ch6 reflection and refraction 6.1 normal incidence, dielectric		skin effect waves in plasmas	EM in relativity read: 14.6-14.8
10	13-Sep-06	6.2 fresnel eqns		boundary conditions reflection at normal incidence	
11	15-Sep-06 HW3 due	6.3 TIR 6.4 reflection from metals 6.5 refraction in conducting media		fresnel eqns applications of Fresnel	