EE 130 /EE 230A COURSE SYLLABUS AND SCHEDULE

Week	Lecture Dates	Topics	Book Chapters
1	8/29, 9/3	**Semiconductor Fundamentals:** introduction, semiconductors	Pierret: 1; Hu: 1
2	9/5, 9/10	… carrier distributions and concentrations, carrier drift	Pierret: 2-3; Hu: 1
3	9/12, 9/17	... carrier diffusion	Pierret: 3; Hu: 2
4	9/19, 9/24^	**Metal-Semiconductor Contacts**	Pierret: 14; Hu: 4
5	9/26, 10/1	**pn Junction Diode:** electrostatics	Pierret: 5; Hu: 4
6	10/3, 10/8^	... *I-V* characteristics	Pierret: 6; Hu: 4
7	10/10, 10/15	... junction capacitance, transient response, applications	Pierret: 7-9; Hu: 4
8	10/17, 10/22^	**Metal-Oxide-Semiconductor Capacitor:** introduction	Pierret:16; Hu:5
9	10/24, 10/29	... capacitance, non-idealities, threshold voltage adjustment	Pierret:18; Hu:5
10	10/31, 11/5^	**MOS Field-Effect Transistor:** structure and operation	Pierret: 17; Hu: 6
11	11/7, 11/12	… short-channel effects	Pierret: 19; Hu: 7
12	11/14, 11/19^	… modern CMOS Technology	Pierret: 10; Hu: 8
13	11/21#, 11/26	**Bipolar Junction Transistor:** structure and operation	Pierret:11-12; Hu:8
14	12/3, 12/5^	... BJT static and dynamic characteristics	Pierret:4,13; Hu: 7
15	12/10, 12/12*	Project presentations	

FINAL EXAM: Tuesday 12/17, 8:00AM-11:00AM

^Quiz date

Quiz 1 topics: Semiconductor fundamentals

Quiz 2 topics: Carrier action, metal-semiconductor contacts

Quiz 3 topics: pn junction diode electrostatics, *I-V* characteristics

Quiz 4 topics: pn junction capacitance & transient response; MOS capacitor

Quiz 5 topic: MOSFET basics

Quiz 6 topic: Short-channel MOSFETs

*Design project due

HKN course evaluation