

**Course Overview:**

The continuity of Electrical Protection System is very important to the consumers specially, for industrial sector where the curtail of electrical power supply is costly. It is important to take the necessary action to prevent the faults, and If they do occur, to minimize possible damage or possible power disruption. A protection system continuously monitors the power system to ensure maximum of electrical supply with minimum damage to life, equipment and property. Many utilities need this practical course that studies the Relay characteristics during faults, and weak protection points in electrical systems These studies will be elaborated by practical case studies.

**Course Objective:**

- Knowing the fault reasons in electrical networks and Its effect on the electrical quantities.
- Reviewing the Grounding System of generation, Transmission and Distribution Networks and how it affects the electrical quantities, short circuit level and protection system.
- Understanding main concepts of protection equipment and its necessity in electrical System.
- How to make relay coordination for main and back-up protection relays on lke network.
- How to protect the power system due to up normal operational conditions.

**Course Outline:**

- INTRODUCTION TO ELECTRICAL PROTECTION SYSTEM
- POWER SYSTEM RELAYING (PSR)
- FUSES
- MEASURING TRANSFORMERS (VTS & CTS)
- PROTECTIVE RELAYS
- RELAY COORDINATION
- DIFFERENTIAL RELAYS (D.R.)
- IMPEDANCE RELAYS
- Under Frequency Protection (U/F.P.)
- Over Voltage protection (O/V.P.)
- Applications & Case Studies

**Who Should Attend:**

This course is intended for Electrical Engineers & Supervisors, who work in operation, maintenance, protection, control and analysis of Utilities & Industries Electrical Networks.

**Training Language:**

EN / AR

**Training Methodology:**

- Presentation & Slides
- Audio Visual Aids
- Interactive Discussion
- Participatory Exercise
- Action Learning
- Class Activities
- Case Studies
- Workshops
- Simulation