

**King Fahd University of Petroleum & Minerals**  
**Electrical Engineering Department**  
**EE203: Electronics I (061)**

Instructor Information	<b>Dr Sheikh Sharif Iqbal</b>	Office: 14-225	Tel: 2818	Email: <b>Sheikhsi@kfupm.edu.sa</b>	Office Hours: SMW → 9:05 to 9:45 AM UT → 11:05 to 11:00 AM or by appointments
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Course Information	Text	Grading					Attendance
	Microelectronic Circuits 5 <sup>th</sup> ed Sedra & Smith	HW+Quizzes 15%	Project 5%	Two Exams 30%	Lab 20%	Final Exam 30%	6 unexcused absences → Warning 9 unexcused absences → DN

Week	Events	Topics to cover	Ch	Sections	Lab Activity	Exercises
Week 1 <b>Sept 9-14</b>	Normal Saturday Classes On Sept 14	Diodes: Introduction, Ideal diode, PN junction, Terminal characteristics of the diode, Physical operation of the diode.	3	1, 2, 7	No Lab	(3) 3, 10, 11, 26
Week 2 <b>Sept 16-20</b>	Last day to drop without W Sept 19	Graphical and analytical diode circuits analysis, Diode Models, the Zener diode.	3	3.1-3.3, 3.5, 3.6, 4.1, 4.2	Exp 1: Lab Equipment	40, 68, 72, 95, 104
Week 3 <b>Sept 24-27</b>	National Holiday Sept 23	Diode applications: half and Full-wave rectifiers, Limiting and Clamping circuits and voltage doublers. Field-Effect Transistors (FETs): Device structure and operation.	3 4	5.1-5.4, 6 1.1-1.5	Exp 2: Pspice Introduction	---
Week 4 <b>Sept 30-Oct 4</b>	---	PMOS structure and operation, CMOS structure, Current –Voltage Characteristic, Role of substrate, MOSFET Circuits at DC.	4	1.6-1.8, 2.1-2.5, 3	Exp 3: Diode Applications	(4) 38, 42, 46
Week 5 <b>Oct 7-11</b>	---	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	52,74, 75, 81

**Ramadan Vacation Oct 14-Oct 28**

Week 6 <b>Oct 28-Nov 1</b>	Midterm reports to Registrar Oct 31	Single stage amplifier (Continued) (CS, CG & CD).	4	7	No Lab	82, 85,87
Week 7 <b>Nov 4-8</b>	Exam 1 Sat Nov 4 5:30-7:30 pm	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	(5) 7, 21, 24, 39, 57, 58, 66
Week 8 <b>Nov 11-15</b>	---	BJT circuits at DC, Biasing, Small signal models and analysis.	5	4-6	No Lab	72, 74, 80, 84 (b), 89, 112, 116
Week 9 <b>Nov 18-22</b>	---	Single stage amplifier (CE, CB, and CC).	5	7	Exp 6: BJT Characteristics	124, 130, 136, 141, 143, 144
Week 10 <b>Nov 25-29</b>	Last day to drop all courses Nov 29	Differential Amplifiers: MOS and BJT Differential amplifiers.	7	1-3	Exp 7: BJT CE Amplifiers	(7) 1, 2, 14, 15, 40
Week 11 <b>Dec 2-6</b>	Early registration for 062 starts Dec 2	Digital Circuit design overview, the CMOS inverter.	10	1.1, 1.2, 2.1, 2.2	No Lab	---
Week 12 <b>Dec 9-13</b>	---	CMOS Logic circuits, CMOS transistor sizing.	10	3.1-3.8	Exp 8: Differential Amp.	(10) 25, 26, 32, 34, 50
Week 13 <b>Dec 16-20</b>	Exam 2 Wed Dec20 5:30-7:30 pm	Pass transistor logic circuits (PTL), Basic concept of dynamic logic circuits. BJT as a switch, The basic BJT inverter.	10 5	4.1, 4.2, 5.6.1 3.4, 10	Exp 9: CMOS Inverter	---

**Eid Al-Adha Vacation Dec 23-Jan 3**

<b>14</b> <b>Jan 6-10</b>	Last day for WP /WF drop Jan 10	RTL circuits, maximum fan-out calculation, TTL Basic Inverters and NAND gate, ECL logic circuits.	11	7.1, 7.3 Handout	Exp 10: ECL Logic Gates	(11) 40
<b>15</b> <b>Jan 13-17</b>	Last day of classes Jan 17	ECL logic circuits (cont.), BJT vs. MOS Logic: advantage/disadvantages.	11	7.4, 7.7 Handout	Lab Final	---

