



Advance Electrical Design & Engineering Institute (AEDEI)

(ISO 9001:2008 CERTIFIED INSTITUTE) : NEW DELHI



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About us :

Advance Electrical Design & Engineering Institute (AEDEI) ISO certified 9001:2008 Electrical Design & Engineering training programs for Dedicated to Electrical Engineers. AEDEI is latest venture for providing the quality education in the best possible facilities is a key aim of Skill developments for various verticals in Electrical Engineering design.

Our Mission :

Our Technical Institute offers a full range of training in electrical ,Electronics & communication and mechanical design courses full fill requirement of current industries ,

These courses which encompass all aspects of core electricity from fundamentals to in-depth of design knowledge are based on several value adding pillars.

Our trainers share their know-how and design experience through demonstrations on dedicated equipment on industries. Courses include training dedicated documents and the possibility of follow-up with regular /internship /e-learning modules. Over one to 45 days depending on the topic, trainees get in-depth, hands-on instruction and the opportunity to practice their acquired know-how.

We cover all the range of engineering industries skills disciplines:

- Electrical System Design
- Solar Power Plant Design
- Technical Transformer Design
- Cable Design
- Thermal Power Plant Design
- Hydro Power Plant Design
- Mechanical design
- HVAC Design
- Oil & Gas Plant Design
- Gas insulated Substation Design
- Automation & Control
- Electrical Testing Engineer
- QA/QC Electrical
- Power System Software

Solar Power Plant Design

This solar power plant design course has been developed to meet the requirements of the National Occupational Standards. The Solar PV course is designed to provide already practising electrical installers with all the skills and knowledge required to enable them to select the most appropriate solar PV system for a building based on consultation with the client about their needs and demands, to install any of the common types of PV systems in a safe and workmanlike manner. It also provides training in the maintenance and servicing of PV systems.

Experienced Instructors :

Your instructors, professional engineers with many years of field and design experience, will train you through theory calculation practical, instructor having expertise solar power plant design .

Duration : 45 Days

Mode: Regular /Internship/online/Correspondence

Why You Should Attend :

When you complete this course you will be able to:

Energy Yield Calculation • Grid interactive solar power plant design • Off Grid Solar Power Plant Design • Roof top Solar Power Plant Design • MW Solar Power Plant Design • Tilt Angle Calculation • Net Metering Solar Power Plant Design • Solar Energy Calculation Software Auto Cad Software

Study Materials :

You will receive extensive course materials that will serve as valuable references in your work.

What You Will Study (Syllabus)

Module 1 : Solar Radiation

Irradiation and Peak Sun Hours • Solar Radiation Data • Sun path Diagram • Defining the Position of the Sun • Solar Altitude • Geometric Effects • Tilting Solar Modules • Magnetic North & True North

Module 2 : Connections of PV Module (Series and Parallel Circuits)

• Series Circuits • Parallel Circuits • Combining Series & Parallel Circuits • Understanding Cell Connection • Array

Module 3 : PV Cells Selection and Sizing

• Introduction • Characteristics of a Solar Cell • Power Characteristics of a Solar Cell • Fill factor and Equivalent Solar cell Circuit • STC and NOCT • Factors Which Affect the Performance of Solar Cells • Types of Solar Cells • Manufacture of Silicon Solar Cells • Commercial Modules Electrical Protection • Module Reliability

Module 4 : Inverters Selection and Sizing (Grid Connection & Off Grid)

• Purpose of inverters • Grid-Connected Inverters vs. Stand-Alone Inverters • Types of Grid-Connected inverters: Introduction • Isolated Inverters • Types of Inverters - PV to Inverter Interface • Inverter Protection Systems • Power Quality • Monitoring • Inverter Efficiency • How DC is Converted to AC
Products for Use in India

Module 5 : Module Mounting Systems

• Introduction • Calculating the Wind Loading of the Solar Array • Roof Mounted • Systems • PV Array Row Spacing • Ground Mounted Systems

Module 6 : Solar Power Plant Balance of System

• Introduction • Cabling • Array String Protection and Disconnect Switches • Lightning Protection • Array Junction Box • PV Main Disconnection Devices • Metering • System Monitoring: Local and/or Web Based Display

Module 7 : Energy Efficiency & Calculation

● Introduction ● Energy Efficiency Measures ● Overview of Passive Solar Design Principles

Module 8 : Solar Power Plant Site Survey & Assessment

● Introduction ● Undertaking a Site Assessment ● Choosing a PV Module ● Choosing an Inverter ● Choosing a Mounting System Type ● Determining the Maximum Number of Modules That Can Fit on a Roof

Module 9 : Matching Array and Inverter Sizing

● Matching The PV Array To The Voltage Specifications of An Inverter ● Matching the PV Array to the Inverter's Current Rating ● Matching the PV Array to the Inverter's Power Rating ● Summary of Calculations for Matching Array and Inverter

Module 10 - Solar Power Plant System Protection

● Determining the Protection Equipment and Switching ● PV Array Maximum Voltage| ● Circuit Protection: Over-Current ● Disconnection Devices ● System Earthing ● Connecting the System to the Grid

Module 11 - System Losses of Solar Power Plant

● Determining the Size of the DC and AC Cables ● Losses in a Grid-Connected PV System

Module 12 : Solar Power System Yield and Performance (Energy Guarantee)

● What Determines the Energy Yield of a System ● Calculating the Energy Yield for a PV Grid-Connected System ● Specific Yield ● Performance Ratio ● CUF Calculation.

Module 13 : Plant Installation and Commissioning

● IEC Standards ● Equipment Selection - Warranties I ● Installation Preparation ● Equipment Installation ● Monitoring Equipment ● Commissioning ● System Documentation ● System Installation & Pre-Commissioning Checklist ● Commissioning Test Sheets

Module 14 : Maintenance and troubleshooting

System Maintenance ● Trouble Shooting

Module 15 : Megawatt Solar Plant System

● Introduction ● Preliminary Planning ● Designing a Large PV Grid Connect System What Array/Inverter Configuration Should Be Selected ● Monitoring.

Module 16 : Costing and Tendering of Solar Power Plant

● Introduction ● Simple Payback ● Life Cycle Costing
Determining Costs Associated with the Whole PV System
Valuing a PV System

Module 17 : Smart Grids/Net Metering

● What Will The Smart Grid Do ● Smart Meters
SPV Software ● PVsyst, meteonorm, Google sketchup

Ref. Std. IEC IEC 60068-2 (1,2,14,30),IEC
61683,IEC 60227,IEC 60502 IEC 60947 part I,II, III ,IEC 61215



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Job Oriented and Skill Development Electrical Courses

(ISO 9001:2008 APPROVED) : NEW DELHI

Thermal Power Plant Design



Power System Software Course



Technical transformer Design (TTD)



QA/QC Electrical Course



Automation & Instrumentation Design



Solar Power Plant Design



Electrical system Design



Technical Cable Design



HVAC Design



Testing Engineer Electrical



Mat Lab Software Course



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