

**The University of Toledo**  
College of Business Administration  
**Executive Center for Global Competitiveness**

**SIX SIGMA GREEN BELT TRAINING**

### **What is Six Sigma?**

A term coined by Motorola to express process capability in parts per million. A Six Sigma Process generates a maximum defect probability of 3.4 parts per million (PPM), when properly controlled.

### **What are the Course Objectives?**

- To build a cadre of Six Sigma practitioners equipped to conduct or participate in project improvement teams.
- To identify and develop “knowledgeable internal resources” to become future Black Belts.
- To learn the basic concepts so that they can pass the Green Belt Certification Test.
- To identify and eliminate chronic problems and costly inefficiencies.
- To be able to improve the overall productivity and profitability of your organization.

### **Why train my people in Six Sigma?**

Six Sigma training teaches a rigorous application of practical, proven quality management principles that provide an organization with the tools, techniques, resources, culture and business focus needed to:

- Maximize customer value by delivering outstanding quality consistently
- Minimize your operational costs by dramatically reducing waste and inefficiencies

### **What will class participants be able to do?**

- Function as a contributing member or leader of an effective, project improvement team.

- Apply diagnostic tools and basic, statistical techniques in a real project, using a statistical software package.
- Achieve significant results that impact the bottom-line and increase customer satisfaction.

### **What’s the difference between a Black Belt and a Green Belt?**

A **Black Belt** is a process improvement team leader who is trained and “certified” in all Six Sigma methodologies and advanced statistical tools. S/he is a change agent within the organization.

A **Green Belt** is a Six Sigma team participant who has mastered the basic skills, and is capable of forming and facilitating Six Sigma teams on projects which do not require rigorous statistical analysis, i.e. they lead their own teams to exploit the opportunities of “low-hanging fruit” through data collection, analysis, and process mapping.

### **How do I choose the right candidates?**

Green Belt candidates should possess important and vital information (tribal knowledge) about your work processes. Benefits to the company are realized only when this information is transformed into “actionable knowledge.” The Green Belt course provides candidates with a structured methodology and problem-

solving tools to address business improvement projects and “harvest” their knowledge by applying both basic and intermediate quality tools within this methodology.

### **What qualities do I want in the candidates I choose?**

People who:

- Understand that the “customer” is the final judge of product and service quality.
- Have a passion for doing things better, and who are self-motivated.
- Will challenge the status quo, are intelligent risk-takers, and will be comfortable leading change.
- Can effectively communicate to all levels within your organization.
- Have broad business knowledge; can explain the linkage between projects and desired business results.
- Can be taught to manage projects.
- Have a basic, technical aptitude, and are analytical thinkers.
- Can be taught to be a team leader and facilitator.
- Are motivated by producing tangible financial results for the business.

*Contact Carrie Herr, director of ECGC, if you have questions about this program or if you would like to schedule onsite training at your organization by calling 419-724-2591 or via email at [carrie.herr@utoledo.edu](mailto:carrie.herr@utoledo.edu).*

# SIX SIGMA GREEN BELT TRAINING

## PROGRAM AGENDA

<u>SESSION I: Define</u>	<u>SESSION II: Understand</u>	<u>SESSION III: Improve</u>
<p><b>DAY 1: Overview and Introduction to Six Sigma Philosophy</b></p> <ul style="list-style-type: none"> <li>History, basic concepts and approach</li> <li>Process vs. Functional Management</li> <li>Project Planning and Management – Six Sigma roles and responsibilities</li> <li>Change leadership and team effectiveness</li> <li>Project selection, initial project definition and scoping</li> <li>Identifying project stakeholders</li> <li>Introduction to the DMAIC Model</li> </ul> <p><b>DAY 2: Define and Validate the Business Opportunity</b></p> <ul style="list-style-type: none"> <li>Linkage to business strategy</li> <li>Re-validating customer feedback and CTQ requirements</li> <li>High Level “SIPOC” Process Mapping</li> <li>Evaluating the current measurement system / process performance metrics</li> <li>Defining the financial benefits to all stake holders</li> <li>Detailed Process Maps</li> <li>Team Launch with Executive Sponsor</li> <li>Introduction to Basic Statistics</li> </ul> <p><i>Assignment: Select project, team members and conduct team launch</i></p>	<p><b>DAY 3: Measurement – Basic and Intermediate Quality Tools and Six Sigma Analytical Concepts</b></p> <ul style="list-style-type: none"> <li>Process analysis and concepts surrounding measuring outputs, elements of the process and inputs</li> <li>Measurement System Analysis - Gage R&amp;R</li> <li>Probability, variation and statistics</li> <li>Collecting and summarizing data</li> </ul> <p><b>DAY 4: Analyzing Process Capability</b></p> <ul style="list-style-type: none"> <li>Designing and conducting process capability studies</li> <li>Calculating process performance and specification</li> <li>Process capability indices</li> <li>Process performance indices</li> <li>Short-term vs. long-term capability</li> <li>Non-normal data transformations</li> <li>Process capability for attribute data</li> <li>Multi-vari studies</li> <li>Measuring and modeling relationships between variables</li> <li>Fundamental concepts of Hypothesis Testing</li> </ul> <p><i>Assignment: Summary of findings, pareto of root causes and proposed solutions</i></p>	<p><b>DAY 5: Improvement and Introduction to Design of Experiments</b></p> <ul style="list-style-type: none"> <li>Lean Enterprise Concepts and Lean Tools for Control</li> <li>DOE Terminology</li> <li>Planning and organizing experiments</li> <li>Design principles</li> <li>Ranking and implementing solutions</li> </ul> <p><b>DAY 6: Control and Continuous Process Improvement</b></p> <ul style="list-style-type: none"> <li>Control methods</li> <li>Statistical Process Control</li> <li>Quality function deployment</li> <li>Failure mode effects analysis</li> <li>Design for manufacturability</li> <li>Implementing a Process Control Plan</li> <li>Mistake proofing tools and methods</li> <li>Review, evaluate and document all process changes</li> <li>Measurement of results and reporting of project completion</li> <li>Continuous process improvement</li> </ul> <p><u>Adult Learning Process:</u></p> <ul style="list-style-type: none"> <li>Concept introduction</li> <li>Experiential exercise</li> <li>Concept debrief and process summary</li> <li>Apply concept via case study and workplace project</li> </ul>

### Class Requirements:

- A work-related project to work on during class and for homework assignments, approved by their management.
- A laptop computer loaded with MINITAB®. MINITAB® is Six Sigma statistical software. It will be made available through the university discount program for approximately \$25.00 for the semester.

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