Lean Six Sigma Black Belt Certificate

Learning objectives:
After this course, attendees will be able to:

- Lead efforts to execute the Lean Six Sigma methodology throughout an organization (business level, operations level, and process level)
- Develop a successful LSS program
- Apply advanced statistical methods and lean techniques to projects
- Design a LSS training program for your organization.

Outline

- Lean Six Sigma Review (DMAIC, waste)
- LSS Deployment and Management
    - Organization/Business Level
        - Strategic direction and key initiatives (SWOT, PEST, Hoshin Kanri/x-matrix, portfolio analysis)
        - Balanced scorecard and key performance measures including financial measures (hard costs) as well as soft costs
        - Communication of strategy and initiatives
        - Organizational change management including motivational (demotivational) techniques (reward/recognition), readiness assessments, and barriers
        - Benchmarking/MBNQA
        - Interactive relationships among business systems (measurement systems, process change impact)
        - Customer requirement (conflicting with others)
        - Supplier strategy
    - Operations Level
        - Potential project screening criteria and feasibility
        - Team formation for cross-functional teams (skills, expertise, influence, availability)
        - Conflict resolution
        - Measurement systems across the organization
        - Managing multiple projects
        - Gap analysis

- LSS Deployment and Management - Process Level
    - Selecting processes for application of LSS/business case (project charter)
    - Leading teams
    - Selecting team members
    - Managing progress and team function/group dynamics (facilitation, charter review)
    - Project management tools
        - Gantt chart
        - Toll-gate review
    - Ongoing evaluation (leading and lagging indicators)
- Kaizen and Kaizen blitz
- Statistical Methods
    - Statistical versus practical significance
    - Sampling and sample size
    - Distributions – hypergeometric, bivariate, exponential, lognormal, Weibull
    - Process capability and process performance indices
- Theory of Constraints
- Maintenance
    - Total Productive Maintenance (TPM)
    - Overall equipment effectiveness (OEE)
- Risk analysis (FMEA, impact vs. effect)
- Design for Six Sigma (DMADV), design for X (manufacturability, test, maintainability, …), robust design
- Statistical Methods
    - Non-normal data and transformation techniques
    - Multivariate tools – factor analysis, discriminant analysis, MANOVA
    - Nonparametric tests – Kruskal-Wallis, Mann-Whitney
    - Fractional factorial DOE
    - Screening DOE
- Training and certification
    - Effective training curriculum
    - Adult learning theory
    - Learning objectives
    - Training plans
    - Training material
    - Training delivery
    - Certification (test)