

## **CERTIFIED LEAN SIX SIGMA – BLACK BELT Training Program**



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.

**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**

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## Program Details

### Inauguration

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

### Program Structure

Duration of each class	2-Hour
Classes Per Week	2 Classes
Total Duration	48 Hours

### Other Learning Activities:

Classroom Assignments	4
Presentations by Trainees	1

### About the Program Designer & Instructor

The “Six Sigma – Black Belt” Program has the international designed certification and will be conducted by the huge and vast experience trainer and consultant.

They trainers are foreign qualified and having the degree & certification of Ph.D, MBA, MSc.

As Consultant & Senior Trainers the team of trainers from Engineering side we **3D Educators – Trainers & Consultants** would not compromise on the faculty.

## **Program Syllabus**

### **COURSE OUTLINE:**

### **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.

<b>Session</b>	<b>Session Topic</b>
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	<b>Progress Check Test</b>
9	Sampling Distributions with applications - 1
10	Sampling Distributions with applications - 2

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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	<b>Certification exam (MCQs + Numerical)</b>

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## **COURSE CONTENT OF BLACK BELT**

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

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

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

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

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

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



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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](mailto: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](mailto: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.

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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.

**CONTACT US:**

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**(Get the Admission Form)**

[Admission Form](#)

**MANAGEMENT**

**3D EDUCATORS – TRAINERS & CONSULTANTS**

FINAL CERTIFICATION AWARDED BY IMRTC – USA

SAMPLE CERTIFICATE

**CERTIFICATE  
OF EXCELLENCE**

IMRTC USA Recognized

**CERTIFICATION**



*This is to Certify That*  
**Mr. Danny Jones Wales**  
*has successfully met the certification requirements as outlined in  
IMRTC content and the policies adopted thereunder; hereby grants the certification of*

**Certified OHSAS 18001 Lead Implementation**

Student ID: IM864532201

Date of Commencement: May 4, 2014

Date of Ending: July 4, 2014



*Cheryzel Rhodes*

Principal of Institute

Director Affiliations and Official Affairs

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Partnership ID: AS5588322\_Pakistan  
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**CERTIFICATE OF AUTHORIZATION**

**CERTIFICATE  
OF AUTHORIZATION**

IMRTC USA Recognized

**CERTIFICATE OF AUTHORIZATION**



*This is to Certify That IMRTC Authorized*

**3D EDUCATORS - TRAINERS & CONSULTANTS**

*to work as Training & Research Partner in capacity of  
PARTNER THROUGH PAKISTAN CHAPTER  
for the scope of activity shown below in accordance with the applicable rules of  
the IMRTC. The use of this certification and the authority granted by this  
Certificate of Authorization are subject to the provision of agreement set  
forth in the application.*

*The validity of this certificate is for Two Years from the date of Issuance  
and will increase according to the performance  
Issuance Date: 16 Aug 2015*

*Cheryyel Rhodes*

Director Affiliations and Official Affairs



Chapter ID: AS2933770

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