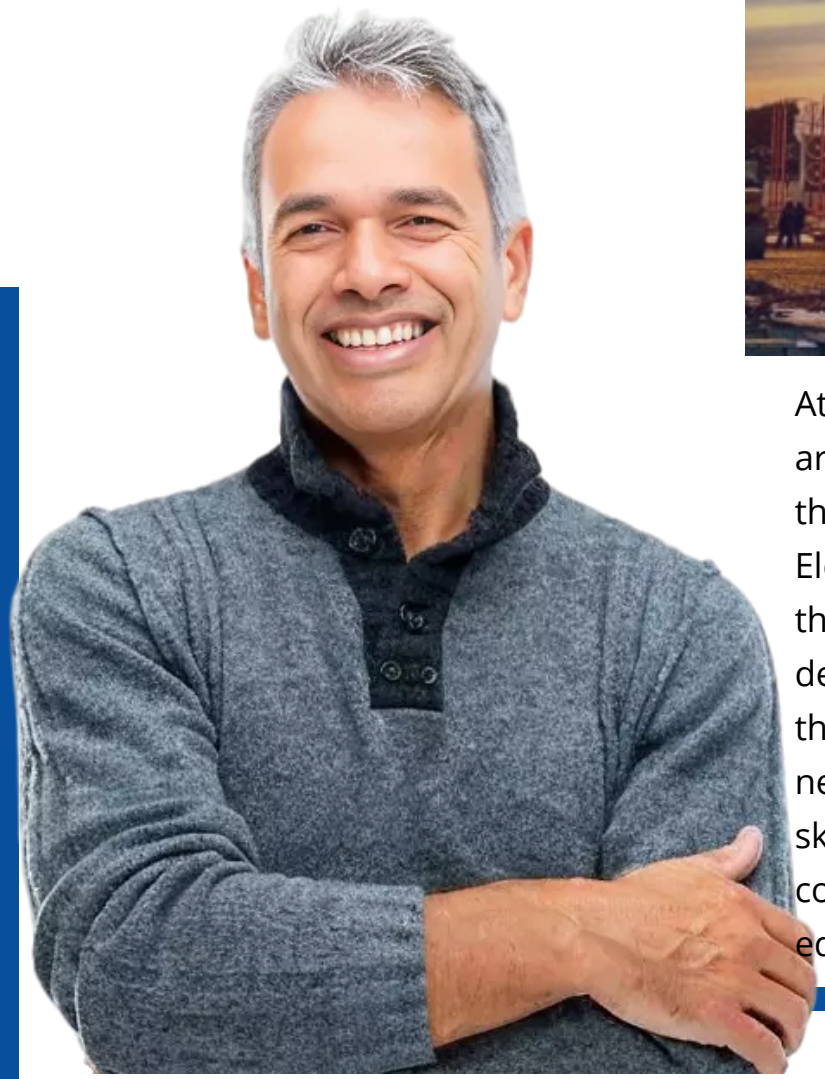
ENGINEERS' CERTIFICATION PROGRAM

Engineering Skills



At Electrical Learning Portal (ELP), we are dedicated to shaping the future of the electrical and MEP (Mechanical, Electrical, and Plumbing) industries through professional training and development. Our mission is to bridge the gap between the ever-evolving needs of employers and the dynamic skill set of engineers by providing comprehensive, industry-relevant education and training.

Degree + Skills = Career Growth

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ELECTRICAL QA/QC | LIVE

Welcome to the Electrical Learning Portal's QA/QC Training Program, meticulously crafted for aspiring Electrical Engineers. Embark on a comprehensive journey through the intricacies of quality management, starting with fundamental concepts, job descriptions, and general requirements in Module 1. This foundation is crucial for professionals seeking to excel in both project and corporate settings.

In Module 2, explore the expansive realm of power industries, delving into power system basics, electrical power generation, transmission, distribution, and the various codes and standards that govern the industry. This knowledge lays the groundwork for a robust understanding of the diverse facets of electrical engineering.

Module 3 takes a practical approach, focusing on quality system inspections, documentation, and procedures. From quality sampling methods to Project Quality Plans (PQP) and Factory Acceptance Tests (FAT) for electrical equipment, participants gain hands-on experience essential for effective quality assurance and control.

Modules 4 and 5 delve into the quantitative aspects of quality management. Understand Statistical Quality Control (SQC) concepts, including basic statistics, normal distribution, and Statistical Process Control (SPC). Master the application of the seven QC tools, such as Histograms and Pareto Charts, ensuring a well-rounded skill set for quality assessment.

Continuing through Modules 6 to 11, participants explore advanced topics such as ISO 9001:2015, Lean Six Sigma, Seven Wastages of Lean, Supplier Quality Management, Cost of Quality, and Business Process Reengineering. This comprehensive program aims to equip Electrical Engineers with the knowledge and skills needed to thrive in the dynamic and demanding field of electrical engineering.

TOPICS

Module 1: Introduction for an Electrical QA/QC Engineer

Chapter 1: Concept of Quality
Chapter 2: Job description of QA/QC Engineer for project and corporate
Chapter 3: Electrical QA/QC general requirement
Chapter 4: Understanding of Quality Control and its scope
Chapter 5: Understanding of Quality Assurance and its scope
Chapter 6: Data collection for QA/QC

Module 2: Introduction to Power Industries

Chapter 1: Electrical Power System Basics
Chapter 1: Electrical Power Generation System
Chapter 2: Electrical Power Transmission System
Chapter 3: Electrical power Distribution system
Chapter 4: Electrical Manufacturing, Construction, and Contracting Industries
Chapter 5: Types of Customers and End Users of Electrical Systems
Chapter 6: Various electrical codes and standards.

Module 3: Quality system inspections, documentations and procedures

Chapter 1: Quality sampling methods and inspections
Chapter 2: Overview of (PQP) Project Quality Plan for Electrical Transmission Line Installation Works
Chapter 3: ITP (Inspections and test procedures)
Chapter 4: Method Of Statement (MOS) for Electrical Installation Works.
Chapter 5: Standard Operating Procedures (SOP) and Work Instructions (WI) for installation and manufacturing of electrical Products and services.
Chapter 6: FAT (Factory acceptance test) of Medium voltage (MV) and High voltage (HV) electrical equipment.

Module 4: SQC (Statistical Quality Control) in quality assurance

Chapter 1: Definition of SQC. Difference between Statistical quality cont
control
Chapter 2: Different Stages of Quality. SIPOC diagram
Chapter 3: Classification of SQC
Chapter 4: Basic statistics
Chapter 5: Normal distribution
Chapter 6: Statistical Process Control (SPC)
Chapter 7: Causes of variation with example
Chapter 8: Process capabilities with example

Module 5: Seven QC (Quality Control) tools

Chapter 1: Introduction
Chapter 2: Histogram
Chapter 3: Check sheet
Chapter 4: Cause and effect diagram (Fishbone diagram)
Chapter 5: Box plot
Chapter 6: Pareto chart
Chapter 7: Control chart
Chapter 8: Scatter diagram

Module 6: ISO 9001:2015 Quality Management Systems

Chapter 1: Definition
Chapter 2: PDCA Cycle
Chapter 3: Comparison between ISO 9001:2015 and ISO 9001:2008
Chapter 4: Quality process approach: QMS evolution, quality gears, and processes
Chapter 5: Various Clauses of ISO 9001:2015 Quality Management System

- *Scope*
- *Normative reference*
- *Terms and definition*
- *Context of the organization*
- *Leadership*
- *Planning*
- *Support*
- *Operation*
- *Performance evaluation*
- *Improvement*

Module 7: Lean Six Sigma

Chapter 1: Introduction
Chapter 2: Objective
Chapter 3: Lean Vs Six Sigma
Chapter 4: Lean Manufacturing Tools
Chapter 5: SIPOC diagram
Chapter 6: Introduction to Six Sigma
Chapter 7: Six sigma bell curve and percentage of quality
Chapter 8: DPMO Vs PPM
Chapter 9: COPQ (Cost of poor quality)
Chapter 10: Six Sigma Methodology
Chapter 11: Six Sigma Technical Tools
Chapter 12: Summary

Module 8: Seven Wastages of Lean

Chapter 1: Introduction to Lean Management
Chapter 2: Framework of lean management & definition of waste
Chapter 3: Kaizen
Chapter 4: 5'S Management System
Chapter 5: 7 Wastages of lean management with example (TIM WOOD)

- *Transportation*
- *Inventory*
- *Motion*
- *Waiting*
- *Overproduction*
- *Over-processing*
- *Defects*

Module 9: SQM (Supplier Quality Management)

Chapter 1: Definition of supply chain and SQM (Supplier quality managem
Chapter 2: Phases of SQM and its Primary Key Indicator
Chapter 3: Basic framework of SQM and its processes.
Chapter 4: Six pillars of SQM
Chapter 5: Five key elements of effective SQM
Chapter 6: supplier selection criteria and strategies
Chapter 7: Managing supplier/buyer relationship
Chapter 8: E-business in lean supplier network
Chapter 9: Cost out Vs price down strategies

Module 10: COQ (Cost of Quality)

Chapter 1: Definition of COQ (Cost of quality)
Chapter 2: Total Cost of Quality and its Structure
Chapter 3: Cost of Good Quality (COGQ)
Chapter 4: Cost of Poor Quality (COPQ)
Chapter 5: COQ Curve and its Benefits
Chapter 6: Conclusion

Module 11: BPR (Business Process Reengineering):

Complimentary Module

Chapter 1: Definition
Chapter 2: Basic framework of BPR
Chapter 3: Steps in BPR and it's cycle.
Chapter 4: 7 principles of BPR
Chapter 5: Benefits of BPR with real life example
Chapter 6: Common use of BPR/Pro or cons of BPR
Chapter 7: Conclusion

Tools

o All Classes are Live via Google Meet or Zoom
o MS PowerPoint slides
o Calculation on Excel
o PDF Material

Benefits of the program

1. *Join the professional training*
2. *Understand the real world*
3. *Be a part of the Professional Engineers' Community*
4. ***Program Completion Certificates***
5. ***Join our engineers' WhatsApp Groups***

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