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**Course Name**

# Advanced Manufacturing Process Analysis

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**Sector Name**

Quality Management & Operational Excellence

**Document Type**

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## Advanced Manufacturing Process Analysis

### Course Introduction

The Advanced Manufacturing Process Analysis course provides professionals with the knowledge and analytical tools required to evaluate, optimize, and improve modern manufacturing processes. As industries increasingly rely on data-driven decision-making and advanced production technologies, understanding how to analyze manufacturing processes is essential for improving productivity and operational efficiency.

This course focuses on manufacturing process evaluation, production optimization, quality control analysis, and performance improvement techniques. Participants will learn how to identify inefficiencies, reduce production waste, and enhance manufacturing system performance using advanced analytical methods.

By mastering advanced manufacturing process analysis, professionals can improve production workflows, support continuous improvement initiatives, and ensure consistent product quality. This course is ideal for manufacturing engineers, production managers, industrial engineers, quality specialists, and operations professionals seeking to enhance their expertise in manufacturing process optimization

## Advanced Manufacturing Process Analysis

### 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

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## Advanced Manufacturing Process Analysis

### Learning Objectives

- ✓ Understand and apply advanced methodologies such as Six Sigma and Lean Manufacturing for process improvement.
- ✓ Analyse and assess manufacturing processes using statistical tools and techniques.
- ✓ Identify process inefficiencies and bottlenecks to drive performance improvements.
- ✓ Implement data-driven solutions to optimize manufacturing operations and product quality.
- ✓ Apply Statistical Process Control (SPC) techniques to monitor and control process variations.
- ✓ Develop and implement process optimization strategies to achieve operational excellence.

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## Advanced Manufacturing Process Analysis

### 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

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## Advanced Manufacturing Process Analysis

### Course Outline

#### ✓ 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

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## Advanced Manufacturing Process Analysis

### Course Outline

#### ✓ 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

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## Advanced Manufacturing Process Analysis

### Course Outline

#### ✓ 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

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## Advanced Manufacturing Process Analysis

### Course Outline

#### ✓ 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

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## Advanced Manufacturing Process Analysis

### Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Aug. 24, 2026	Aug. 28, 2026	5 days	4250.00 \$	UAE , Dubai
Nov. 23, 2026	Nov. 27, 2026	5 days	4950.00 \$	Spain , Madrid
March 15, 2027	March 19, 2027	5 days	4250.00 \$	UAE , Abu Dhabi
May 23, 2027	May 27, 2027	5 days	4250.00 \$	KSA , Riyadh

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