



SIX SIGMA BLACK BELT TRAINING

**Mastering Process Improvement
& Operational Excellence**

INTRODUCTION TO SIX SIGMA

- What is Six Sigma?
- History and Origin
- Importance in Quality Management
- Key Roles: White, Yellow, Green, Black, Master Black Belt



ROLE OF A BLACK BELT

- Responsibilities
- Skills Required
- Leadership in DMAIC Projects
- Mentoring Green Belts



SIX SIGMA METHODOLOGIES



- DMAIC: Define, Measure, Analyze, Improve, Control
- DMADV (For Design Projects)
- Comparison with Lean

DEFINE PHASE

- Project Charter
- Voice of Customer (VOC)
- SIPOC Diagram
- Stakeholder Analysis
- Problem Statement & Goal Statement



MEASURE PHASE

- Data Collection Plan
- Types of Data
(Continuous, Discrete)
- Measurement System
Analysis (MSA)
- Process Capability (C_p ,
 C_{pk})



ANALYZE PHASE

- Identifying Root Causes
- Fishbone Diagram
- 5 Whys
- Hypothesis Testing (t-test, ANOVA, Chi-Square)



IMPROVE PHASE



- Brainstorming Solutions
- Failure Modes and Effects Analysis (FMEA)
- Design of Experiments (DOE)
- Pilot Testing

CONTROL PHASE

- Control Plans
- Statistical Process Control (SPC)
- Control Charts (X-bar, R-chart)
- Project Closure & Handover



TOOLS USED IN SIX SIGMA

- Minitab
- Excel
- Value Stream Mapping
- Pareto Analysis
- Regression



SOFT SKILLS FOR BLACK BELTS

- Leadership
- Change Management
- Communication
- Team Building



THANK YOU PRIYA GROUP TEAM

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