



# Philadelphia University

Faculty of Engineering - Department of Electrical Engineering

## Course Details:

<b>Title:</b>	Electric Machine Lab. (2) (610517)
<b>Prerequisite:</b>	Electric Machine (2) (610314)
<b>Credit Hours:</b>	1 credit hours (16 weeks per semester, approximately 45 contact hours)
<b>Textbook:</b>	Laboratory manuals
<b>References:</b>	1. Gordon R. Slemon: "Electric Machines and Drives", Addison-Wesley, 1992. 2. Theodore Wildi: "Electrical Machines, Drives, and Power System", 5th Edition, Prentice Hall, 2002. 3. George Mc Pherson, and Robert D. Lammore, "Electrical Machines and transformers".
<b>Course Description:</b>	To introduce the operation performance of electrical machines operations and applications. At completing this module the student should be able to: Learn about types of machines used in real life and understand its applications. Using measuring instrument to measure different machines ratings under operation and indicate its characteristics.

## Course Outlines:

Week	Topic
1	Introduction
2	Asynchronous motor "Slip-Ring "determination of equivalent circuit
3	Asynchronous motor "Slip-Ring "
4	Capacitor-run single-phase induction motor
5	Single-phase repulsion motor
6, 7	Universal motor
8, 9	Three- phase reluctance motor
10, 11	Operation synchronous generator in parallel with others with same size
12, 13	Operation synchronous generator in parallel with infinite bus
14, 15	DC-motor speed regulation
16	Revision

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

Upon successful completion of this lab, student should:

1.	Ability to understand the operations and characteristics of transformers	[a, b, d, k]
2.	Ability to understand the operation and characteristics of rotating machines	[a, b, d, k]
3.	The ability to measure torque, power and other electrical parameters	[a, b, d, k]

## 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 lab.
- Reports:** 10
- Final Exam:** The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the lab.

## 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%
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Total:	100%

## Attendance Regulation:

The semester has in total 16 weeks. Total absence hours from classes must not exceed 15% of the total week. 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 lab. If the excuse is approved by the deanship the student will be considered withdrawn from the lab.

January, 2018