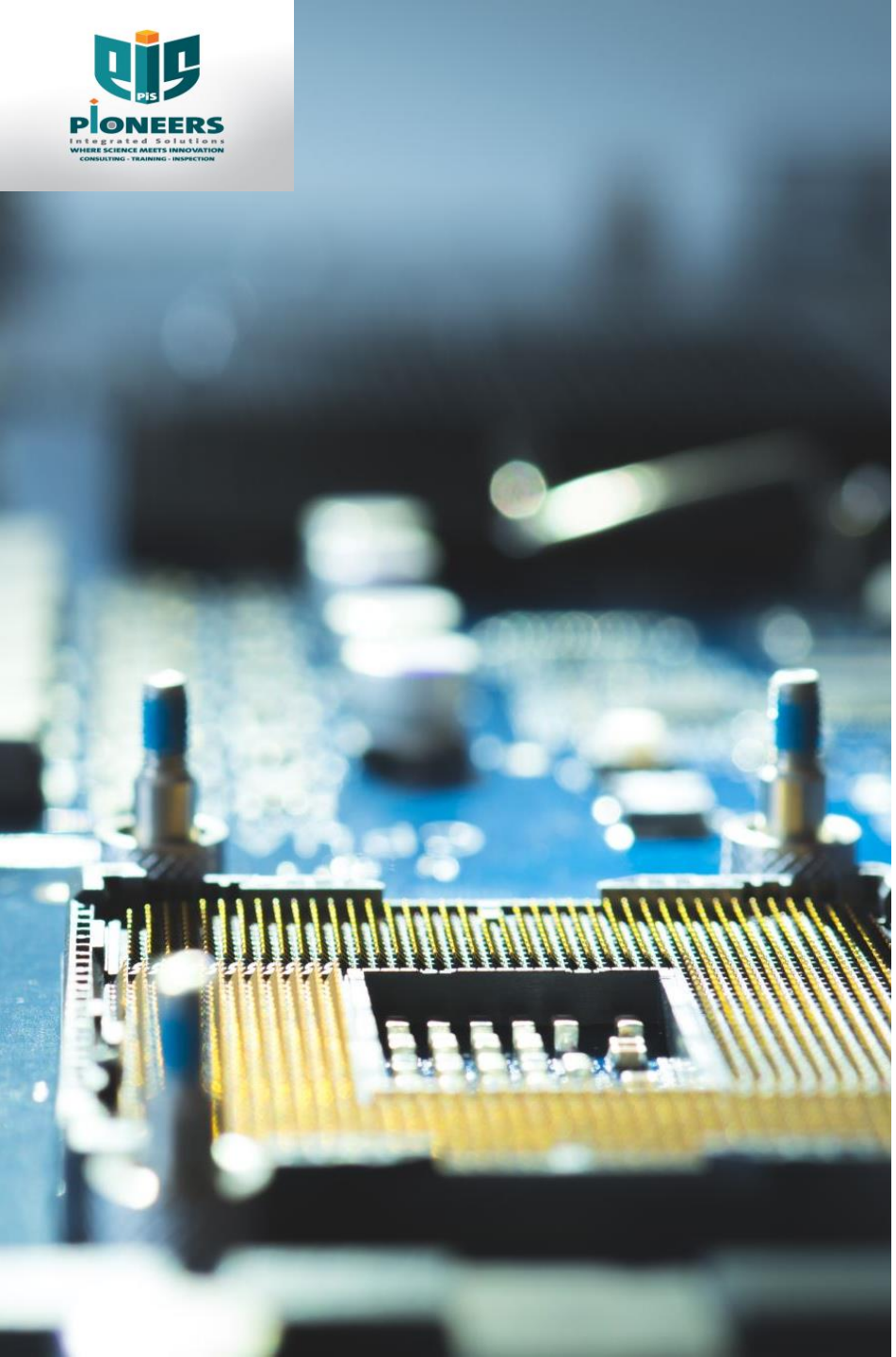

PIONEERS
Integrated Solutions
WHERE SCIENCE MEETS INNOVATION
CONSULTING - TRAINING - INSPECTION
Power Capacitors/Power Factor Correction- Applications, Switching Problems, Protection And Maintenance

# Course Description:

- Understanding of state-of-the-art power factor improvement equipment, namely power capacitors, is a prerequisite to assuring economical operation of electrical power systems. This course provides a thorough review of the application of power capacitors and capacitor banks. It covers fundamentals and theory regarding power capacitors and power factor correction, methods of calculation, specifying, controlling, protecting, installing, operating and maintaining power capacitors and capacitor banks. It includes detailed analysis of the capacitor application in electrical motor circuits and distribution systems. This course brings participants up to date on the application of capacitors and capacitor banks, answers questions, and gives participants hands-on experience in assessing and solving typical problems.

# Course objectives:

- After participating in this course, you will be able to analyze the power distribution system to determine the need for improvement of the power factor. You will be able to calculate energy cost savings associated with the installation of capacitor bank. You will gain the practical knowledge to be able to specify the size and configuration of capacitor bank and associated auxiliary equipment to suit your specific needs.



# Course Methods

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include:

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

# Course outline

- Basic Electrical Ideas and units on Capacitors and Power Factor.
- Resistance circuit, Inductance circuit, Capacitive circuit
- True, Reactive, and Apparent Power
- Description and basic operation of capacitors
- Calculation on capacitor circuits
- Applications of capacitors
- Theoretical fundamentals for Power Factor
- Causes and effects of poor Power Factor
- Means of Power Factor improvement or Reactive Power compensation
- Principle of Reactive Power compensation
- Installation of Power Factor correction capacitors
- Calculation for Power Factor Improvement
- Power Capacitor banks
- Application of Capacitor banks
- Capacitor connections.
- Capacitor switching operation.
- Impact of Capacitors on Power Quality
- Maintenance, Inspection and Repair on Capacitor bank installation
- Tests for Power Capacitors.
- Related international standards IEEE/IEC
- Typical checklist for general servicing and maintenance on Capacitors.
- Different Voltage Regulation Techniques