

<b>COURSE</b>	Name	: Control of Electric Drives
	Code	: EE184927
	Credits	: 3
	Semester	: Elective

### Description of Course

This course discusses the latest control system analysis and design methods in electrical control systems, power transfer circuits (PWM Inverter 3 phase), brushless DC motor servo, speed and position controller, speed sensorless control, and makes software on electric drive system

### Learning Outcomes

#### Knowledge

(P01) Mastering the concepts and principles of science and engineering mathematics, and implementing them in the form of procedures for analysis and design in power systems, control systems, multimedia telecommunications, or electronics as a preparation for further education or professional career.

#### Specific Skill

(KK01) Able to formulate engineering problems in power systems, control systems, multimedia telecommunications, or electronics.

#### General Skill

(KU12) Able to implement information and communication technology (ICT) in the context of implementation of his/her work.

#### Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

(S12) Working together to be able to make the most of his/her potential.

### Course Learning Outcomes

#### Knowledge

Mastering the concept of the dynamics of loaded motor system, how dc motor works, induction motor, voltage control method for AC inductor motor, synchronous motor work principle

#### Specific Skill

Able to dispose of rectifier control, chopper control, closed-loop control for dc drives, speed control and multiquadrant control, control using voltage source inverter, control using current source inverter, self control for synchronous motor.

#### General Skill

Capable of designing rectifier control, chopper control, closed loop control for dc drives, speed control and multiquadrant control, control using voltage source inverter, control using current source inverter, self control for synchronous motor using MATLAB, microcontroller.

#### Attitude

### Main Subjects

1. DC Motor Dynamics
2. Control of DC Motor
3. Induction Motor Dynamics
4. Control of Induction Motor
5. Control of Synchronous Motor

### Reference(s)

- [1] DUBEY, Gopal K : **Power Semiconductor Controlled Drives**, Prentice Hall, Inc., 1989  
[2] Subrahmanyam, Vedam : **Electric Drives Concepts & Applications**, McGraw-Hill, 1996

### Prerequisite(s)

EE184521 Control System Analysis and Design