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Learning Style: Virtual Classroom

Technology:

Difficulty: Advanced

Course Duration:

Lean Six Sigma Black Belt

About This Course:

The Lean Six Sigma Black Belt course is designed for professionals who are ready to lead complex process improvement projects and drive organizational excellence. This advanced-level program provides in-depth knowledge of Lean Six Sigma principles, tools, and techniques, with a strong focus on the DMAIC (Define,

Measure, Analyze, Improve, Control) methodology.

Course Objectives:

- History & evolution of Six Sigma

- Lean vs Six Sigma vs Lean Six Sigma

- Roles & responsibilities (Black Belt, Green Belt, etc.)

- Voice of the Customer (VoC)

- Business processes and performance metrics

- Project selection & prioritization

- Change management and team dynamics

- Project charters

- SIPOC diagrams

- High-level process mapping

- Stakeholder analysis

- Communication planning

- Process analysis and documentation

- Data collection planning

- Measurement system analysis (MSA)

- Basic statistics & capability analysis (Cp, Cpk)

- Root cause analysis (5 Whys, Fishbone)

- Hypothesis testing

- Regression and correlation analysis

- Failure Mode and Effects Analysis (FMEA)

- Brainstorming and solution development

- Design of Experiments (DOE)

- Pilot testing and risk analysis

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- Cost-benefit analysis

- Control plan development

- Statistical Process Control (SPC)

- Control charts and dashboards

- Project documentation and handover

- Sustaining improvements

Audience:

- Mid- to senior-level professionals seeking to lead process improvement initiatives

- Quality managers, operations managers, and project managers

- Engineers, analysts, and team leaders involved in performance optimization

- Green Belt certified professionals ready to advance to the Black Belt level

Prerequisites:

- A solid understanding of basic statistics and data analysis concepts

- Prior experience in process improvement or quality management (preferred)

- Completion of a Lean Six Sigma Green Belt certification (recommended)

- Proficiency in using Microsoft Excel or similar data analysis tools

- Strong analytical and problem-solving skills

Course Outline:

- Introduction to Six Sigma and the Role of a Black Belt

- Six Sigma Principles & Organizational Planning

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- Define Phase

- Measure Phase

- Analyze Phase

- Improve Phase

- Control Phase

- Exam Preparation and Project Presentation