4EE210PC/4EP210PC- Electrical Machine – I

Course Outcomes:

After Completion of this course, students will be able to:

1. **Explain** the Construction, working operation, of DC Machines.
2. **Illustrate** the different Characteristics, types, their Application and Parallel Operation of DC Generator.
3. **Demonstrate** the various types of DC motor, characteristics, starting method, testing method, speed control method and braking operation on DC motors.
4. **Explain** the Construction, working, types of Single-Phase Transformer and testing of Single-phase transformer.
5. **Explain** the Construction, working, different connections, applications and testing of three phase transformers.

4EE211PC/4EP211PC - Control System

Course Outcomes:

After completing this course, student will be able to:

1. Demonstrate the fundamental concepts of automatic Control and mathematical modeling of the Systems.
2. Analyze the transfer functions, Signal flow graphs and feedback system for stability and noise reduction.
3. Examine the functionality and applications of various control system components like motors and encoders.
4. Analyze time response characteristics of first and second order system with error analysis.
5. Apply stability criteria using Routh-Hurwitz and frequency response methods.
6. Assess system stability through Bode plots, Nyquist plots and gain/phase margin analysis.

4EE212PC/4EP212PC - Electromagnetic Fields

Course outcomes:

At the end of the course the student will be able to:

1. Demonstrate the basic mathematical concepts related to electromagnetic vector fields.
2. Apply the principles of electrostatics to the solutions of problems relating to electric field a
3. Apply the principles of magneto statics to the solutions of problems relating to magnetic field.
4. Apply Maxwell's equation in different forms (differential and integral) to diverse engineering problems.

4EE215M/4EP215M - Electrical Measurements

Course Outcomes:

A student completing this course, should be able to:

1. Classify the various measuring instruments like PMMC, MI, Electrodynamic type.
2. Explain the measurement of power and energy by wattmeter and energy meter.
3. Analyze various methods for measurement of resistance, inductance, and capacitance using AC/DC bridges.

4EE217OE/4EP217OE: Electrical Drives

Course Outcomes:

After completing this course, Students will be able to:

1. Explain the basic of electrical drives and Power Electronics devices
2. Demonstrate various modern speed control techniques of DC drives
3. Demonstrate various modern speed control techniques of AC drives

4EE218EM/4EP218EM - Engineering Economics

Course Outcomes –

After successful completion of the course, students will be able to -

1. Apply the concepts economics to assess demand and, including elasticity and laws of returns.
2. Demonstrate the understanding of cost and revenue structures, market types and inflationary trends, and banking principles.
3. Make use of the principles of time value of money, economic equivalence, and depreciation to evaluate engineering projects through various methods.