KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS

Electrical Engineering Department

EE303: Electronics II **(TERM 061)**

INSTRUCTOR	OFFICE	PHONE	OFFICE HOURS	E-MAIL
Dr. Hussain Alzaher	14-272	1434	12:00-1:00 (SMW)	alzaherh@kfupm.edu.sa

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

W	Date	Topics	Text	Lab./PSpice
1	Sept. 9-14	**Frequency resposne of amplifiers:** Introduction, s-Domain Analysis: Poles, Zeros, Transfer function, Bode plot.	1.6, Appendix E	**NO LAB**
2	Sept. 16-20	**Frequency Response of MOSFET amplifier:** Internal capacatances, High frequncy model The three frequency bands, CS amplifier	4.8 4.9	**Tutorial 1**: Circuit Analysis using Spice
3	Sept. 24-27	**Frequency Response of BJT amplifier:** Internal capacatances, CE amplifier. **Frequency Response of other amplifers:** CB, CG and Cascode amplifiers, Emitter follower	5.8, 5.9 (Notes)	**NO LAB**
4	Sept. 30-Oct.4	Source follower, CC-CE Cascade Amplifier, Differential Amplifier.	(Notes)	**Tutorial 2**: Transistor Modelling using Spice
5	Oct. 7-11	**Review of Ideal Operaion 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
EID ALFITR Break				
	Major I , Tuesday 6:15-7:45 pm , October 31 2006			
6	Oct. 28-Nov. 1	**Practical CMOS and BJT op-amp** DC and ac analysis, Comparsion, non-idelaity	7.7	**Expt 2**: Gain-Freq. Chrac. of Multistage Trans. Amp.
7	Nov. 4-8	**Effect of nonideality on circuit performances:** Open-loop Gain & bandwidth Slew Rate, Offset Voltage, Input Bias Current	2.5-2.8	**NO LAB**
8	Nov. 11-15	**Filters:** Fiter Transmission, Types, Transfer function, 1st Order and 2nd order filter function	12.1-12.2 12.4	**NO LAB**
9	Nov. 18-22	**Biquadratic active filters:** Single-amplifier filters, Inductor replacement Two-Integrator-loop	12.8 12.6 12.7	**Expt 3**: Linear Application of operational Amplifier
10	Nov. 25-29	**Negative Feedback:** Propoorities, Topologies, Study of Series-Shunt feedback Amplifier	8.1, 8.2, 8.3, 8.4	**Expt 4:** Determination of Operational Amplifier Characteristics
11	Dec. 2-6	Study of Series-Series, Shunt-Shunt, and Shunt-Series amplifiers	8.5, 8.6,	**Expt 5**: Active Filters
12	Dec. 6-13	Analysis and Design of amplifiers using feedback thory: Additional Examples	(Notes)	**Expt 6**:Feedback and Nonlinear Distortion
MajorII, Saturday 6:30-8:00 pm , 16 December 2005				
13	Dec. 16-20	**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
EID ALADHA Break				
14	Jan. 6-10	LC & Crystal Oscilators. **Bistable Multivibrators**	13.3, 13.4	**Expt 8**: Sinusoidal Oscillators
15	Jan. 13-17	**Astable Multivibrator** Project work and Review	13.5	**Lab Final**

* Saturday, 23 September 2005 (National Holiday).

Grade Distribution:

2 Major Exams (Major 1 + Major 2)	30%
Quizzes and Attendance + Home works	10% + 5%
Design Problem	5%
Laboratory	20%
Final Exam	30%