

**EMEC 4313 – Applied Electric Circuits and electronics
For Industrial Engineering's students
Course Syllabus**

“Energy is the power that drives every human being. It is not lost by exertion but maintained by it.” Germaine Greer, b. 1939

Instructor	Dr. Hala J. El-Khozondar Office: N519 Email: hkhonzondar@iugaza.edu Homepage: www.iugaza.edu/homes/hkhonzondar
Meetings	Room N515 on Sunday and Tuesday from 8:00-9:30
Prerequisite:	Physics I, Calculus A
Topics	<ul style="list-style-type: none">* Circuit Elements: resistors, capacitors, inductors, voltage source, and current source.* Simple Resistive Circuits: Ohm’s circuit, resistors in series and on parallel* Techniques of Circuits Analysis: Superposition, Node voltage and mesh current; Thevenin and Norton equivalents* Diode applications, half-wave & full-wave rectifiers.* Bipolar junction transistor, construction, basic operation, characteristics and parameters, transistor as amplifier. Transistor bias circuits, DC operating point, base bias, emitter bias, voltage-divider bias, collector-feedback bias. Small ac signal analysis.* Voltage regulators.
Textbook	Introductory Circuit Analysis, 13 ed. by Robert L. Boylestad Electronic devices and circuit theory by Robert L. Boylestad & Louis Nashelsky Thomas L. Floyd, Electronic Devices, 7 th ed., Prentice-Hall, 2002. James Nilsson and Susan Riedel, “Introductory Circuits for Electrical and Computer Engineering”, 2005.
Course Objectives	<ol style="list-style-type: none">1. Get familiar with the circuit variable and basic circuit elements2. Analyze simple circuits applying Ohm’s and Kirchhoff’s laws3. Understand network theorems4. To know the characteristics of electronic components such as diodes and transistors5. To be familiar with their applications6. To know how to distinguish between different electronic components and their functions7. To know how to analyze simple electronic circuits
Intended Learning Outcomes	<ol style="list-style-type: none">1. Calculate the values of currents and voltages in simple resistive circuit by using Ohm’s and Kirchhoff’s laws.2. Find the responses of complicated circuits applying different network theorems3. To be able to define the characteristics of electronic components such as diodes and transistors4. To be able to list the diodes' applications

5. To be able to list the transistors' applications
6. To analysis simple electronic circuits

Assessment

Midterm Exam (35%)
Assignments (10%)
Quizzes (10%)
Final Exam (45%)

Homework Policy

Homework assignments will be given in a regular basis. Each assignment is to be returned within one week.

Office Hours

As posted on the office's door, or by appointment.