EE352-3: Electrical Machines (2)

Course code and name	EE352-3: Electrical Machines (2)
Credits units	3 Credit units
Contact hours	5 Contact hours: 2 lecture, 1tutorial and 2 practical
Instructor name	Dr. Ferchichi Noureddine
Textbook	Stephen J. Chapman, "Electric Machinery Fundamentals", 4th edition, McGraw-Hill International Edition (2005). ISBN 007-115155-9.
Other supplemental materials	Fitzgerald, Kingsley and Umans, "Electric Machinery" 2nd ed. McGraw-Hill (2002).
	Specific course information
a. Course description	This course is a fundamental module on electrical machines; it is designed to teach students the concepts, principle of operations, construction and applications of AC machines. This module provides close insight into the study of electrical machines and drives.
b. Prerequisite	EE251-3
c. Required / Elective	Required
	Course Learning Outcomes

CLO of the Lecture Activities:

CLO1: Apply the fundamental theories related to rotating magnetic field applied to AC electric machines.

CLO2: Identify the construction, working principles, characteristics and equivalent circuit of three phase synchronous machines.

CLO3: Choose different types of test to calculate the equivalent circuit parameters, losses, efficiency, voltage regulation and ratings of three phase synchronous generators.

CLO4: Differentiate the construction, working principles, characteristics, equivalent circuit, effect of load, field current and power factor correction of three phase synchronous motors.

CLO5: Compare induction motor construction and basic concepts, equivalent circuit and parameter determination, power and torque, torque speed characteristics.

CLO6: Compute the various parameters of induction motors, the relationships between power and torque, torque speed characteristics.

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

- AC Machinery Fundamentals
- Synchronous Generators
- Synchronous Motors
- Induction Machines

Mapping Course Learning Outcomes to Student Outcomes

	Lecture Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							
CLO2							
CLO3							
CLO4							
CLO5							
CLO6							
	Laboratory Activities						
	SO1	SO2	SO3	SO4	SO5	SO6	SO7
CLO1							

CLO2							
CLO3							
CLO4							
CLO5							
CLO6							