KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS

Electrical Engineering Department

EE303: Electronics II

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

W	Date	Topics	Text	Lab./PSpice
1	Oct. 3 – 7	**Frequency resposne of amplifiers:** Introduction, frequncy responses of amplifiers, single-time constant circuits,s-domian analysis, Poles, Zeros, Bode plots, Low frequency response of CS amplifier.	1.6, Appendix D Appendix E	**NO LAB**
2	Oct. 10 - 14	Low frequency response of CE amplifier. **High frequency response of amplifiers:** Internal capacatances BJT and MOSFET, High frequncy model, The three frequency bands, Miller's Theorem, CS amplifier	4.8 4.9	**Tutorial 1**: Net Listing and Simulation Analysis Using SPICE
3	Oct. 17 - 21	**Frequency Response of other amplifers:** CE, CB, CG and Cascode amplifiers, Emitter and Source followers, Cutoff frequency of transistors	5.8, 5.9 (Notes)	**Expt 1**: Frequency Response of the Common Source Amplifier
4	Oct. 24- 28	**Review of Ideal Operaion Amplifiers:** Inverting Amplifiers, Integrators, Differentiators, Summer, Non-inverting Configurations, and Difference Amplifier.	2.1-2.4, 2.8	**Expt 2**: Frequency response of multistage transistor amplifiers
5	Oct. 31-Nov 4	**Effect of nonideality on circuit performances:** Open-loop Gain & bandwidth	2.5	**Expt 3**: Linear Applications of Operational Amplifier
		Exam 1 Sat Nov. 7 (5:30-7:30 pm)		
6	Nov. 7 - 11	Large Signal operation of op amps, Slew Rate, Offset Voltage, Input Bias Current	2.6-2.8	**NO LAB**
7	Nov. 14- 11*	**Filters:** Fiter Transmission, Types, Transfer function,	12.1-12.2	**Expt 4**: Frequency response of op amp based amplifiers
		Id al-Adha Vacation		
8	Dec. 5 -9	1st Order and 2nd order filter function. Biquadratic active filters: Single-amplifier filters	12.4-12.5	**Expt 5**: DC imperfections and large signal non-idealities of op amps
9	Dec. 12 -16	Inductor replacement Two-Integrator-loop	12.5, 12.8 12.6 12.7	**Expt 6:** Various types of first-order active filters and their applications
		Exam 2 Sat Dec 19 (5:30-7:30 pm)		
10	Dec. 19 -23*	Two port network paramters **Negative Feedback:** Propoorities, Topologies,	Appendix B 8.1, 8.2, 8.3, 8.4	**NO LAB**
11	Dec. 26 -30	Study of Series-Shunt feedback Amplifier, Series-Series, Shunt-Shunt.	8.5, 8.6,	**Expt 7:** Second-order active filters
12	Jan. 2- 6	Shunt-Series amplifiers, Analysis and Design of amplifiers using feedback theory : Additional Examples	(Notes)	**NO LAB**
13	Jan. 9-13	**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 8**: Applying Negative Feedback on Amplifiers and Rectifiers
14	Jan. 16-20	LC & Crystal Oscilators. Bistable Multivibrators	13.3, 13.4	**Expt 9**: Op amp Based Sinusoidal Oscillators
15	Jan. 23-27	Astable Multivibrator Project work and Review	13.5	**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"

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%