

Department of Electrical Engineering			
Electronic Circuits II (63313)			
Total Credits	3		
major compulsory			
Prerequisites	P1 : Electronic Circuits I (63214) OR Electronic Circuits I (63260)		
Course Contents			
Ac analysis of transistor circuit, large signal analysis of transistor circuits, small signal model for the BJT, small signal model for the FET, multi transistor circuits, current mirrors , differential amplifiers , power amplifiers , Op-Amps circuits analysis DC analysis			
Intended Learning Outcomes (ILO's)		Student Outcomes (SO's)	Contribution
1	Ability to analyze BJT amplifier	C	10 %
2	Ability to analyze FET circuits	C	50 %
3	Analyze current sources	C	10 %
4	Design differential amplifier	C	10 %
5	Analyze power amplifier	C	10 %
6	Analyze non linear Up-Amp circuits	C	10 %
Textbook and/ or References			
Electronics Design and Circuit theory , Boylestad and Nashelskey,Prentice Hall Electronics made Easy lecture notes Mazen Rasekh , An- Najah Univ.			
Assessment Criteria		Percent (%)	
First Exam		20 %	
Second Exam		20 %	
Homeworks		10 %	
Final Exam		50 %	
Course Plan			
Week	Topic		
1	Large signal analysis and design of transistor circuit The use of infinite bypass and coupling capacitor , DC and AD load lines , maximum symmetrical swings of instantaneous voltages and currents		
2	Cont- Large signal analysis and design Graphical and mathematical solutions and best design case solved examples		
3	Small signal model BJT Hybrid model determining the hybrid coefficients interns of transistor parameters for common emitter , common base and common collector configurations -		
4	Examples of small signal BJT analysis , General rule for analyzing Small signal circuits , special circuit techniques for simplifying solutions		
5	RE models for common emitter, base and collector circuits , introduction to small signal FET circuits		
6	Tutorials and First Exam		
7	The Small Signal FET Circuits Analysis and Design , Calculation of gm and rds quantities Analysis of small signal FET s circuit ,Common Source , Common Drain and Common Gate Configurations		
8	Impedances (and voltage sources) reflections in FET circuits ,reflecting ,source (and voltages) into the Drain circuit ,reflecting drain resistances (and voltages) into the source circuit , examples		

9	Multiple Transistor Circuits ,General Cascaded Transistor Amplifiers ,Direct Coupled Amplifiers , Darlington amplifier Configuration
10	Current mirrors and other special multiple transistor circuits , case design
11	Tutorial and second Exam
12	The Difference Amplifier D.C analysis of Difference Amplifiers, Small Signal Analysis of the Difference Amplifier , common mode rejection ratio
13	Power amplifiers , class A , class B , Class C and Class D
14	Op- Amps circuits and applications DC analysis -
15	Tutorial and revisions
16	Final Exam