



# Philadelphia University

Faculty of Engineering - Department of Electrical Engineering

## Course Details:

**Title:** Electric Circuits Laboratory. (610216)

**Prerequisite:** Electric Circuits 1 (610211)

**Credit Hours:** 1 credit hours (16 weeks per semester, approximately 45 contact hours)

**Textbook:** Laboratory notes and manual

**References:** Engineering Circuit Analysis, W.H.Hayat, Kemerly and Durbin, 6th Edition.

### **Course**

### **Description:**

The student learns the requirements for building simple DC/AC circuits. Students learn the use of power supplies, as well as, electric measuring devices and components.

## **Course Outlines:**

Week	Topic
1	Fundamental of electric circuits, DC power supply, DC meters, switches
2	Resistors, Potentiometers, Series and Parallel DC Circuits
3	Ohm's Law
4	Wheatestone Bridge
5	$\Delta$ -Y Connection
6	Superposition
7, 8	Thevenin's and Norton's Theorems
9, 10	Maximum Power transfer and Source Transformation
11, 12	RC, RL and RLC transient circuits with DC sources
13	Oscilloscope: Voltage, Current and Time measurements.
14	Oscilloscope: Frequency and Phase Measurements.
15, 16	RLC Circuits: Components, frequency dependence and frequency response, and Revision

## **Course Learning Outcomes with reference to ABET Student Outcomes:**

Upon successful completion of this course, student should:

1.	Ability to conduct experiments and data analysis	[a, b, d]
2.	Ability to use measurement devices efficiently	[a, b]
3.	Handling errors in measurements devices	[b]

## Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

- Quizzes:** (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.
- Reports:** 10 report.
- Final Exam:** The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

## Grading policy:

First Exam	"Quizzes (5%), reports (12%) and performances (3%)"	20%
Second Exam	"Quizzes (5%), reports (12%) and performances (3%)"	20%
Third Exam	"Quizzes (5%), reports (12%) and performances (3%)"	20%
Final Exam	"Practical 30% and Theoretical 10%"	40%
Final Exam	"Practical 30% and Theoretical 10%"	40%

## Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.

May, 2018