

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS

Electrical Engineering Department

EE-203 Electronics I: 2005-2006 (051)

Instructor	Location 14-272	Phone: 1434	E-mail: alzaherh@kfupm.edu.sa
Dr. Hussain Alzaher	Office Hours: S, M, W		

Text: Microelectronic Circuits, 5th Ed. 1998, by Sedra and Smith, Oxford University Press, Inc.

W	Date	Sections	Topics	Lab./
1	Sep 10 – 14	3.1, 3.7, 3.2 3.3.1,3.3.2,3.3.5,3.3.6,	Diodes: Introduction, PN junction, physical operation of diode, Terminal characteristics of the diode Modeling the diode (the exponential model, piecewise linear model, Constant voltage drop model)	No Lab.
2	Sep 17 – 21	3.5.1,3.5.2,3.5.3,3.5.4, 3.6.1,,3.4.1,3.4.2	diode applications: rectifier half wave and Full-wave rectifiers, Limiting circuits , Operation in the reverse Breakdown region, the Zener diode	Exp. # 1 Intro. to Lab. Equipment
Sat, Sept 24 - National Day				
3	Sep 26 – 28	5.1,5.2,5.3	Bipolar Junction Transistors (BJTs) : Device structure and physical operation, types, symbols and conventions, transistors current-voltage characteristics,	No Lab.
4	Oct 1-5	5.4,5.5	BJT circuits at DC, Biasing in BJT amplifier	Exp. # 2 Introduction to PSPICE
5	Oct 8-12	5.6, 5.7	Small signal models and analysis , single stage amplifier CE	Exp. # 3 Diode Applications
6	Oct 15-19	5.7	Single stage amplifier (Continue) , CB& CC Introduction to JFET	Exp. # 4 DC Power Supply
Sat, Oct 22, Exam I (Tentative class time)				
Tue, Oct 25, Last Day for dropping courses with grade 'W'				
7	Oct 22-26	4.1.1,4.1.2,4.1.3,4.1.4 4.1.5,4.1.6	Field-Effect Transistors (FETs): Chap. 4 Device structure and Physical operation of MOSFET,	Exp # 5 BJT Characteristics
Sat, Oct 29 - Wed Nov 9 (Ramadan Vacation)				
8	Nov 12- Nov 16	4.2.,4.2.1,4.2.3,4.2.4 4.2.5, 4.3	Current –Voltage Characteristic, Role of substrate MOSFET Circuits at DC	No Lab.
9	Nov 19- 23	4.3, 4.4, 4.5, 4.6	The MOSFET as amplifier, Biasing in MOS amplifier, small signal operation and models	Exp. #6 BJT CE Amplifier
Wed, Nov 30, Last Day for withdrawal from all courses with grade 'W'				
10	Nov 26- Nov 30	4.7 7.3	Single stage amplifier (CS, CB & CD), Differential Amplifiers: Chap. 7	No Lab.
11	Dec 3- 7	7.3 7.1	BJT Differential amplifier, MOS Differential amplifier	Exp. # 7 MOSFET Amplifiers
12	Dec 10- 14	5.3.4., 5.10, Hand out	BJT as a switch, The basic BJT digital inverter, TTL circuits	Exp.#8 Differential amplifier
13	Dec 17- 21	Hand out 10.1.1,10.1.2, 10.2.1,10.2.2	ECL logic circuits Digital Circuit design overview CMOS inverter	Exp#9 TTL Logic Gates
Wed, Dec 21, Exam II				
14	Dec 24- 28	10.3.1-10.3.9	CMOS Logic circuits	Exp. # 10 CMOS Inverter
15	Dec 31 - Jan 4	10.5.1,10.5.2,10.5.3, 10.5.4	Transistor sizing, pass transistor logic circuits, BJT vs. MOS Logic: advantage/disadvantages BiCMOS logic circuits	Lab Final
Sat, Jan 7 – Wed, Jan 18 (Id al-Adha Vacation)				
16	Jan 21		Review	

Grading: HW 5%, Quizzes 10%, Participation 5%, Project 5%, 2-Major Exams 25%, Final 30 %, Lab. 20%.

Absence: University Rule: 6 unexcused absences → Warning; **9** unexcused absences → DN

