Birzeit University
Faculty of Engineering and Technology
Electrical and Computer Engineering Department

ENEE3304 - ELECTRONICS 2
3 Credit Hours , two 75 – minute lecture sessions /week
Instructor : Mr. Mohammad Al - Jubeh   Office: Masri 220
Textbook: Microelectronic Circuits, Sedra / Smith, Seventh edition , 2014
References :
1- Electronic Devices and Circuit Theory, R .Boylestad &L.Nashelsky, Prentice Hall , 2009   10th Edition.
 2- Electronic Circuits, Discrete and Integrated
    By: Schilling, Belove.
Course Description :
Audio-frequency linear power amplifiers and heat sinks, current sources and their applications in IC, integrated differential and operational amplifier, applications of operational amplifiers, feedback amplifiers, discrete and integrated oscillators, voltage regulators, using simulation tools for the design, and analysis of electronic circuits.
Prerequisite: ENEE2303
Required for electrical engineering students

Specific outcomes of instructions :
 By the end of the course the students are
1- Able to analyze the basic building blocks of linear integrated circuits including differential amplifiers and current sources.
2- Able to design the basic building blocks of linear integrated circuits including differential amplifiers and current sources.
3- Able to analyze class A , class B , ,and class AB power amplifiers .Understand negative feedback , its basic configuration and its application to control input/output impedance , frequency response..
4- Able to analyze a variety of popular op amp circuits, including signal converters ,instrumentation , signal conditioning circuits, and comparators .
5- Able to design a variety of popular op amp circuits, including signal converters ,instrumentation , signal conditioning circuits, and comparators .
6- Able to identify different types of feedback that may be applied to amplifiers to shape their performance.
7- Able to analyze harmonic, square wave and triangle oscillators using BJTs, FETs, and OP-AMP .
8- Able to design harmonic, square wave and triangle oscillators using BJTs, FETs, and OP-AMPs
9- Able to analyze discrete and integrated voltage regulators.
10- Able to design discrete and integrated voltage regulators.
11- Are able to use the circuit simulator PSPICE for analysis and design of electronic circuits.

Course addresses ABET students outcome(s) :

a) an ability to apply knowledge of mathematics, science, and engineering

c) an ability to design a system, component, or process to meet desired needs

k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Brief list of topics to be covered :

Chapter 6   Single-stage Integrated- Circuit Amplifiers

Chapter 7   Differential and Multistage Amplifiers

Chapter 9   Feedback

Chapter 12   Signal Generators and Waveform – Shaping Circuits

Chapter 14   Output Stages and Power Amplifiers

Chapter A   Operational Amplifiers and their Applications

Chapter B   DC Voltage Regulation

Grading :

--	First and second Exams	35%
--	Course Works	20%
--	Final Exam	45%

		100%