Introduction to

Circuits and Electronics

Syllabus

Day	Topic	Reading	Problems	Lab
Monday, January 19, 2004		Week 1		
Tuesday, January 20, 2004	Project Introduction, Voltage and Current Sources, Resistors, KVL, KCL,Voltage Dividers	1.01-1.04		
Wednesday, January 21, 2004				
Thursday, January 22, 2004	Thevenin and Norton Equivalents, Small Signal Resistances	1.05-1.06		
Friday, January 23, 2004				
Saturday, January 24, 2004 Sunday, January 25, 2004		Week 2		
Monday, January 26, 2004				
Tuesday, January 27, 2004	More Nodes and Loops			
Wednesday, January 28, 2004				
Thursday, January 29, 2004	More Nodes and Loops			
Friday, January 30, 2004				
Saturday, January 31, 2004 Sunday, February 01, 2004		Week 3		
Monday, February 02, 2004				
Tuesday, February 03, 2004	Capacitors and AC Circuits	1.12-1.15		Figure out which of three leads of a potentiometer are connected to which part
Wednesday, February 04, 2004				
Thursday, February 05, 2004	Inductors, Impedance and Reactance	1.16-1.24		Make a 1 V, 50 ohm source from 5 Volt power supply - Play with PSPICE models of thevenin sources
Friday, February 06, 2004				
Saturday, February 07, 2004 Sunday, February 08, 2004		Week 4		
Monday, February 09, 2004				
Tuesday, February 10, 2004	Induction to Bode Plots	1.25		Determine Transient + SSS Response of RC circuits, including Low-Pass and High-Pass 1st order filters
Wednesday, February 11, 2004				
Thursday, February 12, 2004	Introduction to Diodes	2.01 - 2.07, 2.10 - 2.13		
Friday, February 13, 2004				

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Day	Topic	Reading	Problems	Lab
Saturday, February 14, 2004 Sunday, February 15, 2004 Monday, February 16, 2004		Week 5		
Tuesday, February 17, 2004	Introduction to Bipolar and FET Transistors	3.01 - 3.05, 3.14 - 3.15		
Wednesday, February 18, 2004				
Thursday, February 19, 2004	**Olin Monday**			
Friday, February 20, 2004				
Saturday, February 21, 2004 Sunday, February 22, 2004		Week 6		
Monday, February 23, 2004				
Tuesday, February 24, 2004	Introduction to Analog Amplifiers			Use Signal Generators & Scopes to plot out transistor characteristics + build low-power emitter follower amp, without and with feedback
Wednesday, February 25, 2004				
Thursday, February 26, 2004	Introduction to Digital Components	8.01-8.15		
Friday, February 27, 2004				
Saturday, February 28, 2004 Sunday, February 29, 2004		Week 7		
Monday, March 01, 2004				
Tuesday, March 02, 2004	Intrudction to Sychronous Finite State Machines	8.16-8.19		Build and Simulate White Noise Generator
Wednesday, March 03, 2004				
Thursday, March 04, 2004	Finish Synchronous Finite State Machines			
Friday, March 05, 2004				
Saturday, March 06, 2004 Sunday, March 07, 2004		Week 8		
Monday, March 08, 2004				
Tuesday, March 09, 2004	Introduction to Class D (PWM) amplifiers			
Wednesday, March 10, 2004				
Thursday, March 11, 2004	Design of High Power PWM Amp			
Friday, March 12, 2004				
Saturday, March 13, 2004 - Friday, March 19, 2004		SPRING BREAK		

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Day	Topic	Reading	Problems	Lab
Saturday, March 20, 2004 Sunday, March 21, 2004		Week 9		
Monday, March 22, 2004				
Tuesday, March 23, 2004	Design of L-C Filter			Build a simple low power PWM amplifier, Simulation of High Power Amp
Wednesday, March 24, 2004				
Thursday, March 25, 2004	Schematic Entry of Final System			Schematic Entry of Final System
Friday, March 26, 2004				
Saturday, March 27, 2004 Sunday, March 28, 2004		Week 10		
Monday, March 29, 2004				
Tuesday, March 30, 2004	Introduction to Circuit Boards and Manufacturing Processes			
Wednesday, March 31, 2004	**BIG CONVERSATIONS**			
Thursday, April 01, 2004	Component Placement and Pads			
Friday, April 02, 2004				
Saturday, April 03, 2004 Sunday, April 04, 2004		Week 11		
Monday, April 05, 2004				
Tuesday, April 06, 2004	Ground and EMI			Layout of Canned Schematic
Wednesday, April 07, 2004				
Thursday, April 08, 2004	Using Automatic and Maual Layout			Route Board of Entire System
Friday, April 09, 2004				
Saturday, April 10, 2004 Sunday, April 11, 2004		Week 12		
Monday, April 12, 2004				
Tuesday, April 13, 2004	Design Review and Board Send-Off			Design Review and Board Send-Off
Wednesday, April 14, 2004				
Thursday, April 15, 2004	Box Design			Box Design & Prototyping
Friday, April 16, 2004				

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Day	Topic	Reading	Problems	Lab
Saturday, April 17, 2004 Sunday, April 18, 2004 Monday, April 19, 2004		Week 13		
Tuesday, April 20, 2004		**Olin Monday**		
Wednesday, April 21, 2004				
Thursday, April 22, 2004	Boards Returned for Population - Boards Populated			Populate Boards
Friday, April 23, 2004				
Saturday, April 24, 2004 Sunday, April 25, 2004		Week 14		
Monday, April 26, 2004				
Tuesday, April 27, 2004	Debug			Debug
Wednesday, April 28, 2004				
Thursday, April 29, 2004	Debug			Further Debugging
Friday, April 30, 2004				Expo Prep
Saturday, May 01, 2004 Sunday, May 02, 2004		Week 15		
Monday, May 03, 2004				Expo Prep
Tuesday, May 04, 2004				Expo
Wednesday, May 05, 2004				Expo
Thursday, May 06, 2004				Expo
Friday, May 07, 2004				Study Period
Saturday, May 08, 2004 Sunday, May 09, 2004		Week 16		
Monday, May 10, 2004				Study Period
Tuesday, May 11, 2004				Exams
Wednesday, May 12, 2004				Exams
Thursday, May 13, 2004				Exams
Friday, May 14, 2004				Exams