

# ELECTRICAL COURSES

## TRANSMISSION LINE PROTECTION (E33A)

**OBJECTIVE:**

This course is designed to provide the participants with full information about the elements distance, directional over current and, directional earth fault protection.

**WHO SHOULD ATTEND?**

This course is recommended for electrical technicians and engineers who work in the protection field and have basic experience in this field.

**COURSE CONTENT:**

- Introduction to Transmission Line Protection.
- Distance Protection Principles.
- Reach and Zones of Operation.
- Distance Relays Characteristics and their Applications.
- Distance Protection Schemes and their Application.
- Power Swing Blocking.
- Direction Over Current Protection.
- Direction Earth Fault Protection.

**PRACTICAL TASKS:**

- Testing of distance relay.
- Calculating the setting of arbitrary transmission line distance and loading these settings to a digital distance relay.

**Duration: 5 Days**

Date:	Venue:	Cost:
Feb 16-20	Dammam	SR6,000
Aug 2-6	Dammam	SR6,000
Aug 30-Sep 3	Riyadh	SR7,000

## TRANSFORMER PRINCIPLES AND APPLICATION (E12B)

**OBJECTIVE:**

This seminar is designed to provide information on the fundamentals of transformer construction, operation, maintenance and testing. Protective devices on power transformers will also be discussed. The major emphasis will be on liquid-filled power transformers as well as dry type transformers.

**WHO SHOULD ATTEND?**

This program is recommended for experienced electrical technicians, supervisors and engineers involved with the operation and maintenance of transformers.

**COURSE CONTENT:**

- Transformer Construction
- Transformer Principles and Classification
- Circuitry and Cooling
- Tap Changers
- Transformer Connections
- Special Transformers
- Reactors
- Transformer Maintenance

**PRACTICAL TASKS:**

- Megger test
- Resistance test
- Transformer Turns Ratio Test (TTR)
- Oil test
  - dielectric test, ppm test, acidity test
  - power factor test, color test
- Demonstration of oil purification system

**Duration: 10 Days**

Date:	Venue:	Cost:
Mar 15 – 26	Dammam	SR10,000
Aug 16 – 27	Dammam	SR10,000