

EEE 165 - Section 1 - Course Outline – Fall 2012

Week	DATE:	SECTIONS:	TOPICS:
1	08-28	1.1 – 1.2	Introduction: Wave Nature of Light, Refractive Index
	08-30	1.3 – 1.5	Group Velocity, E & B fields in Light, Snell's Law
2	09-04	1.6 – 1.7	Fresnel Equations, Interference
	09-06	1.8 – 1.10	Coherence, Diffraction
3	09-11	7.1	Polarization
	09-13	7.2	Birefringence
4	09-18	7.3	Birefringent Optical Devices
	09-20	7.4	Optical Activity and Circular Birefringence
5	09-25	2.1 – 2.2	Slab Waveguide, Dispersion
	09-27	2.3 – 2.5	Step Index Fiber, Numerical Aperture, Dispersion in single mode fibers
6	10-02	2.6 – 2.10	Optical Bandwidth, Graded Index Fiber, Scattering, Attenuation in Fibers
	10-04	MIDTERM 1	Chapters 1 & 7
7	10-09	3.1 – 3.2	Semiconductor concepts, Energy Bands
	10-11	3.3 - 3.4	pn Junction principles, pn Junction Band Diagram
8	10-16	3.5 – 3.9	LED's
	10-18	4.1 – 4.7	Stimulated Emission, Gas Lasers
9	10-23	4.1 – 4.7	Stimulated Emission, Gas Lasers
	10-25	4.8 – 4.10	Laser Oscillation, Laser Diode, Rate Equation
10	10-30	4.11 – 4.15	Light emitters for Optical Fiber
	11-01	5.1 – 5.5	Photodetectors, pin detector Term Paper Due
11	11-06	5.1 – 5.5	Photodetectors, pin detector
	11-08		Avalanche Photodiode
		5.6 – 5.8	Heterojunction Photodiodes, Phototransistors,
12	11-13	5.9 – 5.10	Heterojunction Photodiodes, Phototransistors, Photoconductive detectors, Noise in Photodetectors
	11-15	MIDTERM 2	Chapters 2, 3, & 4
13	11-20		Review Midterm Solar Energy Spectrum, Photovoltaic Devices
	11-22	Holiday	Thanksgiving Holiday – no class
14	11-27	6.3 – 6.4	Pn Junction I-V Characteristics, Equivalent Circuit
	11-29	6.5 – 6.6	Temperature effects, Solar Cell Materials
15	12-04	Handout	Design Considerations for a Fiber Optic System.
	12-06	Handout	Design Considerations for a Fiber Optic System.
16	12-13	Final Exam	12:45 p.m. – 2:45 p.m.