

# ECSE 2210 MICROELECTRONICS TECHNOLOGY

## Class Schedule: Fall 2005

<u>Dates</u>	<u>Chapter #</u>	<u>page #s</u>	<u>Activities/Homework</u>	<u>Topics/Comments</u>
30-Aug	Chapter 1	p3 - 22	activity 1	General Introduction. Ignore section 1.2.4
31-Aug	Chapter 2	23 - 32	activity 2	Semiconductor models
2-Sep		32-40	activity 3	Carrier properties
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6-Sep		40-49	activity 4, <b>HW#1 due</b>	Carrier distributions
7-Sep		49-57	activity 5	Carrier concentrations
9-Sep		57-74	activity 6	charge neutrality
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13-Sep	Chapter 3	75-89, 94-99	activity 7, <b>HW#2 due</b>	Carrier Drift, Diffusion
14-Sep		89-104	activity 8	Band bending, Einstein relationship
16-Sep		105-120	activity 9	Recombination/Generation
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20-Sep		121-148	activity 10, <b>HW#3 due</b>	Equations of state. Ignore section 3.5.2
21-Sep		3 - 148	Review	Review
23-Sep		<b>Quiz I</b>	<b>In-Class Quiz</b>	<b>Semiconductor fundamentals.</b>
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27-Sep	Chapter 5	195-209	activity 11, <b>No HW</b>	PN junction, qualitative
28-Sep		210-234	activity 12	PN junction electrostatics. Ignore section 5.2.5.
30-Sep	Chapter 6	235-246	activity 13	I-V characteristics
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4-Oct		246-259	activity 14, <b>HW#4 due</b>	I-V characteristics
5-Oct		260-300	activity 15	Deviations from ideal diode. Ignore section 6.3
7-Oct	Chapter 7		activity 16, <b>HW#5 due</b>	Small signal diode models. Ignore section 7.3.2
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11-Oct	no class- Monday Schedule			
12-Oct	Chapter 8	327-346	activity 17	Diode transients. Ignore section 8.2
14-Oct	Chapter 9	347 - 368	activity 18	Diode applications
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18-Oct	Chapter 10	371-382	activity 19, <b>HW#6 due</b>	BJT Fundamentals
19-Oct	Chapter 11	389-407	activity 20	Transistor Analysis
21-Oct		407-418	activity 21	Non-ideal BJT
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<b>25-Oct</b>	Chapter 12	449-459	activity 22, <b>HW#7 due</b>	BJT Transient Response
<b>26-Oct</b>			Review for Quiz II	Review of diodes and BJTs
<b>28-Oct</b>		<b>Quiz II</b>	<b>In Class Quiz</b>	<b>Diodes and BJTs</b>

## Microelectronics Technology

### Class Schedule: Fall 2005 (continued)

1-Nov	Chapter 14	477-487	activity 23, <b>No HW</b>	Schottky Electrostatics
2-Nov		487 - 500	activity 24	Schottky/pn diodes
4-Nov	Chapter 16	563-571	activity 25	MOS Electrostatics
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8-Nov		571-584	activity 26, <b>HW#8 due</b>	Gate Voltage Relationships
9-Nov		584-610	activity 27	C-V Characteristics
11-Nov	Chapter 17	611-623	activity 28	MOSFET I-V Characteristics
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15-Nov	Chapter 17	630-644	activity 29, <b>HW#9 due</b>	MOSFET small signal models
16-Nov	Chapter 18	645-650	activity 30	Non ideal MOSFET
18-Nov	Class	Handout	activity 31, <b>HW#10 due</b>	Notes on CCD and DRAM
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22-Nov	Class	Handout	activity 32, <b>No HW</b>	IC Fabrication Technology
23-Nov			<b>Thanksgiving</b>	
25-Nov			<b>Thanksgiving</b>	
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29-Nov	Class	Handout	activity 33	IC Layout
30-Nov			Review for Quiz III	Review on Schottky and MOSFET
2-Dec	<b>Quiz III</b>	<b>In Class Quiz</b>	<b>Schottky and MOSFET</b>	
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6-Dec	Class	Handout	activity 34	IC Layout
7-Dec			Clean Room Tour	Optional
9-Dec			Review for finals	
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