

**Course Overview:**

This course provides theoretical and practical knowledge of the issues related to power quality and harmonics. The objective of the course is to familiarize attendees with the terminology and concepts to evaluate the quality of power in an electric power system, and allow them to identify the source of the problem. The effects of harmonics on various power system components and methods of reducing excessive harmonics will also be addressed. IEEE and IEC recommendations, along with National Electric Code requirements will also be discussed in some detail.

The course will help attendees identify power quality and harmonic problems, and to will provide them with tools and methods in order to avoid such problems either during design or during the normal and emergency operation of the electric power system

**Course Objective:**

- Develop a sound working knowledge of earthing and harmonics
- Gain practical knowledge of surge and transient protection
- Design electrical and electronic systems correctly by applying knowledge of harmonics and earthing principles
- Describe applications for the latest technologies in correcting earthing, harmonics, surge, and transient problems
- Troubleshoot electrical and electronic systems
- Isolate and rectify power quality problems

**Course Outline:**

- Introduction To Power Quality Analysis
- Industry Commitment To Power Quality
- Grounding
- Voltage Disturbances
- Mitigation Techniques
- Understanding Harmonics
- Sources Of Harmonics
- Effects Of Harmonics On Power System Components
- Harmonic Limits, Modeling, Filters & Measurements
- Calculating Harmonic Currents And Voltages In The System
- Capacitor Banks
- Solving Problems In Actual Systems
- Discussion And Wrap-Up

**Who Should Attend:**

Plant engineers, facilities engineers, consultants and all personnel involved in the operation and maintenance of electric power systems are strongly encouraged to attend this course. Additionally, supervisory personnel are also encouraged to attend in order to become aware of the subject.

**Training Language:**

EN / AR

**Training Methodology:**

- Presentation & Slides
- Audio Visual Aids
- Interactive Discussion
- Participatory Exercise
- Action Learning
- Class Activities
- Case Studies
- Workshops
- Simulation