



## Substation Design- Operation & Maintenance

### Entry Requirement

Candidate should have basic electrical fundamentals knowledge having BE-BSC Electrical Engineering degree

### Description

This training course is strongly recommended for the engineering intends to work as substation design and testing engineer.

### Course contents

- Course introduction and importance
- International Standards
- Power System overview LV-MV-HV
- Substation overview and classification. AIS- GIS
- Substations operating schemes
- Single busbar, double busbar, ring main scheme, one and half breaker scheme
- Circuit breakers and protection relays 415V, 11KV, 132KV, 220KV, 500KV
- Key components and their applications CT- PTs, CB, Relays. DC batteries, Charger – RTU. SCADA
- Control and relay panels.
- Substation layouts
- Substation NTDC and IEC standards
- Transmission tower types
- Transmission conductors sizing and names
- 11KV panels
- Auto transformer and power transformer
- Operation philosophy
- Recommended maintenance.
- Switchgear maintenance and its testing
- Batteries and protection relays
- Substation Automation

### **Benefits**

- Training by Mr. Sajid Munir. He has rich hands-on experience in electrical projects in the areas of substation, industry, commercial, solar PV, Relay testing, project management, technical trainings.
- Trainings flexible face to face or online.
- Real time field base demo and exercise.

### **Course duration**

1 week

8:00pm to 10:00pm



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