

High Voltage Course

Course Objectives

- Provide trainees with a wide exposure to the High Voltage Substations Projects, Reputed Companies, and Consultants.
- Importance of H.V substations in Electrical Grid, and different kinds of H.V Substations.
- H.V Substations Main Equipment.
- Control and Protection systems of H.V substations, Conventional and Substation Automation Systems.

Course Description

- Upon completion of the course, trainee will be able to design the SLD and Layout of H.V Substations.
- Metering and Protection Single Line Diagram.
- Control and Protection Panels front views.
- Conventional Control Circuits in addition to Substation Control System by Automation.
- Interlocking Logic Diagram of H.V Substations.
- Interfaces between H.V substations equipment from Control and Protection Point of View.

Training Structure

10 Class x 2.5 hours = 25 hours

References for the trainee to prepare himself to the course

- <https://www.facebook.com/Eduvate-1311710185651473/>

Prerequisites

- Basic knowledge and skills about using AutoCAD
- Electrical power system protection and control background.

Course Grading

- Attendance 25%
- Ethics 15%
- Assignments Submission 30%
- Technical Project /Assignments 35%



+2 010000 50300

+2 010000 93429



Cairo: 2 Hassan Afify St., Makram Ebeid, Nasr City.
Alex: Mostafa kamel st., Smoha
Kuwait: Mubarak Al kabier., Sabah Al Salem.



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Course Outlines

1. Importance of HV Substations in national grid.
2. Different kinds of HV substations.
3. Different kinds of Bus bar arrangements.
4. Typical Bus bar arrangements in Egypt for different voltage levels.
5. Examples for HV Single Line Diagrams.
6. Examples for HV substations layouts.
7. Instrument transformers in HV substations.
8. Different control high levels of high voltage substations.
9. Conventional control system of HV substations.
10. Substation automation system of HV substations.
11. Electrical protections of HV substations i. Distance protection / Line differential protection. ii. Transformer differential protection. iii. Backup over current – Earth fault protection. iv. Breaker failure and busbar protection systems.
12. Tendering and management process.
13. Technical project.



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