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**IASSC CERTIFIED GREEN BELT - ICGB**

**OVERVIEW**

**ONLINE TRAINING BY KRISHNAJI PAWAR**

**LEED AP(BD+C),GSAS CGP,GCP,ISO 14001**

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MODULE

2

# The Basics of Six Sigma

KRISHNAJI PAWAR - CEO & FOUNDER

LEED AP(BD+C),GSAS CGP,GCP,ISO 14001

[WWW.BEYONDSMARTCITIES.IN](http://WWW.BEYONDSMARTCITIES.IN)



# IASSC CERTIFIED GREEN BELT - ICGB OVERVIEW

Six Sigma is a data-driven methodology and management philosophy that aims to improve business processes by minimizing variability and defects. Developed by Motorola in the 1980s, it focuses on achieving a process standard deviation that is six times smaller than the mean, resulting in a defect rate of only 3.4 defects per million opportunities (DPMO).

# Learning Objectives

- Introduction
- **The Basics of Six Sigma**
- Six Sigma and Organizational Goals
- Lean Principles in the Organization
- Design for Six Sigma (DFSS) Methodologies
- Certified Lean Six Sigma Green Belt Certification
- Summary and Resources
- ICGB Quiz\_Test Your Knowledge!



## INTRODUCTION

- Six Sigma is a data-driven methodology developed by Motorola in the 1980s to improve business processes by minimizing variability and defects.
- The term "Six Sigma" refers to achieving a process standard deviation that is six times smaller than the mean, resulting in a defect rate of only 3.4 defects per million opportunities (DPMO).

# HISTORICAL CONTEXT

- W. Edwards Deming and Joseph Juran, pioneers of quality management, laid the groundwork for Six Sigma.
- Bill Smith at Motorola popularized the term to enhance product quality and process efficiency.
- Companies like General Electric adopted Six Sigma in the 1990s, leading to substantial cost savings and improvements in quality.



# FUNDAMENTAL CONCEPTS

## Defining Quality

- The DMAIC Framework is used as a structured approach for process improvement.
- The framework consists of five phases: Defining, Measureing, Analyzing, Improving, and Controlling.
- Data is the backbone of Six Sigma, with statistical tools like Control Charts, Pareto Analysis, and Fishbone Diagrams used to identify root causes of defects.



# ROLES IN SIX SIGMA

- Six Sigma employs a hierarchical structure of roles, including Champion, Master Black Belt, Black Belt, Green Belt, and Yellow Belt.
- The principles of Six Sigma remain a vital tool for continuous improvement and sustainable success in an increasingly competitive environment.





# SIX SIGMA IMPLEMENTATION BENEFITS



- Increased productivity, efficiency, and effectiveness.
- Improved product and service quality and waste reduction.
- Reduced operating costs and process variation.
- Increased customer satisfaction and competitive advantage.
- Improved communication and employee engagement.
- Whether referred to as Operational Excellence, Zero Defects, Total Quality Management, or Continuous Improvement, the goal is to improve all aspects of the organization.
- Structured, data-driven approach using DMAIC and other methodologies.



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# CONTACT US



+91 6363032722



[info@beyondsmartcities.in](mailto:info@beyondsmartcities.in)



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