

Department of Electrical (Electronics and Power) Engineering

B.E. 7th Sem

Course: Power System-II

Course Code: (7EP01)

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

- CO 1:** To explain the basic Concept of Fault Analysis in Electrical systems.
- CO 2:** To transform the unsymmetrical components into symmetrical components and to form sequence networks of power system elements.
- CO 3:** To analyze the different types of symmetrical and Unsymmetrical Faults in Electric Power System.
- CO 4:** To compare and analyze different types of unsymmetrical faults using symmetrical components.
- CO 5:** To analyze the steady state stability of the system.
- CO 6:** To assess transient state stability of two machine systems.

Course: Digital Signal Processing

Course Code: (7EP02)

At the end of Digital Signal Processing course, the student will be able:

- CO 1:** To analyze the discrete time signals in time domain.
- CO 2:** To analyze the discrete time systems using DTFT and DFT.
- CO 3:** To apply the concept of Band pass sampling.
- CO 4:** To design the structures of different types of digital filters.
- CO 5:** To analyze the frequency response of various digital filters.
- CO 6:** To apply the knowledge of multi-rate signal processing.

Course: Entrepreneurship and Project Management

Course Code: (7EP03)

At the end of Entrepreneurship and Project Management course the student will be able:

- CO 1:** To understand the concept of entrepreneurship and its role in economic development.
- CO 2:** To explain the skill required for entrepreneurs.
- CO 3:** To compare the various business models and select the most suitable.
- CO 4:** To formulate the project report and Source of finance for a project.
- CO 5:** To identification & evaluation of project reports of various types.
- CO 6:** To estimate the cost, time & resources for the project work.

Course: Power System Operation and Control

Course Code: (7EP04)

At the end of Power System Operation and Control course the student will be able:

- CO 1:** To summarize the knowledge of preliminaries on power system operation and control.
- CO 2:** To determine the optimal scheduling of generation for a two-plant system with and without losses for the economic operation of the power system.
- CO 3:** To develop the mathematical model of the Automatic Load-Frequency Control (ALFC) loop and the Automatic Voltage Regulator (AVR) loop.
- CO 4:** To evaluate the Automatic generation control and transfer function modeling of Automatic Load Frequency Control (ALFC) and its different components
- CO 5:** To explain the concepts of Control Area, Pool operation; Tie-line Modeling, Tie-line bias control, and to discuss Static and Dynamic response of ALFC loop.
- CO 6:** To explain the role of the power system stabilizer in damping the steady-state oscillations set up in the power system.

Course: Distributed Automation (PE-IV)

Course Code: (7EP05)

At the end of Distributed Automation course, the student will be able:

- CO 1:** To summarize distribution system planning and automation.
- CO 2:** To select appropriate communication technology for SCADA applied to distribution automation.
- CO 3:** To demonstrate the knowledge of substation automation.
- CO 4:** To improve the voltage profile of distribution feeder using distribution automation.
- CO 5:** To explain the concept of remote metering.
- CO 6:** To choose the appropriate type of energy management.

B.E. 8th Sem

Course: Power System Protection

Course Code: (8EP01)

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

- CO 1:** To explain the need, desirable features & main components of protection system.
- CO 2:** To design the various protection scheme for transmission line.
- CO 3:** To develop the protection scheme for Alternator, Transformer, and Motors & Busbar.
- CO 4:** To demonstrate the knowledge of static relays & Numerical relays.
- CO 5:** To explain Construction, operation & application of fuses.
- CO 6:** To select the proper type & rating of circuit breaker and fuses for various application.

Course: Computer Methods in Power System Analysis

Course Code: (8EP02)

At the end of Computer Methods in Power System Analysis course, the student will be able:

- CO 1:** To develop mathematical model to represent the power system components for computerized analysis.
- CO 2:** To demonstrate the topology of electrical power system.
- CO 3:** To formulate Zbus & Ybus by algorithm.
- CO 4:** To analyze short circuit studies of electrical power system.
- CO 5:** To analyze load flow studies of electrical power system.
- CO 6:** To examine stability studies of electrical power system.

Course: Smart Grid System (PE-V)

Course Code: (8EP03)

At the end of Smart Grid System course, the student will be able:

CO 1: To explain the features, necessity and architecture of Smart Grid.

CO 2: To relate the role of Automation in Transmission and Distribution.

CO 3: To decide different measuring methods and sensors used in Smart Grid

CO 4: To interpret the role of batteries and energy storages in Smart Grid.

CO 5: To discuss Power Quality issues in Smart Grid.

CO 6: To elaborate the role of communication and networking in Smart Grid.

Course: Power Quality (PE-VI)

Course Code: (8EP04)

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

CO 1: To illustrate the concept, need, and standards of Power Quality

CO 2: To classify Power quality characteristics.

CO 3: To explain Power Quality Standards.

CO 4: To explain Power Quality Solution Reduce Effects on Sensitive Equipment

CO 5: To explain Wiring and Grounding Principles.

CO 6: To make use of measurement tools for power quality survey.