

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS

Electrical Engineering Department

EE303: Electronics II (TERM 081)

INSTRUCTOR	OFFICE	PHONE	OFFICE HOURS	E-MAIL
Dr. Alaa El-Din Hussein	59-0058	4868	Sat, Mon & We (11-12)	husseina@kfupm.edu.sa

Text Book : Microelectronic Circuits (5th edition) by Sedra and Smith.

W	Date	Topics	Text	Lab./PSpice
1	Oct 11- 15	Frequency response of amplifiers: Introduction, s-Domain Analysis: Poles, Zeros, Transfer function, Bode plot.	1.6, Appendix E	NO LAB
2	Oct 18-22	Frequency Response of MOSFET amplifier: Internal capacitances, High frequency model The three frequency bands, CS amplifier	4.8 4.9	Tutorial 1: Circuit Analysis using Spice
3	Oct 25-29	Frequency Response of BJT amplifier: Internal capacitances, CE amplifier. Frequency Response of other amplifiers: CB, CG and Cascode amplifiers, Emitter follower	5.8, 5.9 (Notes)	NO LAB
4	Nov 1-5	Source follower, CC-CE Cascade Amplifier, Differential Amplifier.	(Notes)	Tutorial 2: Transistor Modelling using Spice
5	Nov 8-12	Review of Ideal Operation Amplifiers: Inverting Amplifiers, Integrators, Differentiators, Summer, Non-inverting Configurations, and Difference Amplifier.	2.1-2.4	Expt 1: Gain-Freq. Characteristics of Single Transistor Amplifiers
***** Major I, Sat 6:30-8:00 pm , Nov 15, 2008 *****				
6	Nov 15-19	Practical CMOS and BJT op-amp DC and ac analysis, Comparison, non-ideality	7.7	NO LAB
7	Nov 22-26	Effect of nonideality on circuit performances: Open-loop Gain & bandwidth Slew Rate, Offset Voltage, Input Bias Current	2.5-2.8	Expt 2: Gain-Freq. Charac. of Multistage Trans. Amp.
8	Nov 29-Dec 2	Filters: Filter Transmission, Types, Transfer function, 1 st Order and 2 nd order filter function	12.1-12.2 12.4	Expt 3: Linear Application of operational Amplifier
*****Id al-Adha Vacation*****				
9	Dec 14-17	Biquadratic active filters: Single-amplifier filters, Inductor replacement Two-Integrator-loop	12.8 12.6 12.7	Expt 4: Determination of Operational Amplifier Characteristics
10	Dec 20-24	Negative Feedback: Priorities, Topologies, Study of Series-Shunt feedback Amplifier	8.1, 8.2, 8.3, 8.4	Expt 5: Active Filters
11	Dec 27-31	Study of Series-Series, Shunt-Shunt, and Shunt-Series amplifiers	8.5, 8.6,	Expt 6: Feedback and Nonlinear Distortion
***** Major II, Sun 8-10 pm , Jan, 4 2008 *****				
12	Jan 3-7	Analysis and Design of amplifiers using feedback theory: Additional Examples	(Notes)	No Lab
13	Jan 10-14	Sinusoidal Oscillators: Loop gain, Stability Problem, Basic principles Op.amp-RC oscillators (Wien-Bridge, Phase shift, Quadrature)	8.7-8.8, 13.1 13.2	Expt 7: Feedback Amplifiers
14	Jan 17-21	LC & Crystal Oscillators. Bistable Multivibrators	13.3, 13.4	Expt 8: Sinusoidal Oscillators
15	Jan 24-28	Astable Multivibrator Project work and Review	13.5	<u>Lab Final</u>

Note: Thursday, 18 Dec is normal is a normal Wednesday class

Grade Distribution:

2 Major Exams (Major 1 + Major 2)	30%
Quizzes + Participation + Homeworks	10% + 2% + 3%
Project	5%
Laboratory	20%
Final Exam	30%

Suggested homework problems

HW1: 1.77, E.1, E.10, 4.77, **HW2:** 4.100, 4.101, 4.103, **HW4:** 2.22, 2.60, 2.67, 2.84, 2.94, **HW5:** 2.100, 2.114, 2.121, **HW6:** 12.19, 12.36, 12.40, 12.50, 12.59