

Department of Electrical (Electronics and Power Engineering)

B.E. 5th Sem

Course: Control System-I

Course Code: (5EP01)

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

- CO 1:** To apply the basics of control system and to represent physical system in mathematical form.
- CO 2:** To describe about control system components like motors synchro devices etc. and their application and analysis.
- CO 3:** To design control system of first order and second order and time response analysis of such system.
- CO 4:** To analyze of stability criteria's and to plot root locus of given control system.
- CO 5:** To analyze about frequency response methods of control system like Bode plot, Nyquist plot.
- CO 6:** To design State Space Model of control system with the help of various methods

Course: Microprocessor and Microcontroller

Course Code: (5EP02)

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

- CO 1:** To implement an arithmetic, logical, branching and algorithmic instructions
- CO 2:** To execute an arithmetic and logical programs.
- CO 3:** To summarize the interfacing of the peripherals devices with microprocessor.
- CO 4:** To explain the concept of multitasking of the processor.
- CO 5:** To describe the applications of microprocessor.
- CO 6:** To illustrate the architecture of 8086 microprocessor.

Course: Electrical Machines-II

Course Code: (5EP03)

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

- CO 1:** To describe fundamental concepts of rotating machines and to identify the types of winding
- CO 2:** To explain constructional details and to analyze the performance characteristics of Synchronous Generator
- CO 3:** To analyze the performance characteristics of Synchronous Motor and to describe the
- CO 4:** To explain constructional details and to analyze the performance characteristics of three phase Induction Motor
- CO 5:** To compare the different methods of starting and braking of three phase Induction motor
- CO 6:** To describe different small machines like Single phase Induction, hysteresis, reluctance type motor

Course: Signal and System

Course Code: (5EP04)

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

- CO 1:** To Characterize and analyze the properties of CT and DT signals and systems
- CO 2:** To Analyze CT and DT systems in Time domain using convolution
- CO 3:** To Represent CT systems in the Frequency domain using Fourier analysis tools like CTFS, CTFT.
- CO 4:** To Represent DT systems in the Frequency domain using Fourier analysis tools like DTFS and DTFT.
- CO 5:** To Describe the effects of sampling a CT signal
- CO 6:** To Analyze CT and DT systems using Z -Transforms.

Course: Energy Audit and Management

Course Code: (5EP05)

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

- CO 1:** To estimate Indian energy scenario its needs for growing economy.
- CO 2:** To evaluate energy audit and various techniques use for energy auditing.
- CO 3:** To compare and to evaluate different methods use for energy conservation.
- CO 4:** To identify energy conservation in various places and to explain cogeneration and waste heat recovery.
- CO 5:** To conduct energy audit case studies.
- CO 6:** To explain harmonics and different terminology used in harmonics.

Course: Communication Skill

Course Code: (5EP06)

At the end of Communication Skill course the student will be able:

- CO 1:** To classify and explain basics concepts of Communication and its barriers.
- CO 2:** To become an active listener.
- CO 3:** To discuss ways of effectively speaking, public speaking.
- CO 4:** To present and speak effectively in public
- CO 5:** To face job interviews and group discussions,
- CO 6:** To read and write technical reports, proposals, research papers scientifically.

B.E. 6th Sem

Course: Electrical Power-I

Course Code: (6EP01)

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

- CO 1:** To describe transmission line parameters and their calculations also know various effects.
- CO 2:** To analyze V-I characteristics of various transmission line & study various phenomenon of transmission line
- CO 3:** To explain various methods of voltage control and power factor improvement.
- CO 4:** To evaluate load flow problems, methods of load flow and modeling of various buses.
- CO 5:** To describe various components of power system such as Insulators, line supports and their testing.
- CO 6:** To explain construction of cables, their types, rating, testing and grading.

Course: Optimization Technique

Course Code: (6EP02)

At the end of Optimization Technique course the student will be able:

- CO 1:** To formulate mathematical models of real world single and multivariable optimization problems and to calculate its optimal solution through classical approach.
- CO 2:** To recognize linear relationship among the real world optimization problem and to calculate optimal solution by conventional linear methods of optimization.
- CO 3:** To construct complex linear programming mathematical model and to evaluate.
- CO 4:** To differentiate non-linearities that occurs in the real world problems and to evaluate non-linear programming mathematical model.
- CO 5:** To explain significance of PERT and CPM techniques and to estimate network diagrams.
- CO 6:** To classify and formulate real world multistage decision problems and to define solution through dynamic programming methods.

Course: Power Electronics

Course Code: (6EP03)

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

- CO 1:** To evaluate basic operation of various power semiconductor devices and passive components.
- CO 2:** To compare series and parallel operation of SCR and study protection of SCR.
- CO 3:** To classify and design an AC/DC rectifier circuit.
- CO 4:** To classify and design an AC/DC inverter circuit.
- CO 5:** To compare different types of chopper circuits.
- CO 6:** To describe various speed control techniques of DC motor

Course: Computer Aided Machine Design

Course Code: (6EP04)

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

- CO 1:** To describe basic design concept of machine, characteristics of engineering material and application of digital computer in design of machine
- CO 2:** To design the magnetic circuit of transformer and to analyze its performance.
- CO 3:** To design the thermal circuit of transformer and to analyze its performance.
- CO 4:** To design the stator circuit of Induction motor.
- CO 5:** To design the rotor circuit of Induction motor.
- CO 6:** To estimate the parameter of Induction motor and to determine its effects on performance.

Course: Power Supply System (FE)

Course Code: (6FEEP05)

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

- CO 1:** To identify the various components in power system structure.
- CO 2:** To describe the need and concept of main components as well the different auxiliaries in various power plants.
- CO 3:** To compare the various power plants (Thermal, Hydro, Nuclear etc.).
- CO 4:** To design the components of Electrical substation.
- CO 5:** To describe various methods of power distribution system.
- CO 6:** To compare the different wirings of residential, commercial building and industrial sectors.

Course: Electrical Energy Utilization

Course Code: (6EP06)

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

- CO 1:** To explain concepts of electrical drives and its industrial applications.
- CO 2:** To classify different duties and test on induction motor.
- CO 3:** To describe different characteristics of dc motor, single and three phase induction motor.
- CO 4:** To quote basic concepts of traction system, its energy consumption and calculations.
- CO 5:** To illustrate general features, types, characteristics of locomotive motor for overhead equipment's.
- CO 6:** To calculate lighting calculations for factory, flood and street. Also Various methods of heating and welding furnaces