

JOURNEY TO SIX SIGMA BELTS

CERTIFIED SIX SIGMA – YELLOW BELT

CERTIFIED SIX SIGMA – GREEN BELT

CERTIFIED SIX SIGMA – BLACK BELT

Training Program



Due to high demands of Local and International Markets, the organizations are looking to optimize their products through Quality Management Systems, where Six Sigma methodologies and techniques are most helpful to ensure the betterment of the product's quality through qualitative and quantitative techniques.

This training program is equipped with all the certifications of Six Sigma with real time scenarios, case studies with complete statistical numerical analysis techniques.

The Trainers of the program have the extensive experience and exposure regarding the Six Sigma techniques and methodologies from Multi National Organization.

This unique program is offering first time in Pakistan and South Asian Countries, which would develop the participants for Local and International market and equipped them according to International Guidelines of Quality Management Systems.

This Program is ideally suited to following individuals who are:

- **Working Class who are involved in the Quality Management Systems**
- **Organization who would like to achieve the highest level of quality**
- **People who are looking a career job in field of quality management systems and would become a consultant in the six sigma field.**

Program is offered by: 3D Educators – Trainers & Consultants

Six Sigma Yellow Belt certification provide an overall insight to the techniques of Six Sigma, its metrics, and basic improvement methodologies. A yellow belt must know how to integrate Six Sigma methodologies for the improvement of production and transactional systems to better meet customer expectations and bottom-line objectives of their organization. A Yellow Belt typically has a basic knowledge of Six Sigma, but does not lead projects on their own. They are often responsible for the development of process maps to support Six Sigma projects. A Yellow Belt participates as a core team member or subject matter expert (SME) on a project or projects. In addition, Yellow Belts may often be responsible for running smaller process improvement projects using the PDCA (Plan, Do, Check, Act) methodology. PDCA, often referred to as the Deming Wheel, enables Yellow Belts to identify processes that could benefit from improvement. These smaller Yellow Belt projects often get escalated to the Green Belt or Black Belt level where a DMAIC methodology is used to maximize cost savings using Statistical Process Control. Six Sigma Yellow Belt training provides an introduction to process management and the basic tools of Six Sigma, giving employees a stronger understanding of processes, enabling each individual to provide meaningful assistance in achieving the organization's overall objectives. Our Six Sigma Yellow Belt certification also improves:

- The effectiveness of employees in their support role of Six Sigma
- Personnel buy-in of Six Sigma
- Day-to-day workplace activities

(Resulting in a reduction of cycle times, improved quality, and less waste)

An individual who has received Six Sigma Yellow Belt training has received introductory training in the fundamentals of Six Sigma. The Yellow Belt gathers data, participates in problem-solving exercises and adds their personal experiences to the exploration process. Not only do Yellow Belts gain the skills necessary to identify, monitor and control profit-eating practices in their own processes, but they are also prepared to feed that information to Black Belts and Green Belts working on larger system projects.

This nationally recognized Six Sigma Greenbelt training program encompasses all aspects of running a Six Sigma Greenbelt business; including management, service delivery, design, production and customer satisfaction. Six Sigma is one of the highest standards for companies and individuals to achieve. This interactive training provides the skills needed to master this highly valuable skill. All materials included.

This nationally recognized Six Sigma Black Belt certification training integrates Six Sigma Black Belt learning with hands-on data analysis. The Six Sigma Black Belt certificate course material provides an in-depth look at the Six Sigma Black Belt DMAIC problem-solving methodology, as well as deployment and project development approaches. All materials included.

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Program Details

Inauguration

The Training Program will be inaugurated by a senior member of 3D EDUCATORS

Program Structure

Duration of each class	3-Hour
Classes Per Week	2 Classes
Total Duration	144 Hours

Other Learning Activities:

Classroom Assignments	12
Presentations by Trainees	3

ABOUT THE PROGRAM DESIGNER

DR. MUHAMMAD SHAHEER WAQAR

PhD, MBA, MS,
Microsoft Partner
MCSE, MCDBA Certified
CISA, CISSP, PMP, A+, ITIL Certified
Educational Design Consultant
PRESIDENT OF 3D GROUP
CHIEF TECHNOLOGY OFFICER

Dr. Muhammad Shaheer Waqar as president of 3D Group and Educational Design Consultant of the forum of Leadership & Management Society has work enormously in the designing of this program. Due to his unique ideas is really creating the edge in the corporate market and make the organization more effective and efficient. He also creates the opportunity to individuals and organizations, which can get the benefits from this state of art program and become more productive.

We “3D EDUCATORS” Team are thankful and highly appreciated to Dr. Muhammad Shaheer Waqar who provided this wonderful accredited and recognized program for all managers for any sort of organization.

Journey to Six Sigma training certification is one of the remarkable and state of art program for organization and individuals and having the unique property within it. After this program the participant will equipped with all knowledge set regarding quality management and especially six sigma standards and also can be able to perform very effectively in the concerned department.



Program Syllabus

COURSE OUTLINE OF YELLOW BELT

I. Why Six Sigma?

- a. Definition and Graphical View of Six Sigma
- b. Comparisons Between typical TQM and Six Sigma Programs
- c. Origins and Success Stories

II. How to Deploy Six Sigma?

- a. Description of the Roles and Responsibilities
- b. Project Focus
- c. Overview of DMAIC Methodology

Six Sigma Yellow Belt certification provides an overall insight to the techniques of Six Sigma, its metrics, and basic improvement methodologies. Students will learn how to integrate Six Sigma methodologies for the improvement of production and transactional systems to better meet customer expectations and bottom-line objectives of their organization. It provides an introduction to process management and the basic tools of Six Sigma, giving employees a stronger understanding of processes, enabling each individual to provide meaningful assistance in achieving the organization's overall objectives.

Yellow Belt Certification Overview

Our Yellow Belt Certification Course covers the following topics:

- Six Sigma Implementation and Management
- Six Sigma Goals and Metrics
- Creating Customer Driven Organizations
- Training for Six Sigma

- Six Sigma Teams
- Selecting and Tracking Six Sigma Projects

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COURSE OUTLINE OF GREEN BELT:

I. Why Six Sigma?

- d. Definition and Graphical View of Six Sigma
- e. Comparisons Between typical TQM and Six Sigma Programs
- f. Origins and Success Stories

II. How to Deploy Six Sigma

- d. Description of the Roles and Responsibilities
- e. Project Focus
- f. Overview of DMAIC Methodology

III. DEFINE: Project Definition

- a. Define Objectives
- b. Work Breakdown Structure
- c. Pareto Diagrams
- d. Process Maps
- e. Matrix Diagrams
- f. Project Charters
- g. Reporting

IV. DEFINE: Project Scheduling

- a. Activity Network Diagram
- b. PERT Analysis
- c. GANNT Chart

V. DEFINE: Change Management/Teams

- a. Problems with Change
- b. Achieving Buy-In
- c. Team Formation, Rules, and Responsibility
 - i. Stages of Team Development
 - ii. Overcoming Problems

- d. Consensus Building Tools
 - i. Affinity Diagram
 - ii. Nominal Group Technique
 - iii. Prioritization Matrix

VI. MEASURE: Tools and Objectives

- a. Objectives
- b. Flowcharts
- c. Process Maps
- d. SIPOC
- e. Box-Whisker Plots
- f. Cause and Effect Diagrams
- g. Check Sheets
- h. Interrelationship Diagram
- i. Stem and Leaf Plots

VII. MEASURE: Establishing Process Baseline

- a. Enumerative v. Analytic Statistics
- b. Process Variation
- c. Benefits of Control Charts
- d. Requirements v. Control
- e. Control Chart Interpretation

VIII. MEASURE: X-Bar Charts

- a. Uses
- b. Construction and Calculations
- c. Assumptions
- d. Rational Subgroups
- e. Sampling Considerations
- f. Interpretation

IX. MEASURE: Individuals Data

- a. Uses
- b. Construction and Calculations
- c. Assumptions
- d. Sampling Considerations
- e. Interpretation
- f. Overview of Other Individuals Charts
 - i. Run Charts
 - ii. Moving Average Charts
 - iii. EWMA Charts
 - iv. CuSum Charts

X. MEASURE: Process Capability

- a. Histograms
- b. Probability Plots
- c. Goodness of Fit Tests
- d. Capability and Performance Indices
- e. Relative to Process Control
 - i. Interpretation
 - ii. Estimating Error

XI. MEASURE: Attribute Charts

- a. Uses
- b. Selection
- c. Construction and Calculations
- d. Sampling and Considerations

XII. ANALYZE: Lean Thinking

- a. Definition of Waste
- b. Analyzing Processes for NVA

- i. Cycle Effencies
- ii. Lead Time and Velocity
- c. Methods to Increase Velocity
 - i. Standardization
 - ii. Optimization
 - iii. Spaghetti Diagrams
 - iv. 5S
 - v. Level Loading
 - vi. Flow
 - vii. Setup Reductions

XIII. ANALYZE: Introduction to Regression Analysis

- a. Scatter Diagrams
- b. Linear Model
- c. Interpreting the ANOVA Table
- d. Confidence and Prediction Limits
- e. Residuals Analysis
- f. Overview of Multiple Regression Tools

XIV. IMPROVE: Tools and Objectives

- a. Improve Stage Objectives
- b. Tools to Prioritize Improvement Opportunities
- c. Tools to Define New Process Flow
- d. Tools to Define and Mitigate Failure Modes
 - i. PDPC
 - ii. FMECA
 - iii. Preventing Failures
- e. Reference to Tools for Defining New Process Levels

XV. CONTROL: Tools and Objectives

- a. Control Stage Objectives
- b. Control Plans
- c. Training
- d. Measuring Improvement

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COURSE CONTENT OF STATISTICS USED IN BLACK BELT COURSE

Learning Outcomes:

On completion of the course participants would be able to

LO1. Statistical applications in Six Sigma

LO2. Apply Six Sigma black belt methodologies at multiple aspects of professional life.

LO3. ANOVA and other advance statistical applications for problem solving

LO4. Identify the qualitative and quantitative aspects of problem solving tools distinctly.

Session	Session Topic
1	Basis statistical applications wrt Six Sigma
2	Measure of central tendencies with applications
3	Measure of Dispersions with applications
4	Correlation and regression with applications
5	Introduction to probability , permutation and combination
6	Population distributions with applications -1
7	Population distributions with applications -2
8	Progress Check Test
9	Sampling Distributions with applications - 1
10	Sampling Distributions with applications - 2
11	Testing of Hypotheses; Parametric and nonparametric hypotheses. Type I and Type II errors. Critical Region.

12	Parametric Hypotheses Tests: for one mean, equality of means. Testing the variance, equality of variances, significance of correlation coefficient, population proportion, equality of proportions.
13	ANOVA
14	ANOVA exercises
15	Jarque Bera , Chow test , Taghuchi Statistics
16	Certification exam (MCQs + Numerical)

COURSE CONTENT OF BLACK BELT

Week 1 Six Sigma Black Belt Training and Green Belt Training Topics

<ul style="list-style-type: none"> • Six Sigma Introduction • Six Sigma Project Definition • Project Selection Process • Six Sigma Deployment • Process Mapping • Input Prioritization Tools • Failure Mode Effect Analysis • Minitab 15 Introduction 	<ul style="list-style-type: none"> • Measurement Systems • Capability Analysis • Sample Size Selection • Statistical Process Control • Process Control Plan • Project Plan & Deliverable • Project Reviews • Homework
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Week 2 Six Sigma Black Belt Training and Green Belt Training Topics

<ul style="list-style-type: none"> • Week 1 Review in Class Project • Advanced Graphical Analysis • Multi-Vari Planning • Variation Trees and Funneling • Hypothesis Testing • Central Limit Theorem • Statistical Analysis Roadmap • Test for Mean with t-test 	<ul style="list-style-type: none"> • One Way ANOVA • Non-manufacturing Applications • Correlation and Regression • Multi-Vari Analysis • Process Control Plan • Project Plan & Deliverable • Project Reviews • Final Exam
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Week 3 Six Sigma Black Belt after Green Belt

<ul style="list-style-type: none"> • Week 1 and 2 Review Project • Multiple Regression • Advanced Multi-Vari • Attribute Measurements • Attribute Measurement 	<ul style="list-style-type: none"> • Introduction to DOE • Full Factorial Experiments • Full Factorial Simulations • Fractional Factorials Designs
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<p>Systems</p> <ul style="list-style-type: none"> • Sample Size Calculations • Six Sigma for Service • Managing Change 	<ul style="list-style-type: none"> • DOE Sample Size Selection • In class DOE Project • Project Planning & Deliverables • Project Reviews Measurement
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Week 4 Six Sigma Black Belt after Green Belt

<ul style="list-style-type: none"> • Design of Experiments Review • Blocking in Experiments • General Factorial Experiments • Six Sigma Residual Analysis • Non-Normal Data - Transformations • Non-Normal Data in Experiments • Sequential Experimentation • Response Optimization Designs • Multiple Response Optimization • Transactional Improvements 	<ul style="list-style-type: none"> • Simulations for Improvement • Applied Experimentation • Statistical Process Control • Mistake Proofing • Control Methods • Project Closure and Synergy • Class Project • Integration of Lean • Project Reviews • Final Exam
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TERMS & CONDITIONS

WITHDRAWAL FROM THE CERTIFICATION

Students are not allowed to withdraw from the CERTIFICATION. If a student cannot continue the CERTIFICATION his/her fee will be forfeited.

CONDUCT AND DISCIPLINE

A disciplinary action, leading to rustication, will be taken against students whose conduct is found objectionable at any time during the course of study. Reference will be made to 3D Educators code of conduct.

EVALUATION AND GRADING

The performance of students is evaluated through continuous observation of a student's performance in the CERTIFICATION – class participation, submission of assignments, quizzes and exercises.

The student will be examined through three hourly exams conducted at the midterm and a final exam at the end of the program. Total marks for passing the CERTIFICATION will be 60 out of a total of 100.

Students who do not meet the attendance or any other eligibility criteria will not be allowed to appear in the final examination.

The following grading plan will be applicable for the CERTIFICATION:

A	87 - 100
B+	81 -86
B	72 - 80
C+	66 - 71
C	60 - 65
F	below 60

Students who are unable to appear for the final exam are required to submit a written application stating the reason for not appearing for the exam. 3D Educators reserves the right to approve or deny such applications. If approved, the student will be allowed to

sit for the exam within one month. Failure to do so, the student will be resubmit the examination fee and sit the future schedule exam. Without passing of the exams no certification will be awarded.

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ONLINE LIVE CLASSES FACILITY AVAILABLE

- Instructor Led Training
- Real Time Presentations
- Interactive Classes
- Complete Notes and Other Stuff shall be provided through our Secure Student Login Member's Area
- For Online Live Classes, you may please download the Admission Form through our website <http://www.3deducators.com>. Fill it properly and attached the required document along with Picture and send back to info@3deducators.com with scanned fee submitted voucher in the bank.
- For Pakistan you may submit the fee at any MCB Branch with the title of "3D EDUCATORS-TRAINERS & CONSULTANTS".
- If you are outside Pakistan then you may transfer via Bank to Bank or any western union, Fast Track, Money Gram or else International Transfer Body.
- After Admission, if you don't have GMAIL Account then you are requested to kindly make one GMAIL Account and shared it info@3deducators.com. Then further correspondence shall be made by our institute official.
- Extra Bandwidth Charges shall be incurred.
- If you are outside country or city then extra courier charges shall be incurred for Certificate.

PRECAUTIONARY MEASURES

- ✓ During Classes, you are requested to make sure that you are in isolated room, where no noise should be there except your voice.
- ✓ Kindly Switch Off your Cell Phone during the class, because it will disturb the quorum of class.
- ✓ If you have taken the admission in the course online, ethically it is recommended and suggested that you only avail this facility.
- ✓ Recording of Lectures are not allowed at your end.

This world is emerging and growing in the 21st Century very rapidly because of latest and remarkable technologies and its advancement. Due to advancement of technology, we 3D EDUCATORS offer Live Interactive class sessions.

3D EDUCATORS believe on Information Technology and its systems. Now you can also avail this facility at your home.

DISTANCE NOT MATTER

You can join in the live classes Sessions of **3D EDUCATORS – TRAINERS & CONSULTANTS** from anywhere of the world.

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MANAGEMENT

3D EDUCATORS – TRAINERS & CONSULTANTS