Department of Electrical (Electronics and Power) Engineering

B.E. 5th Sem

Course: Power System-I   **Course Code: (5EP01)**

At the end of Power System-I course the student will be able:

CO 1: To determine the parameters of transmission lines.

CO 2: To evaluate the performance of transmission line

CO 3: To describe transmission lines voltage control and power factor improvement methods.

CO 4: To explain representation of power system, Ferranti effect and corona phenomenon.

CO 5: To demonstrate various Insulators, its string efficiency.

CO 6: To demonstrate various underground cables & parameter

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Course: Microprocessor and Microcontroller   **Course Code: (5EP02)**

At the end of Microprocessor and Microcontroller course the student will be able:

CO 1: To recite Fundamentals and Architecture of Microprocessor 8085, Microcontroller 8051

CO 2: To interpret Assembly Language Programming of Microprocessor 8085, Microcontroller 8051

CO 3: To illustrate interfacing with Microprocessor 8085, Microcontroller 8051

CO 4: To apply knowledge of Microprocessor 8085 for measurement of Electrical quantities

CO 5: To discuss Fundamentals and Architecture of Microprocessor 8086

CO 6: To explain Fundamentals and Architecture of Microprocessor 8051

Course: Electrical Machines-II   **Course Code: (5EP03)**

At the end of Electrical Machines-II course the student will be able:

CO 1: To describe the construction, working operation & performance characteristics of three phase Induction Motor.

CO 2: To analyze the starting, braking and speed control of three phase induction motors by various methods.

CO 3: To describe the construction, working operation & performance characteristics of single-phase Induction Motor.

CO 4: To describe the construction, working operation & performance characteristics of alternator.

CO 5: To demonstrate the construction, working operation & performance characteristics of synchronous machine

CO 6: To explain the construction & working of special motors like Universal, Reluctance, PMSM & BLDC Motor

Course: Signal and System (PE-I)   **Course Code: (5EP04)**

At the end of Signal and system course the student will be able:

CO 1: To demonstrate knowledge of Continuous-Time Signals and Systems and analyze the LTI Continuous-Time Systems.

CO 2: To analyze the continuous-time systems using continuous Time Fourier transform.

CO 3: To demonstrate knowledge of Discrete-Time Signals and analyze the LTI Discrete-Time Systems.   .

CO 4: To explain the concept of sampling, Sampling Theorem, aliasing and the Nyquist rate.

CO 5: To analyze DT systems & their realization using Z-transforms.

CO 6: To analyze the discrete time systems using DTFT and DFT.

Course: Power Supply Systems (OE-I)   **Course Code: (5EP05)**

At the end of Power Supply System course the student will be able:

CO 1: To describe the Structure of Power system.

CO 2: To explain construction and working of Gas turbine power station.

CO 3: To describe construction and working of Hydro power station.

CO 4: To describe layout and working of Substations.

CO 5: To compare various power distribution system.

CO 6: To explain Electrical wiring required for various Installations.

B.E. 6th Sem

Course: Power Electronics   **Course Code: (6EP01)**

At the end of Power Electronics course the student will be able:

CO 1: To explain the concepts and techniques used in power electronics.

CO 2: To apply the knowledge of series and parallel connection of SCRs in power control applications.

CO 3: To analyze various single phase and three phase power converter circuits.

CO 4: To analyze the single phase and three phase Inverter circuits.

CO 5: To explain the operation of DC/DC and AC/AC converter circuits.

CO 6: To demonstrate the applications of power electronic circuits.   .

Course: Electrical Energy Distribution & Utilization   **Course Code: (6EP02)**

At the end of Electrical Energy Distribution & Utilization course the student will be able:

CO 1: To demonstrate the knowledge of distribution substation

CO 2: To compare different power distribution systems

CO 3: To describe elements of distribution Automation system

CO 4: To select proper electrical drive for industrial applications

CO 5: To explain the working of electric traction system

CO 6: To describe an illumination system & electric heating**.**

Course: Computer Aided Electrical Machine Design   Course Code: (6EP03)

At the end of course Computer Aided Electrical Machine Design the student will be able:

CO 1: To explain the Basics of Computer aided machine design & material selection.

CO 2: To derive the design parameters of single & three phase transformer core **.**

CO3: To calculate the winding & cooling system parameters of the transformer.

CO 4: To develop the armature winding diagram for three phase Induction Motor.

CO 5: To determine the stator core dimensions of three phase Induction motor.

CO 6: To design the squirrel cage & wound type rotor for three phase Induction motor.

Course: Advanced Control Systems (PE-II)   Course Code: (6EP04)

At the end of Advanced Control Systems course, the student will be able:

CO 1: To design compensator using time domain and frequency domain specifications.

CO 2: To represent system using state space model.

CO 3: To analyze controllability and observability for systems and design full state feedback controller.

CO 4: To analyze digital systems using Z Transform**.**

CO 5: To develop the describing function for the nonlinearity to assess the stability of the system.

CO 6: To analyze the Nonlinear system using Phase plane Analysis.

Course: Energy Audit and Management (OE-II)   **Course Code: (6EP05)**

At the end of Energy Audit & Management course, the student will be able:

CO 1: To discuss energy scenario and its management.

CO 2: To conduct the energy audit of different systems.

CO 3: To determine the economics of energy conservation

CO 4: To discuss various energy Conservation methods & their case studies

CO 5: To conduct energy audit case studies.

CO 6: To explain fundamentals of Harmonics.