# Five-Day Mini MBA Programme in Industry Infrastructure, Power, and Electricity

Accelerate industry expertise in five days

## Introduction

The three main facets of any electrical installation network in the globe are covered in this 5-day Course N Carry Mini MBA in Power, Electricity, and Industry Infrastructure training course. The goal of this training programme is to provide participants with a thorough grasp of the concepts, features, design, and selection of power transmission, distribution of energy, and cutting-edge digital industrial infrastructure. The creation of electric power by thermal energy is progressively being replaced by clean, green energy, mostly from solar and wind power, which also transmits electricity.

In the electrical distribution networks, the smart grid and micro grids are the newest developments. These grids distribute power using intelligent sensors that are equipped with artificial intelligence capabilities. By integrating electrical equipment that will lower carbon footprint and, therefore, significantly lower the potential for global warming, the industrial infrastructure has advanced significantly. With the increasing dependency of efficient infrastructure components and equipment on internet of things (IoT) technology, digital substations are proliferating. With the beginning of the digitization of industrial infrastructure, smart digital transformers are appearing quickly. Due to its increased safety, the retro filling of transformers with modern ester oil in place of mineral oil is becoming more and more popular. The latest, cutting-edge smart transformers integrate robotics.

**The following will be covered in this 5-day training course for a mini-MBA in power, electricity, and industry infrastructure:**

- Green and clean electricity generating vs thermal power generation.
- The structure and features of solar and wind power generating.
- Characteristics of micro and smart grids
- Connecting renewable energy sources and storing energy
- Digital substation components and construction
- Industry infrastructure's digital equipment

## Objectives

**After completing this 5-day Mini MBA in Industry Infrastructure, Power, and Electricity training course, participants will be able to:**

- Make a distinction between the many forms of electricity generating, such as renewables.
- Recognise the different roles that the three power components—apparent, reactive, and active—play.
- Recognise the advantages and significance of renewable energy.
- Recognise and explain micro- and smart grids.
- Acknowledge the significance of the infrastructure of the digital sector.

## Training Methodology

The teacher of this Electrical Engineering training course will use a range of tried-and-true adult learning teaching and facilitation strategies to make sure that participants get a full instruction on the topics covered by the seminar outline. A copy of the extensive training course notes will be given to each participant in the training session. Using power point presentations, films, and computer displays, the presenter will outline and go over the subjects.

To maximise delegate engagement, the training course is organised to be interactive. It is encouraged to ask questions during and throughout the daily sessions. Workshop sessions on problem resolution will include discussions of needs-based case studies and examples. This allows attendees to talk about their own issues and suitable solutions with other delegates and the presenter.

## Organizational impacts

**Following the 5-Day Mini MBA in Power, Electricity, and Industry Infrastructure course, the following effects would be seen by the organisation:**

- Upskilling and technical training are necessary to enhance and maximise the capabilities of a skilled workforce.
- Digitalization and cutting-edge technology boost productivity.
- Locating potential sites for the installation of clean, green energy
- Staff networking with other engineers and technology executives
- The workforce's attitude has to change since a lack of awareness might lead to a workforce that is very resistant to change if new technologies are not continuously followed and adopted.
- Make sure that safety procedures are followed while doing electrical installation tasks.

## Personal Imapct

**The delegate will be able to comprehend the following after successfully completing this 5-Day Mini MBA in Power, Electricity, and Industry Infrastructure**

**training course:**

- Function and features of power generating using renewable energy.
- Determine the advantages of wind and solar energy.
- Recognise the benefits of micro and smart grids.
- Learn about the newest grid connections and energy storage technologies.
- Acknowledge the arrival of digital substation.
- Understand how to maximise the security and dependability of digital technology.

## Who should attend?

**A broad variety of professions may benefit from this Course N Carry training course, but the following are particularly noteworthy:**

- Engineers in Electrical Power
- Technicians for Maintenance
- Electrical Supervisors
- Professionals in Engineering
- Department managers for electrical engineering

# Course Outline

# Day 1

### Synopsis of Renewable Energy and Conventional Power Generation

- The Essentials of Producing Thermal Power
- Fundamentals of Nuclear Power Production
- Switch to Producing Renewable Energy
- Features of Photovoltaic Cells and Solar Power
- Components and Functions of Wind Turbine Power Generation
- Hydropower and Geothermal Energy Production

# Day 2

### The Significance of Active Power, Reactive Power, and Apparent Power in Flexible AC Transmission Systems

- The Curve of Generator Capability
- Power factor effects and the value of reactive power
- The Flexible AC Transmission System's (FACTS) advantages
- Transformers for Instrumentation in Power Measurement
- Typical Problems with Power Quality

- The Effects of Triple Harmonics and Their Mitigation Strategies

# Day 3

### Distributed Energy Resources and the Transition to Smart Grids

- Smart Grid Architecture and Characteristics
- Optimising Smart Grids
- The function of artificial intelligence (AI) with smart grids
- Utilisation and Advantages of Microgrids
- Integration of Renewable Energy
- Energy Retention for Renewable Energy Sources

# Day 4

### Digital Substation: Smart Transformer Construction and Features

- Features of a Smart Transformer
- Smart Transformer for Distribution Network
- The merits and characteristics of the digital transformer
- Digital Transformers' Function in the Grid
- Architecture of Digital Substations
- Benefits of Renewable Energy and Digital Substation Integration

# Day 5

### Infrastructure for Reducing Carbon Footprint and Potential for Global Warming

- Specifications, Features, and Performance of Natural Esters
- Power transformers using oils derived from natural ester
- Transformer with Gas Insulation and SF6 Alternative
- Environmentally friendly Gas Insulated Substation
- New Switchgear for Vacuum Clear Air
- Final Question and Answer Session