

King Fahd University of Petroleum & Minerals
Electrical Engineering Department
EE203: Electronics I (091)

Instructor Information	Dr. Badr M. Abdullah	Office 59-0054	Phone 7785	Email: drbadr@kfupm.edu.sa	Office Hours Saturdays & Wednesdays 1:30-3:00 pm
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Course Information	Text Microelectronic Circuits 5 th ed Sedra & Smith	Grading					Attendance	
	HW+Quizzes 15%	Project 5%	Two Exams 30%	Lab 20%	Final Exam 30%	6 unexcused absences → Warning	10 unexcused absences → DN	

Week	Topics to cover	Ch	Sec	Lab Activity
1 Oct 3 – 7	Diodes: Introduction, Ideal diode, PN junction, Terminal characteristics of the diode, Physical operation of the diode.	3	1, 2, 7	No Lab
2 Oct 10 – 14	Graphical and analytical diode circuits analysis, Diode Models, the Zener diode.	3	3,4	Exp 1: Lab Equipment
3 Oct 17 – 21	Diode applications: half and Full-wave rectifiers, Limiting and Clamping circuits and voltage doublers. Field-Effect Transistors (FETs): Device structure and operation.	3	5.1-5.4, 6	Exp 2: Pspice Introduction
		4	1.1-1.5	
4 Oct 24 – 28	NMOS/PMOS structure and operation, CMOS structure, Current-Voltage Characteristics, MOSFET Circuits at DC.	4	1.6,1.8,2.1-2.4,3,11	Exp 3: Diode Applications
5 Oct 31 – Nov 4	The MOSFET as amplifier, Biasing, small signal operation and models, Single stage amplifier (CS, CG and CD).	4	4-7	Exp 4: DC Power Supply
Major Exam I – Nov 7 7:00 – 09:00 PM				
6 Nov 7 – 11*	Single stage amplifier (Continued) (CS, CG & CD).	4	7	No Lab
7 Nov 14 – 18	Bipolar Junction Transistors (BJTs): structure and operation, types, symbols and conventions, transistors current-voltage characteristics.	5	1.1-1.3, 1.5, 1.6, 2, 3	Exp 5: MOSFET Amplifiers
Eid Al-Adha Vacation - 19 Nov – 4 Dec				
8 Dec 5 - 9	BJT circuits at DC, Biasing, Small signal models and analysis.	5	4,6	Exp 6: BJT Characteristics
9 Dec 12 - 16	Single stage amplifier (CE, CB and CC).	5	7	No Lab
Major Exam II – Dec 15 7:30 – 09:00 PM				
10 Dec 19-23*	Differential Amplifiers: MOS and BJT Differential amplifiers.	7	1-3	Exp 7: BJT CE Amplifiers
11 Dec 26 - 30	Digital Circuit design overview, the CMOS inverter	10	1.1, 1.2, 2.1, 2.2	No Lab
12 Jan 2 - 6	CMOS Logic circuits, CMOS transistor sizing.	10	3.1-3.8	Exp 8: Differential Amp.
13 Jan 9 - 13	Pass transistor logic circuits (PTL), Basic concept of dynamic logic circuits. BJT as a switch, The basic BJT inverter.	10	4.1, 4.2, 5,6.1	Exp 9: CMOS Inverter
		5	3.4, 10	
14 Jan 16 - 20	RTL circuits, maximum fan-out calculation, ECL logic circuits.	11	7.1, 7.3 Handout	Exp 10: ECL Logic Gates
15 Jan 23 - 27	TTL Basic Inverters and NAND gate, BJT vs. MOS Logic: advantages/disadvantages.	11	7.4, 7.7 Handout	Lab Final

- 11 Novmber is last day for dropping course(s) with “W”.
- 23 December is last day for withdrawal from all courses with grade of “W”