



Advanced Training & Certification Program

Electrical Design Engineering With ETAP Software

Engineers 3D
Institute of Engineering Design

EDE-101 Fundamentals of Electrical Design Engineering & Load Estimation of Plants

COURSE OUTLINE

Concept of EPC Projects
Fundamentals of Power Generation, Transmission, distribution and utilization.
Introduction of key electrical equipments used in projects
Overview of Codes & Standards IEC / ANSI / IEEE
Introduction of P&ID
Preparation of Load Schedule
Determination of power Supply Capacity
Standby Capacity consideration
Rating Of Motors In Relation To Their Driven Machines
Rating of other Electrical Equipments

EDE-102 Developments of Single Line Diagrams and Control Schematics

COURSE OUTLINE

Introduction to Single Line Diagram	Introduction to Control Schematics
Design & Development of -	Block Diagram
- Key SLD	Typical Schematics for Motor Feeder
- Detail SLD	Typical Schematics for Power Feeder
- Lighting system SLD	Typical Schematics for Transformer Feeder
- Small power SLD	
Metering and Control diagram	

EDE-103 Electrical Equipments Selection Sizing and Protections

COURSE OUTLINE

Selection, Sizing, Protection, Specification, Data-Sheet, Vendor Data Review
Of following Electrical Equipments-

- Generators	- Power Capacitor Banks	- C T/PT
- Transformers	- HV/MV/LV Switch gears	- Bus Duct
- Motor	- HV/MV/LV Capacitor Bank	- ACUPS
- Equipment Protections	- Power Reactor	- DC UPS

EDE-104

Cables Selection, Sizing and
Cable Routing

COURSE OUTLINE

Power and Control cable Introduction	Cable Schedule
Cable selection	Cable interconnection Schedule
Cable sizing for Low voltage system	Selection and Sizing of Cable Tray
Cable sizing for High voltage system	Cable tray schedule
Voltage Drop Consideration	Cable Drum schedule
Let through Energy consideration	Conduit Selection
Earth fault Loop Impedance consideration	Cable routing Layout
	Cable Tagging & Installation details

EDE-105

Plant Lighting & Illumination
Design

COURSE OUTLINE

Introduction	Street Lighting calculations
Type of Lighting Fixtures	Calculations on Software
Selection of Lighting Fixtures	Lighting Layout Design
Preparation Of Fixture Schedule	Lighting Installation Detail
Indoor Illumination Calculation	Small Power selection
Outdoor Illumination Calculation	Lighting Board Schedule
	Material Take Off

EDE-106

Fundamentals of Plant Earthing
Design

COURSE OUTLINE

Requirement of Earthing in Industrial Plants	Ground Electrode System
Earthing Design calculations	Lightening Protection Requirement
Type of Earthing and Details	Lightening Protection Calculation
Earthing Installation Details	Lightening Installation Details
Earthing Layout Design	Lightening Layout Design
Power supply System Grounding	Material Take Off
Equipments (Protective) Earthing	

EDE-107 Hazardous Area Classification

COURSE OUTLINE

Zone /Division Classification	Marking Of Equipment Nameplates
TypesOf Protection For Hazardous Areas	Hazardous Area Drawings/Layouts
Hazardous source List Preparation	Preparation
Certification Of Hazardous Area Equipment	

EDE-108 Substation / Switch Yard
Design

COURSE OUTLINE

Introduction	Surge Arresters, Line Traps, Power Insulators,
Type of Sub-Stations	Bushings, Bus bars and Connectors
Legislation, Standards,	CT, PT, PLCC, BPT
Drawings and Documents	Interlocking Lightning Protection, Lighting
Substation Layout and Equipment	Substation Earthing Protections

EDE-109 System Studies on
ETAP Software

COURSE OUTLINE

Overview of ETAP Software,
Project Settings,
One-Line Diagram,
Load Flow Analysis, Configuration & Case Study ,
Circuit Analysis (Fault Calculations and Stability Studies)
Motor Starting Study

Admission Procedure:

Submit Dully filled Admission Form, along with Registration Fee.

To,
Engineers 3D

Declaration:

- This training program is on AUTONOMOUS basis conducted by Engineers 3D.
- Engineers 3D has right to expel any student at any time for misbehavior, poor attendance without refunding the fees.
- Certification will be issued only after completion of course, submission of all assignments and passing all the examinations.
- Engineers 3D has its own rules and regulations about conducting examinations and assessment of examinations

Engineers 3D

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