

COURSE OUTLINE

University of Mosul
College of Engineering
Electrical Engineering Department

Course Code: ELCA150

Course Title: Electrical circuit analysis II

Prerequisite(s):

Co-requisite(s):

Credit Hours: 3 hours

Status:

Program:	B.S. Electronics and Communication	B.S. Power and Machines
Core	✓	✓
Elective		

Please check (✓) in the appropriate box

Offering Plan:

Semester 1	Semester 2	Summersemester
	✓	

Please check (✓) in the appropriate box

Level:	2019-2020	first
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Conducting hours per week (assuming 15 week semester):

Lecture	Lab	Tutorial	Project work
2	2	1	-

Text Book Required Reading and Other Materials:

Engineering Circuit Analysis 7th Edition

by [William H. Hayt](#) (Author), [Jack E. Kemmerly](#) (Author), [Steven M. Durbin](#) (Author)

Online site:

<https://classroom.google.com>

<https://meet.google.com>

Learning Outcomes: (a-k)

Grading scheme:

Component	Value (%)	Learning Outcomes Evaluated
Assignments	5	a-b-c-d-e-f-g
Quizzes	10	a-b-c
Laboratories	25	a-b-c-f-d-g-i-j-k
Mid-Term Test	10	a-d-h-e-k
Final Examination	50	a-d-h-e-k
<i>you may add, combine or delete lines...</i>		

Accreditation Units Breakup (%)

Mathematics	Natural Science	Complementary studies	Engineering Science	Engineering Design
20	10	30	40	

Catalog Course Description:

He\Her student learning in this course the components of the AC circuits. All Analyzes and theorem of the DC circuits that taken in the first level was applied in the AC circuits. As well as the power triangle

Specific, Measurable Student Behavioral Learning Objectives:

By the completion of the course, the students should be able to:

1-Identify fundamentals of AC electrical circuits and their components.

2-Recognize the AC circuits

3-Apply the electrical circuit methods in lab.

4-Determine the suitable analysis method to solve the problems

5-Analyze the electrical circuits by multiple methods

6-Solve the AC electrical circuits

7-Compare between multiple AC circuits analysis methods

8- Compare between DC & AC circuits analysis methods

Specific goals for the course:

Goal	SLO(s) (a-k)	Expected competency level (1-6)*	Assessment method
Comprehension+Knowledge	a-c-d	2-1	Assignments
Analysis+Application	a-b-c-d-e	4-3	Laboratories
Evaluation+Synthesis	e-f-g-h-k	6-5	Quizzes

Course Structure (15 weeks Schedule)

WEEK	TOPIC
1	Introduction to the AC Electrical circuits (wave form, peak value, peak to peak value, instantaneous value, the period of a wave)
2	Phase of AC, leads, lags, solve examples.
3	Average value, Root mean square (RMS), Form factor.
4	AC through resistance, AC through inductance, AC through capacitance.
5	R and L in series, R and C in series, Solve examples.
6	R,L and C in series, Solve examples.
7	R and L in parallel, R and C in parallel, Solve examples.
8	R, L and C in parallel, Solve examples.
9	Resonance (series and parallel), Solve examples.
10	Loop analysis in AC circuit, Solve examples.
11	Nodal analysis in AC circuit, Solve examples.
12	Norton theorem in AC circuit, Solve examples.
13	Thevenin theorem in AC circuit, Solve examples.
14	Maximum power transformation in AC circuit, Solve examples.
15	Final exam

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Couse coordinator:

Instructors:

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