

Lean Six Sigma Black Belt

Week 1: Define Phase

<i>Monday, May 24</i>	<i>Tuesday, May 25</i>	<i>Wednesday, May 26</i>	<i>Thursday, May 27</i>	<i>Friday, May 28</i>
SIX SIGMA FUNDAMENTALS & PHILOSOPHY: DMAIC vs. DFSS	LEAN OVERVIEW, SS vs. LEAN, LEADERSHIP	LEADERSHIP & STRATEGY	TEAMWORK – CHANGE ACCELERATION	PROJECT SELECTION – SIX SIGMA QUALITY FUNCTION/DEPLOYMENT
<u>Class 9 a.m.-12:30 p.m.</u> <ul style="list-style-type: none"> ▪ Welcome and Program overview ▪ What is Six Sigma ▪ Why Six Sigma ▪ DMAIC Overview <p style="text-align: center;">.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p> <u>Class 1:30-5 p.m.</u> <ul style="list-style-type: none"> ▪ Intro to DFSS ▪ Six Sigma vs. DFSS ▪ Lean overview 	<u>Class 9 a.m.-12:30 p.m.</u> <ul style="list-style-type: none"> ▪ Six Sigma vs. Lean ▪ Six Sigma vs. TQM ▪ SS organizational structure <p style="text-align: center;">.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p> <u>Class 1:30-5 p.m.</u> <ul style="list-style-type: none"> ▪ How to be a Change Agent ▪ Core Competencies of Lean Black Belt ▪ Advancing Lean in a learning organization 	<u>Class 9 a.m.-12:30 p.m.</u> <ul style="list-style-type: none"> ▪ Leadership & Strategy ▪ VMGO <p style="text-align: center;">.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p> <u>Class 1:30-5 p.m.</u> <ul style="list-style-type: none"> ▪ Change Acceleration Process & Workout 	<u>Class 9 a.m.-12:30 p.m.</u> <ul style="list-style-type: none"> ▪ Teamwork & Effective Communication <p style="text-align: center;">.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p> <u>Class 1:30-5 p.m.</u> <ul style="list-style-type: none"> ▪ Six Sigma & Lean as a coach and teacher 	<u>Class 9 a.m.-12:30 p.m.</u> <ul style="list-style-type: none"> ▪ Project Identification, Selection, Definition & Scoping, Cause & Effect Matrix <p style="text-align: center;">.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p> <u>Class 1:30-5 p.m.</u> <ul style="list-style-type: none"> • Setting terminology and expectations for the Lean Black Belt • Review of Key Principles • Seeing Value / Creating Value
INSTRUCTOR: Doug Montgomery	INSTRUCTOR: Al Filardo	INSTRUCTOR: Al Filardo	INSTRUCTOR: Al Filardo	INSTRUCTOR: Dan Shunk

Lean Six Sigma Black Belt
Week 2: Measure/ Analyze Phase

<i>Monday, May 31</i> MEMORIAL DAY HOLIDAY- NO CLASS	<i>Tuesday, June 1</i> PROCESS MAPPING – VSM – DATA COLLECTION	<i>Wednesday, June 2</i> MEASUREMENT SYSTEMS – AGREEMENT ANALYSIS	<i>Thursday, June 3</i> 7 BASIC & MODERN TOOLS FOR QUALITY IMPROVEMENT	<i>Friday, June 4</i> CONTROL CHARTS - FAILURE MODE & EFFECT ANALYSIS
	<p><u>Class 9 a.m.-12:30 p.m.</u></p> <ul style="list-style-type: none"> ▪ Process mapping ▪ Value Stream Mapping <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ Descriptive Statistics ▪ Data collection strategy <p>INSTRUCTOR: Dan Shunk-AM Doug Montgomery-PM</p>	<p><u>Class 9 a.m.-12:30 p.m.</u></p> <ul style="list-style-type: none"> ▪ Measurement System Analysis ▪ Accuracy, precision <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ Gage R&R study ▪ Process Capability analysis <p>INSTRUCTOR: Doug Montgomery</p>	<p><u>Class 9 a.m.-12:30 p.m.</u></p> <ul style="list-style-type: none"> ▪ 7 BASIC tools for Quality improvement <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ 7 MODERN tools for Quality improvement <p>INSTRUCTOR: Doug Montgomery</p>	<p><u>Class 9 a.m.-12:30 p.m.</u></p> <ul style="list-style-type: none"> ▪ Control Charts – Introduction <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ Failure Mode & Effect Analysis ▪ System, Design, Service, process <p>INSTRUCTOR: Connie Borrer</p>

Lean Six Sigma Black Belt
Week 3: Analyze/Improve

<i>Monday, June 7</i>	<i>Tuesday, June 8</i>	<i>Wednesday, June 9</i>	<i>Thursday, June 10</i>	<i>Friday, June 11</i>
SIX SIGMA METRICS – MEASURING SERVICE QUALITY: SERVQUAL	ANOVA, ANOM – HYPOTHESES TESTING	REGRESSION ANALYSIS	LOGISTIC REGRESSION – CONJOINT ANALYSIS	NON-PARAMETRIC ANALYSIS – TIME/SERIES FORECASTING
<p><u>Class 9 a.m.-12:30 p.m.</u></p> <ul style="list-style-type: none"> ▪ Lean Six Sigma Metrics <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ Measuring Service Quality SERVQUAL 	<p><u>Class 9 a.m.-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ Hypothesis Testing & Confidence Interval <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30pm-5pm</u></p> <ul style="list-style-type: none"> ▪ Hypothesis Testing & Confidence Interval – Cont’d 	<p><u>Class 9 a.m.-12:30 p.m.</u></p> <ul style="list-style-type: none"> ▪ ANOVA ▪ ANOM <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ Linear regression analysis 	<p><u>Class 9 a.m.-12:30 p.m.</u></p> <ul style="list-style-type: none"> ▪ Multiple regression analysis <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ Binary logistic regression 	<p><u>Class 9 a.m.-12:30 p.m.</u></p> <ul style="list-style-type: none"> ▪ Conjoint analysis ▪ Dealing with Non-normal Data <p>.....</p> <p style="text-align: center;">Lunch 12:30-1:30 p.m.</p> <p>.....</p> <p><u>Class 1:30-5 p.m.</u></p> <ul style="list-style-type: none"> ▪ Non-parametric data analysis
INSTRUCTOR: Dr. Gary Waissi	INSTRUCTOR: Dr. Connie Borrer	INSTRUCTOR: Dr. Gary Waissi	INSTRUCTOR: Dr. Connie Borrer	INSTRUCTOR: Dr. Connie Borrer

Lean Six Sigma Black Belt
Week 4: Improve/Control Phase

<i>Monday, June 14</i>	<i>Tuesday, June 15</i>	<i>Wednesday, June 16</i>	<i>Thursday, June 17</i>	<i>Friday, June 18</i>
DISCRETE EVENT SIMULATION- INTRODUCTION TO DOE	CLASSICAL DOE VS. TAGUCHI METHOD - FFE	2 ^K FACTORIAL DESIGN – FMEA – MISTAKE PROOFING	SPC – 5S – CONTROL PLAN	LEVERAGING PROJECT RESULTS – TEAM RECOGNITION
<u>Class 9 a.m.-12:30 p.m.</u>	<u>Class 9 a.m.-12:30 p.m.</u>	<u>Class 9 a.m.-12:30 p.m.</u>	<u>Class 9 a.m.-12:30 p.m.</u>	<u>Class 9 a.m.-12:30 p.m.</u>
<ul style="list-style-type: none"> ▪ Time-series & forecasting <p style="text-align: center;">.....</p> <p style="text-align: center; color: red;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p>	<ul style="list-style-type: none"> ▪ Design of Experiments (DOX) <p style="text-align: center;">.....</p> <p style="text-align: center; color: red;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p>	<ul style="list-style-type: none"> ▪ Full Factorial Experiment ▪ Fractional Factorial Experiment <p style="text-align: center;">.....</p> <p style="text-align: center; color: red;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p>	<ul style="list-style-type: none"> ▪ Robust Design for Six Sigma <p style="text-align: center;">.....</p> <p style="text-align: center; color: red;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p>	<ul style="list-style-type: none"> ▪ SPC Variable Data <p style="text-align: center;">.....</p> <p style="text-align: center; color: red;">Lunch 12:30-1:30 p.m.</p> <p style="text-align: center;">.....</p>
<u>Class 1:30-5 p.m.</u>	<u>Class 1:30-5 p.m.</u>	<u>Class 1:30-5 p.m.</u>	<u>Class 1:30-5 p.m.</u>	<u>Class 1:30-5 p.m.</u>
<ul style="list-style-type: none"> ▪ Discrete event simulation 	<ul style="list-style-type: none"> ▪ DOX – cont'd 	<ul style="list-style-type: none"> ▪ Introduction to Response Surface Methodology 	<ul style="list-style-type: none"> • SPC (Attribute data) • SPC (Variable data) • Mistake Proofing 	<ul style="list-style-type: none"> ▪ Leveraging Project results ▪ LESAT
INSTRUCTOR: Dr. Gary Waissi	INSTRUCTOR: Dr. Douglas Montgomery	INSTRUCTOR: Dr. Douglas Montgomery	INSTRUCTOR: Dr. Douglas Montgomery	INSTRUCTOR: Dr. Douglas Montgomery - AM Dr. Dan Shunk-PM

**Lean Six Sigma Black Belt
Professional Certification Program
Week 4: Improve/Control Phase-Continued**

Monday, June 21

**HOW TO SUSTAIN SS –
INTEGRATION W/
OPERATIONAL
EXCELLENCE**

Class 9 a.m. -12:30 p.m.

- **Team recognition**
- **How to sustain results**

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Lunch 12:30-1:30 p.m.
.....

Class 1:30-5 p.m.

- **Integration with other Operational Excellence approaches**

**INSTRUCTOR:
Dr. Dan Shunk**