TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000677

PROD022 - Total Quality Management

In the ever-evolving oil and gas industry, maintaining high standards of quality is not just a competitive advantage but a critical necessity.



Learn from the Best in the Business!

Course overview

Foundation level

Why take this course

In the ever-evolving oil and gas industry, maintaining high standards of quality is not just a competitive advantage but a critical necessity. The Total Quality Management (TQM) in Oil and Gas Training Programme is a comprehensive 5-day course designed to equip professionals with the knowledge, tools, and strategies required to drive excellence in their organizations. This program integrates the principles of TQM with the unique challenges and opportunities of the oil and gas sector, ensuring relevance and applicability to real-world scenarios.

Participants will journey through a structured curriculum, beginning with the foundations of quality management, including the evolution of TQM, its pioneers, and essential methodologies. The course delves into the practical aspects of implementing quality frameworks such as ISO 9000, exploring the stages, benefits, and challenges associated with certification. Participants will master advanced quality tools and techniques, from Pareto charts and control charts to root cause analysis and the DMAIC problem-solving framework.

One of the core strengths of this programme is its focus on continuous improvement and cost optimization. Participants will learn to identify and manage costs of quality, optimize processes, and enhance service and product quality, all while fostering a culture of teamwork and leadership through quality circles and Kaizen initiatives.

Who it is for and how it helps

This course is designed for professionals in the oil and gas industry who are involved in quality management, process improvement, or operational excellence. Typical participants include:

- Quality Assurance and Quality Control (QA/QC) Managers
- Process Engineers and Production Managers
- HSE (Health, Safety, and Environment) Professionals
- Project Managers involved in TQM initiatives
- Supply Chain and Procurement Specialists seeking to enhance vendor quality
- Maintenance and Reliability Engineers
- Supervisors and Team Leaders responsible for implementing quality standards
- Professionals preparing for ISO 9000 certification audits
- Any personnel aiming to enhance operational efficiency and reduce costs through quality improvements

What you will learn

- Explain the principles, methods, and benefits of Total Quality Management (TQM) in the oil and gas sector

Course overview — continued

- Understand the historical development and evolution of quality concepts
- Apply ISO 9000 standards and other international quality frameworks to their organizations
- Analyze and address the requirements for TQM implementation
- Utilize tools such as Pareto charts, control charts, and root cause analysis to solve quality-related problems
- Develop and interpret data visualizations, including trend charts, histograms, and radar charts, for decision-making
- Lead Kaizen initiatives and implement Poka Yoke (Mistake Proofing) practices
- Employ DMAIC and 8-D frameworks to improve processes and resolve quality issues systematically
- Identify and manage prevention, appraisal, and failure costs to optimize operational expenses
- Align quality strategies with cost reduction and efficiency goals
- Establish and manage quality circles for organizational quality improvement
- Cultivate a culture of continuous improvement and quality leadership within teams
- Measure service quality using Servqual and product quality dimensions
- Develop and implement effective after-sales service strategies

Curriculum

Modules 01–04

01 Foundations of Total Quality Management

- Historical development of quality
- Definitions and principles of Total Quality Management (TQM)
- Contributions of TQM pioneers
- TQM system model and seven basic elements of TQM
- Importance of good quality in the oil and gas industry
- Consequences of poor quality: Product and service dimensions

02 Framework and Requirements of TQM

- Stages and methods of TQM implementation
- Requirements for TQM application in oil and gas
- Obstacles to implementing TQM and overcoming them
- Quality assurance systems: ISO 9000 and its importance
- ISO 9000 family and implementation stages
- Benefits of ISO 9000 certification

03 Tools and Techniques for Quality Improvement

- 7 classic tools of quality: Pareto chart, scatter diagram, control chart, flow chart, cause-and-effect fishbone, histogram, and check sheet
- Data visualization tools: 2D/3D pie charts, bar charts, column charts, trend charts, radar charts
- Advanced analytic methods: Cusum charts, ABC analysis, priority matrix
- Interrelationship diagram and fault tree analysis
- Timeline analysis and SIPOC analysis
- Root cause analysis, Five Why analysis, and 5W2H approach
- Quality planning tools: Affinity diagram, Kano model, and benchmarking

04 Problem Solving and Continuous Improvement

- DMAIC problem-solving framework
- Kaizen: Continuous improvement methodology
- Just in Time (JiT) and its application in oil and gas
- Poka Yoke (Mistake Proofing) techniques

Curriculum

Modules 04–06 · Module 04 — continued

- Robust design principles and contingency planning
- Zero defects approach and its significance in TQM
- Creativity techniques for quality improvement

05 Costs, Metrics, and Quality Assurance

- Prevention costs, appraisal costs, internal failure costs, external failure costs
- Costs of quality: Analysis and optimization
- TQM metrics: Servqual for service quality measurement
- Total Quality Pyramid and its application
- Advanced quality assurance frameworks: ISO 9004 and quality system components
- Integration of after-sales services in TQM
- DPA (Defects per unit) and AQL (Acceptable Quality Level)

06 Teamwork and Organizational Dynamics in TQM

- Quality circles and their role in TQM
- 8-D problem-solving system for team-based quality improvement
- Leadership in quality management
- Building organizational culture for quality excellence
- Case studies: Successful TQM implementation in oil and gas organizations

Participation and contacts

Joining the programme

Contact the Academy and quote course code 000677 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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