EE112-2: Electrical Circuits (1)

Course code and name	EE112-2: Electrical Circuits (1)
Credits units	2 Credit units
Contact hours	4 Contact hours: 1 lecture, 1 tutorial and 2 practical
Instructor name	Dr. Bilel Dhouib
Textbook	Handbook: Electric Circuits, James W. Nilsson and Susan A. Riedel, 8thedition.
Other supplemental materials	Schaum'sout lines in electric circuits, Mahmood Nahvi, Joseph A. Ed minister, 4thedition.
	Specific course information
a. Course description	This course is a continuation of the Fundamental Electrical Engineering course studied in the previews level, it gives to students basic notions and tools to analyze, design and study electrical circuits. The students will be able to analyze single phase AC circuits, series-parallel RC, RL and RLC circuits, powers, phasor diagram, the three phase circuits: generation of three phase voltages and currents, power relationships, Wye and Delta connections, analysis of balanced three phase systems, vector diagrams.
b. Prerequisite	EE111-3
c. Required / Elective	Required
	Course Learning Outcomes
<u>CLO of the Lecture Activities:</u> CLO1: Find the natural and step response of first order RC and RL circuit. CLO2: Find the natural and step response of second order RLC circuits. CLO3: Discuss the magnetically coupled circuit and explain the ideal transformer. CLO4: Know the difference between balanced and unbalanced three phase systems and calculate power (average, reactive and complex) in any three phase circuit.	

CLO of the Laboratory Activities:

CLO1: Verify theory and to improve knowledge learned in class.

CLO2: Formulate and solve problems related to theory.

CLO3: Design and safety conducts an experimental procedure.

CLO4: Independently perform accurate quantitative measurements, interpret experimental results, perform calculations on these results and draw a reasonable, accurate conclusion.

CLO5: Communicate critical analysis of scientific information through written reports.

CLO6: Be integrated inside a group of work and respect the team working.

Brief list of topics to be covered

- General information on resistors, capacitors and inductors
- Response of first order RC and RL circuits
- Natural and step responses of RLC circuits
- Magnetically coupled circuits
- Three phase circuits

Mapping Course Learning Outcomes to Student Outcomes

	Lecture Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
CLO4							
	Laboratory Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							

CLO2							
CLO3							
CLO4							
CLO5							
CLO6							