BOOST
THE LEADING TRAINING PROVIDER

Quality Management & Operational Excellence

Advanced Manufacturing Process Analysis

Course Introduction

The **Advanced Manufacturing Process Analysis** course offers a comprehensive exploration of advanced techniques for analysing and optimizing manufacturing processes. Delivered by BOOST, this course equips participants with the knowledge and tools to assess, improve, and innovate manufacturing processes to enhance efficiency, reduce costs, and improve product quality.

Through case studies, real-world examples, and hands-on practice, participants will learn to apply advanced methodologies such as Six Sigma, Lean Manufacturing, and Statistical Process Control (SPC) to diagnose process issues, identify opportunities for improvement, and implement data-driven solutions that lead to higher productivity and quality outcomes in manufacturing environments.

Target Audience

- Manufacturing engineers and production managers
- Process improvement specialists
- Quality control professionals
- Operations managers and supervisors in manufacturing industries
- Anyone interested in improving manufacturing processes and productivity

Learning Objectives

1. Understand and apply advanced methodologies such as Six Sigma and Lean Manufacturing for process improvement.
2. Analyse and assess manufacturing processes using statistical tools and techniques.

3. Identify process inefficiencies and bottlenecks to drive performance improvements.
4. Implement data-driven solutions to optimize manufacturing operations and product quality.
5. Apply Statistical Process Control (SPC) techniques to monitor and control process variations.

Develop and implement process optimization strategies to achieve operational excellence.

Course Outline

- **01 DAY ONE**

  Introduction to Manufacturing Process Analysis and Improvement Methodologies

  - Overview of manufacturing processes and the importance of process analysis
  - Introduction to Six Sigma, Lean Manufacturing, and other process improvement methodologies
  - Key concepts in manufacturing process improvement: Efficiency, waste reduction, and continuous improvement
  - Understanding process variation and its impact on manufacturing outcomes
- **02 DAY TWO**

  Statistical Process Control (SPC) and Data-Driven Analysis

  - Introduction to Statistical Process Control (SPC) for monitoring and controlling manufacturing processes
  - Key SPC tools: Control charts, process capability analysis, and Pareto analysis
  - Using statistical methods to identify process variability and potential defects
  - Case study analysis: Applying SPC in a real-world manufacturing scenario
- **03 DAY THREE**

  Lean Manufacturing Principles and Waste Reduction

  - The Lean Manufacturing philosophy: Principles, tools, and techniques

- Identifying and eliminating waste (Muda) in manufacturing processes: Value stream mapping, 5S, and Kaizen
- Lean tools for process optimization: Kanban, Just-in-Time (JIT), and Poka-yoke
- Case study: Lean implementation and its impact on manufacturing efficiency

• **04 DAY FOUR**

Process Flow Optimization and Bottleneck Analysis

- Analyzing and optimizing process flow in manufacturing systems
- Identifying and addressing bottlenecks in production lines
- Techniques for balancing production lines and improving throughput
- Introduction to Theory of Constraints (TOC) and its application in manufacturing

• **05 DAY FIVE**

Implementing Process Improvements and Sustaining Gains

- Strategies for implementing process improvements in real-world manufacturing environments
- Monitoring and measuring the success of process optimization efforts
- Maintaining improvements through continuous monitoring and feedback loops
- Developing a culture of continuous improvement in manufacturing organizations
- Course review and wrap-up

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 4, 2025	May 8, 2025	5 days	4250.00 $	KSA - Riyadh
Aug. 18, 2025	Aug. 22, 2025	5 days	4250.00 $	UAE - Dubai
Nov. 17, 2025	Nov. 21, 2025	5 days	4950.00 $	Spain - Madrid