

EK307 - Fall 2009 Syllabus

Lecture No.	Topic	Chapter/Sections	Lab Experiment
1	Units, Current, Voltage, Power,	1.1; 1.2; 1.3; 1.4; 1.5; 2.1	
3-Sep	Circuit Elements: Voltage and Current Sources,		
2	Circuit Topologies: Branch, Node, Series, Parallel;	2.3; 2.3	
8-Sep	KVL/KCL Examples		
3	Series, Parallel Resistor Combinations;	2.4:[2.4.1 - 2.4.3]; 2.7:[2.7.1; 2.7.2]; 3.4	
	Voltage and Current Division		
	Linear vs. Nonlinear Circuits		
10-Sep	Superposition		
4	V-I Equation of Thevenin Circuit, Thevenin Equivalent;	3.5	LAB 1 - LEDs
15-Sep			
5	Thevenin Examples	3.5; 3.6	
17-Sep	Maximum Power Transfer Theorem		
6	Thevenin Examples/ Dependent Sources	3.5; 3.6	LAB 2 - RESISTIVE CIRCUITS
22-Sep			
7	Nonlinear Elements: Diode, BJT	3.7	
24-Sep	Definition of Signal: BJT Transistor Amplifier		
8	MOS Transistor	4.11; Notes (to be distributed) distributed)	LAB 3 LOGIC GATES
29-Sep	MOS Amplifier		
9	Digital v. Analog Systems	4.10; Notes (to be distributed)	
	Logic Gates: AND, OR, NAND, NOR		
1-Oct	MOS Logic Elements		
10	Operational Amplifier V-I Equations	4.1; 4.2; 4.3; 4.4	LAB 4 OP AMPS
6-Oct	Basic Feedback Amplifier - Non-Inverting		
11	Inverting Amplifier	4.5; 4.6; 4.7; 4.8	
8-Oct	Integrator; Ramp Generator, Summing Amplifier,		
10./15	Quizzam on Lectures 1-9		
12	Instrumentation Amplifier	4.9	LAB 4A - Analog to Digital Converter
20-Oct	Other Op-Amp Examples		
13	Signal Digitizing, Digital to Analog Conversion, A/D	4.10; Notes (to be distributed) distributed)	
22-Oct	DAC Op-Amp Example		
14	Waveforms: Step, Impulse, Delay	5.1; Notes (to be distributed) distributed)	LAB 5 ACOUSTIC HEART MONITOR
27-Oct	Exponential Function Revisited		
15	RL and RC First Order Step Responses	[Read 5.2 and 5.3 as review];	
29-Oct			
16	RLC Resonant Circuits/ Series and Parallel	6.1; 6.2; 6.3;	
3-Nov	Natural and Forced Responses		
17	RLC Examples	6.4; 6.5	LAB 6 - CAP TIMING
5-Nov			
18	Fourier Series	11.1; 11.2	LAB 7 - TRANSIENT RLC
10-Nov	Sinusoidal Steady-State, Complex Numbers		7.1; 7.2

19	Phasors and Euler's Equation	7.3; 7.4	
12-Nov	Phasor Analysis		
20	Impedance Analysis	7.5:[7.5.1]; 7.6; 7.7; 7.8; 7.9	LAB 8 - STEADY STATE RLC
17-Nov	Maximum Power Transfer Theorem Revisited	8.5	
21	Impedance Analysis		
19-Nov			
24-Nov	Quizzam #2 on Lectures 10-19		
22	Filter Circuits; LPF, HPF	9.1	LAB 9 - ACTIVE FILTERS
1-Dec	Bode Plots/ Decibel Scale	9.3	
23	Active Filters	9.6	
3-Dec			
24	Active Filters	9.6; Notes (to be distributed)	LAB 9 - ACTIVE FILTERS
8-Dec		distributed)	
25	Active Filters	9.6; Notes (to be distributed)	
10-Dec		distributed)	
19-Dec	FINAL EXAM 9:00 - 12:00		