

Spring 2026 – PHYSICS 3034 – R.Sonnenfeld

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SCHEDULE – (Rev. B– 03/23/2026)

wk	Date	Class Topic	Reading Asst.	HW Asst.
1	1/21	[1] Geometric Optics Principal Rays	Ch 2-2.6 (Pedrotti)	
	1/23/25	[2] Lensmaker Equation	Ch 2.7–2.11	
2	1/26	[3] Matrix optics	18.1–18.5 (Ped.)	
	1/28	[4] Matrix optics thick lenses	18.6–18.8	
	1/30	[5] Matrix optics		HW01
3	2/2	[6] Overview, Maxwell in Integral and Diff Form	7.3.1–7.3.3 (Griffiths)	
	2/4	[7] B-field energy, Continuity Eqn → Maxwell Disp. Current		
	2/6	[8] Energy Continuity & Poynting's Theorem	8.1.1–8.1.2	HW02
4	2/9	[9] Derive Poynting Th'm, Examples	8.2.1	
	2/11	[10] Mech Waves → Wave Eqn, k ω , Waves in 1D	9.1.1–9.1.2	
	2/13	[11] \vec{k} , Complex arithmetic for waves		HW03
5	2/16	[12] 1-D Reflection & Transmission	Ch. 9.1.3–9.1.4	
	2/18	[13] 1-D Ref.Trans., 3-D Plane Waves	9.2.1–9.2.2	
	2/20	[14] Energy and Momentum of EM Plane Waves	9.2.3	
6	2/23	[15] Poynting vector and intensity of plane waves		
	2/25	[16] Test 1	9.3.1	
	2/27	[17] EM waves boundary conditions	9.3.1	
7	3/2	[18] Reflection and Refraction	9.3.2	
	3/4	[19] Snell's Law	9.3.3.	
	3/6	[20] Polarization and Brewster's Angle		HW04
8	3/9	[21] Polarization and Brewster's Angle	9.4.3	
	3/11	[22] Slack		
	3/13	[23] Derive Wave Eqn in Conductors		
*	3/16–20	Spring Break		
10	3/23	[24] Derive Wave Eqn in Conductors		HW05
	3/25	[25] R&T in Conductors, B lags E	9.4.1,2	
	3/27	[26] Dispersion, Electons on Springs	9.4.2	Report outline
11	3/30	[27] Jellium, Cauchy Relation	9.5.1	
	4/1	[28] Slack	9.5.2	HW06
	4/3	Spring Holiday		
12	4/6	[29] In class Exam		
	4/8	[30] Retarded potentials, worked example	10.1.1, 10.1.2	HW06
	4/10	[31] Intro to Gauges	10.1.3	
13	4/13	[32] Coulomb and Lorenz Gauge	10.2.1	
	4/15	[33] Fields of a moving point charge	10.3.2	
	4/17	[34] Jefimenko Eqns	10.2.2	

wk	Date	Class Topic	Reading Asst.	HW Asst.
14	4/20	[35] Electric Dipole Radiation	11.1.1	
	4/22	[36] Electric Dipole Radiation	11.1.2	
	4/24	[37] Larmor power formula		Reports
15	4/27	[38] Presentations		
	4/29	[39] Presentations		
	5/1	[40] Presentations		HW07
16	5/4	[41] Slack		
	5/6	[42] Presentations		
	5/7	[43] Presentations		