

King Fahd University of Petroleum & Minerals
Electrical Engineering Department
EE203: Electronics I (071)

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Course Information	Text Microelectronic Circuits 5 th ed Sedra & Smith	Grading					Attendance	
		HW 5%	Quizzes 10%	Project 5%	Two Exams 30%	Lab 20%	Final Exam 30%	6 unexcused absences → Warning 9 unexcused absences → DN

Week	Topics to cover	Ch	Sec	Lab Activity
1	Sep 8–12 Diodes: Introduction, Ideal diode, PN junction, Terminal characteristics of the diode, Physical operation of the diode.	3	3.1, 3.2, 3.7	No Lab
2	Sep 15-19 Graphical and analytical diode circuits analysis, Diode Models, the Zener diode.	3	3.3.1-3.3.3,3.3.5, 3.3.6, 3.4.1.3. 4.2	Exp 1: Lab Equipment
3	Sep 22-26 Diode applications: half and Full-wave rectifiers, Limiting and Clamping circuits and voltage doublers. Field-Effect Transistors (FETs): Device structure and operation.	3	3.5.1-3.5.4, 3.6	Exp 2: PSPICE
		4	4.1.1-4.1.5	
4	Sep 29-Oct3 PMOS structure and operation, CMOS structure, Current –Voltage Characteristic, Role of substrate, MOSFET Circuits at DC.	4	4.1.6-4.1.8,4. 2.1-4.2.5, 4. 3	Exp 3: Diode Applications
5	Oct 20-24 The MOSFET as amplifier, Biasing, small signal operation and models, Single stage amplifier (CS, CG and CD).	4	4.4-4.7	Exp 4: DC Power Supply

Exam 1 Wed Oct 31 (6:30pm)

6	Oct 27-31 Single stage amplifier (Continued) (CS, CG & CD).	4	47	No Lab
7	Nov 3-7 Bipolar Junction Transistors (BJTs): structure and operation, types, symbols and conventions, transistors current-voltage characteristics.	5	5.1.1-5.1.3, 5.1.5, 5.1.6, 5.2, 5.3	Exp 5: MOSFET Amplifiers
8	Nov 9-14 BJT circuits at DC, Biasing, Small signal models and analysis.	5	5.4-5.6	Exp 6: BJT Characteristics
9	Nov 17-21 Single stage amplifier (CE, and CB).	5	5.7.1-5.7.5	No Lab
10	Nov 24-28 Single stage amplifier (CC). Differential Amplifiers: MOS.	5	5.7.6,5.7.7	Exp 7: BJT CE Amplifiers
		7	7.1,7.2	

Exam 2 Tue Dec 4 2007 (6:30Pm)

11	Dec 1-5 BJT Differential amplifiers. Digital Circuit design overview, the CMOS inverter.	7	7.3	No Lab
		10	10.1.1, 10.1.2,10. 2.1, 10.2.2	
12	Dec 8-12 CMOS Logic circuits, CMOS transistor sizing.	10	10.3.1-10.3.8	Exp 8: Differential Amp.
13	Dec 29-Jan 2 Pass transistor logic circuits (PTL), Basic concept of dynamic logic circuits. BJT as a switch, The basic BJT inverter.	10	10.4.1, 10.4.2,10. 5,10.6.1	Exp 9: CMOS Inverter
		5	5.3.4,5.10	
14	Jan 5- 9 RTL circuits, maximum fan-out calculation, ECL logic circuits.	11	11.7.1,11.7.3, 11.7.4, 11.7.7	Exp 10: ECL Logic Gates
15	Jan 12-16 TTL Basic Inverters and NAND gate, BJT vs. MOS Logic: advantage/disadvantages.	11	Handout	Lab Final
16	Jan 19-23 Review			

Suggested problems [3] 3, 10, 11, 26, 40,68,72,95,104 [4] 38,42,46,52,74,75,81,82,85,87 [5] 7,21,24,39,57,58,66,72,74,80,84b,89,112,116,124,130,136,141,143,144 [7]1,2,14,15,40 [10]25,26,32,34,50