

Department of Electrical (Electronics and Power) Engineering

B.E. 5th Sem

Course: Power System- I

Course Code: (SEP01)

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

- CO1:** To determine the parameters of transmission lines.
- CO2:** To evaluate the performance of transmission line
- CO3:** To describe transmission lines voltage control and power factor Improvement Methods.
- CO4:** To explain representation of power system, Ferranti effect and corona phenomenon
- CO5:** To demonstrate various Insulators, its string efficiency & underground cables.

Course: Microprocessors & Microcontroller

Course Code: (SEP02)

At the end of Microprocessors & Microcontroller course the student will be able:

- CO1:** To recite Fundamentals and Architecture of Microprocessor 8085, Microcontroller 8051.
- CO2:** To interpret Assembly Language Programming of Microprocessor 8085, Microcontroller 8051.
- CO3:** To illustrate interfacing with Microprocessor 8085, Microcontroller 8051
- CO4:** To apply knowledge of Microprocessor 8085 for measurement of Electrical quantities
- CO5:** To discuss Fundamentals and Architecture of Microprocessor 8086
- CO6:** To explain Fundamentals and Architecture of Microprocessor 805

Course: Electrical Machines – II

Course Code: (5EP03)

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

- CO1:** To describe the construction, working operation & performance characteristics of three phase Induction Motor.
- CO2:** To analyze the starting, braking and speed control of three phase induction motors by various methods.
- CO3:** To describe the construction, working operation & performance characteristics of single-phase Induction Motor.
- CO4:** To demonstrate the construction, working operation & performance characteristics of synchronous machine.
- CO5:** To explain the construction & working of special motors like Universal, Reluctance, PMSM & BLDC Motor.

Course: Signals and Systems (PE-I)

Course Code: (5EP04)

At the end of Signals and Systems course the student will be able:

- CO1:** To demonstrate knowledge of continuous-time and discrete-time signals and systems.
- CO2:** To analyze the continuous-time systems using continuous Time Fourier transform.
- CO3:** To explain the concept of sampling, Sampling Theorem, aliasing and the Nyquist rate.
- CO4:** To analyze DT systems & their realization using Z-transforms.
- CO5:** To analyze the discrete time systems using DTFT and DFT.

Course: Power Supply System (OE-I)

Course Code: (5EP05)

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

- CO1:** To describe the Structure of Power system.
- CO2:** To explain construction and working of various generation plants ·
- CO3:** To describe layout and working of Substations ·
- CO4:** To compare various power distribution system
- CO5:** 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 student will be able:

- CO1:** To explain the concepts and techniques used in power electronics
- CO2:** To apply the knowledge of series and parallel connection of SCRs in power control Applications.
- CO3:** To analyze various single phase and three phase power converter circuits
- CO4:** To analyze the single phase and three phase Inverter circuits
- CO5:** To explain the operation of DC/DC and AC/AC converter circuits
- CO6:** 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 student will be able:

- CO1:** To demonstrate the knowledge of distribution substation
- CO2:** To compare different power distribution systems
- CO3:** To describe elements of distribution Automation system
- CO4:** To select proper electrical drive for industrial applications
- CO5:** To explain the working of electric traction system
- CO6:** To describe an illumination system & electric heating

Course: Computer Aided Electrical Machine Design

Course Code: (6EP03)

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

- CO1:** To explain the Basics of Computer aided machine design & material selection.
- CO2:** To derive the design parameters of single & three phase transformer core.
- CO3:** To calculate the winding & cooling system parameters of the transformer
- CO4:** To develop the armature winding diagram for three phase Induction Motor
- CO5:** To determine the stator core dimensions of three phase Induction motor
- CO6:** 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 student will be able:

- CO1:** To design compensator using time domain and frequency domain specifications
- CO2:** To represent system using state space model
- CO3:** To analyze controllability and observability for systems and design full state feedback controller.
- CO4:** To analyze digital systems using Z Transform.
- CO5:** To develop the describing function for the nonlinearity to assess the stability of the system.
- CO6:** 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 and Management course student will be able:

- CO1:** To discuss energy scenario and its management.
- CO2:** To conduct the energy audit of different systems.
- CO3:** To determine the economics of energy conservation.
- CO4:** To discuss various energy Conservation methods & their case studies.
- CO5:** To explain fundamentals of Harmonics.