

# ECSE 2210 MICROELECTRONICS TECHNOLOGY

## Class Schedule: Spring 2006

Dates	Chapter #	page #s	Activities/Homework	Topics/Comments
17-Jan	Chapter 1	p3 - 22	activity 1	General Introduction. Ignore section 1.2.4
18-Jan	Chapter 2	23 - 32	activity 2	Semiconductor models
20-Jan		32-40	activity 3	Carrier properties
24-Jan		40-49	activity 4, <b>HW#1 due</b>	Carrier distributions
25-Jan		49-57	activity 5	Carrier concentrations
27-Jan		57-74	activity 6	charge neutrality
31-Jan	Chapter 3	75-89, 94-99	activity 7, <b>HW#2 due</b>	Carrier Drift, Diffusion
1-Feb		89-104	activity 8	Band bending, Einstein relationship
3-Feb		105-120	activity 9	Recombination/Generation
7-Feb		121-148	activity 10, <b>HW#3 due</b>	Equations of state. Ignore section 3.5.2
<b>8-Feb</b>	Review for Quiz I			Review of pgs. 3 - 148
<b>10-Feb</b>	<b>In Class Quiz I</b>			<b>Semiconductor fundamentals.</b>
14-Feb	Chapter 5	195-209	activity 11, <b>No HW</b>	PN junction, qualitative
15-Feb		210-234	activity 12	PN junction electrostatics. Ignore section 5.2.5.
17-Feb	Chapter 6	235-246	activity 13	I-V characteristics
21-Feb	no class			
22-Feb		246-259	activity 14, <b>HW#4 due</b>	I-V characteristics
24-Feb		260-300	activity 15	Deviations from ideal diode. Ignore section 6.3
28-Feb	Chapter 7		activity 16, <b>HW#5 due</b>	Small signal diode models. Ignore section 7.3.2
1-Mar	Chapter 8	327-346	activity 17	Diode transients. Ignore section 8.2
3-Mar	Chapter 9	347 - 368	activity 18	Diode applications
7-Mar	Chapter 10	371-382	activity 19, <b>HW#6 due</b>	BJT Fundamentals
8-Mar	Chapter 11	389-407	activity 20	Transistor Analysis
10-Mar		407-418	activity 21	Non-ideal BJT
14-Mar	no class		Spring break	
15-Mar	no class		Spring break	
17-Mar	no class		Spring break	
21-Mar	Chapter 12	449-459	activity 22, <b>HW#7 due</b>	BJT Transient Response
<b>22-Mar</b>	Review for Quiz II			Review of diodes and BJTs
<b>24-Mar</b>	<b>In Class Quiz II</b>			<b>Diodes and BJTs</b>
28-Mar	Chapter 14	477-487	activity 23, <b>No HW</b>	Schottky Electrostatics
29-Mar		487 - 500	activity 24	Schottky/pn diodes
31-Mar	Chapter 16	563-571	activity 25	MOS Electrostatics

4-Apr		571-584	activity 26, <b>HW#8 due</b>	Gate Voltage Relationships
5-Apr	no class			
7-Apr		584-610	activity 27	C-V Characteristics
11-Apr	Chapter 17	611-623	activity 28	MOSFET I-V Characteristics
12-Apr	Chapter 17	630-644	activity 29, <b>HW#9 due</b>	MOSFET small signal models
14-Apr	Chapter 18	645-650	activity 30	Non ideal MOSFET
18-Apr	Handout		activity 31	Notes on CCD and DRAM
19-Apr	Handout		activity 32, <b>HW #10 due</b>	IC Fabrication Technology
21-Apr	Handout		activity 33	IC Layout
25-Apr	Handout		activity 34	IC Layout
26-Apr	<b>Review for Quiz III</b>		activity 33	Review on Schottky and MOSFET
28-Apr	<b>In Class Quiz III</b>		activity 34	<b>Schottky, MOSFET and IC Fabrication</b>
2-May	Clean Room Tour			Optional
3-May	Review for final exam			return Quiz III
5-May	no class			
8-May	week of			
13-May	final exams			

**Text Book: "Semiconductor Device Fundamentals" by Robert Pierret.**