

**Summarized Course Description**

Course number: ECE 210	Course name: Electric Circuits (1)
لغة تدريس المقرر : English	Pre-requisites: MATH205 & PHYS103
Credit hours: 3 ( 2+ 2+ 0 )	Course level: Level 4 /Year2

**وصف المقرر :** **Course Description**

Circuit elements, Basic laws: Ohm's, KVL, KCL, and Power calculations. Resistive circuits: voltage and current divider rules, Dependent sources. Circuit analysis techniques: Nodal and Mesh analysis. Network theorems: Thevenin's Norton's, Source transformation, Superposition, Maximum power transfer. Energy storage elements: definitions and voltage-current relationships. Responses of first order LR and LC circuits. Responses of second order circuits. Phasor steady-state sinusoidal circuits analysis.

**أهداف المقرر :** **Course objectives**

1. Apply basic laws: Ohms law, KVL, KCL and power calculations.
2. Analyze resistive networks' and simplify complicated networks.
3. Use different circuit analysis techniques.
4. Deal with circuit containing energy storage elements.
5. Determine transient and steady state responses of first order circuits .
6. Perform Phasor frequency domain analysis.

**مخرجات التعليم:** **Course Outcomes**

Upon completing the course, the student should be able to:

1. Apply knowledge of mathematics, science, and engineering to the analysis and design of electrical circuits.
2. Identify, formulate, and solve engineering problems in the area circuits and systems.
3. Design an electric system, components or process to meet desired needs within realistic constraints.

**الكتاب المقرر والمراجع المساندة:** **Textbook and references**

Book	Authors	Publisher	Publication year
Electric Circuits	James Nilsson and Susan Riedel	Pearson	2014
Fundamentals of Electric Circuits	Charles K. Alexander, Matthew N. O. Sadiku	McGraw Hill	2016
Introductory Circuit Analysis	Robert Boylesta	Pearson	2016