Document Generated: 01/09/2026

Learning Style: Virtual Classroom

Technology:

Difficulty: Advanced

Course Duration: 5 Days

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

- 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

- Define Phase
- Measure Phase
- Analyze Phase
- Improve Phase
- Control Phase
- Exam Preparation and Project Presentation