EE457-2: Electrical Drives Systems

Course code and name	EE457-2: Electrical Drives Systems
Credits units	2 Credit units
Contact hours	4 Contact hours: 1 lecture, 1 tutorial and 2 practical
Instructor name	
Textbook	Ned Mohan, Tore M. Undeland, and William P. Robbins, Power Electronics Converters, Applications, and Design, second edition, John Wiley & sons INC.
Other supplemental materials	-
	Specific course information
a. Course description	This course will give the students a sufficient study and analysis about the using of electrical drive systems and converter types in residential and industrial applications. Also this course will give the basic principles for control methods for 1- DC-machine different types, 2- induction machines 3- synchronous machines 4- analysis of control method for special machines different types.
b. Prerequisite	EE456-3
c. Required / Elective	Elective
	Course Learning Outcomes

CLO of the Lecture Activities:

CLO1: Examine various applications in industrial and domestic areas where use of electric drives are essential.

CLO2: Classify types of electric drives systems based on nature of loads, control objectives, performance and reliability.

CLO3: Select most suitable type and specification of motor drive combination for efficient conversion and control of electric power.

CLO4: Identify the critical areas in application levels, and derive typical solutions.

CLO5: Design and justify new control and power conversion schemes for implementing alternative solutions considering the critical and contemporary issues.

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

- Electric Drive
- Motor power rating
- Stating of Electric Drives
- Braking of Electric Drives
- DC motor drives
- Induction motor drives
- Synchronous motor drives
- Industrial applications

Mapping Course Learning Outcomes to Student Outcomes

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

CLO1							
CLO2							
CLO3							
CLO4							
CLO5							
CLO6							