

Lean Six Sigma Green Belt Certification



COLLEGE OF ENGINEERING
INTEGRATIVE SYSTEMS + DESIGN
UNIVERSITY OF MICHIGAN

PROFESSIONAL CERTIFICATION PROGRAM

Get Ready to Unlock the Power of Lean and Six Sigma

Learn how to integrate Lean and Six Sigma to turn your organization into a process improvement powerhouse. You'll increase your ability to effectively identify, frame, and solve problems to continuously improve quality, cost, and delivery/time in our Lean Six Sigma Green Belt Certification Program.

Learn more and register for upcoming courses at:
isd.engin.umich.edu/LeanSixSigmaGreenBelt



Green Belt Participants Receive Free QE Tools Software

The Lean Six Sigma Green Belt course includes a copy of QE Tools statistical analysis software. QE Tools is a highly functional, user friendly, Excel-based add-in tool designed specifically for Six Sigma. Students can use QE Tools to apply the various problem-solving tools and statistical analysis methods for their Lean Six Sigma project. The principal architects of the QE Tools software, Dr. Patrick Hammett and Dr. Luis Garcia-Guzman are both actively involved in the University of Michigan's Six Sigma Programs. Dr. Hammett is the primary developer of the University of Michigan's Lean Six Sigma Program. This is an Excel tool that will make your job much easier!

Who Should Attend

This program will benefit a wide array of professionals in both manufacturing and transactional areas who are interested in learning how to effectively combine Lean and Six Sigma tools and techniques and apply them in the DMAIC problem-solving approach.

Program Prerequisites

A basic understanding of statistical analysis methods is recommended including:

- Basic Microsoft Excel Skills
- Basic Statistics

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What People are Saying About U-M Lean Six Sigma

"Not only was this course thought provoking, but I had a great deal of fun as well."

"It was great to have the analytical tools necessary to quantify some of the improvement opportunities and make sure we are working on the right things"

"This course has many strengths. The facilitators, the tools, and the in-depth walk through of data analysis were beneficial."

"Instructors were very knowledgeable and did a great job communicating the theories and concepts."



Program Objectives

Increase your capability to effectively identify, frame, and solve problems for the continuous improvement of quality, cost, and delivery/time. At the completion of the course, you will be able to:

- Understand the power of the DMAIC problem solving process
- Quantitatively assess the current state of a process
- Map a process using SIPOC, Process Mapping, and Value Stream Mapping
- Apply basic graphical tools to identify mean and/or variation concerns
- Identify and eliminate non-value added waste in business processes
- Apply quick improvement tools including 5S, Standardized Work, Visual Management, and Source Inspection/Mistake Proofing
- Understand Little's Law and its implications for improving process flow through improved work cell/process layout, one-piece flow, pull systems, and process leveling
- Apply Cause-Effect Diagrams and FMEA to identify and resolve process failure modes
- Apply basic stratification analysis techniques and Pareto Drill Down Analysis to decompose process variation
- Install methods of control to sustain process improvement activities
- Manage a Rapid Process Improvement/Kaizen Event

Instructor



Pat Hammett, Ph.D.

Dr. Patrick Hammett is the Lead Faculty for the University of Michigan College of Engineering's Six Sigma Programs and teaches related Quality and Statistical Analysis Method courses for the Integrative Systems + Design Division.

As lead instructor for live and online Six Sigma training, including Lean-Six Sigma Green Belt, Black Belt, Master Black Belt, and Design for Six Sigma courses, Dr. Hammett has taught over 10,000 students and mentored hundreds of continuous improvement and student research projects.

Program Components

Define

- Linking Metrics to VOC and VOB
- Identifying Classic Forms of Waste
- Identifying Opportunities and Project Charters
- Process Maps (SIPOC, Swim Lane, Process Mapping Diagram)

Measure

- Value Stream Mapping
- Understanding Data and Measuring
- Current State (Processing Time and Yield)
- Exploring Data Patterns
- Basic Data Collection, Sampling, and Graphical Analysis Tools (Run Chart, Histogram, Box Plot)
- Descriptive Statistics
- Rolled Yield Throughput Analysis (Percent Value-Add versus Rolled Yield)

Analyze

- Qualitative Process Analysis and FMEA Analysis
- Cause and Effect Diagrams
- Stratification Analysis (Grouping Variables, Bar/Pie Charts, Pareto Analysis and Drill Down, Multiple Box Plots, Scatter Plot)

Improve

- Quick Improvement Tools
- 5S Process
- Standardized Work, Mistake Proofing, Visual Aids
- Process Flow Improvement
- Little's Law, Batch Reduction/One Piece Flow
- Setup Reduction
- Simple Pull Systems
- Simplified Process/Cell Layout
- Volume/Mix Leveling and Takt Time

Control

- Process Control Methods
- Standardized Work, Visual Controls, Source Inspection/Mistake Proofing, Preventative Maintenance
- Managing Kaizen
- Continuous Improvement Events

Program Details

Certificate

Green Belt Certification requires successful completion of in-class exercises and a final exam along with completion of a pre-approved project.

How to Register

Visit our Lean Six Sigma Green Belt program web page at isd.engin.umich.edu/LeanSixSigmaGreenBelt or send an email to MEonline@umich.edu or call (734) 647-7200.

2015 Program Dates

- August 24–28
 - October 12–16
- Ann Arbor, Michigan

Degrees of Success

Whatever your professional dreams, you'll be a step ahead with exceptional graduate degree programs offered through ISD. These programs are immediately useful and relevant and some can be completed entirely online.

Visit our website at isd.engin.umich.edu to learn more.

Customized Programs

Our professors and industry experts are available to collaborate with you by tailoring programs to meet your specific organizational needs and presenting them at a location of your choice.

For more information, contact us at (734) 647-7200 or MEonline@umich.edu.



About Michigan Engineering and Integrative Systems + Design

The University of Michigan's College of Engineering was founded in 1853. Today, Michigan Engineering and its academic departments rank in the top ten in their respective areas (U.S. News and World Report). The faculty's ongoing research and industry consultation in engineering contribute to Michigan's strength and impact on professional development. Michigan Engineering's research expenditures for fiscal 2014 totaled \$217.9 million, placing it in the forefront of collegiate engineering research in the U.S.

Integrative Systems + Design (ISD) (formerly known as Interdisciplinary Professional Programs), a division of Michigan Engineering, offers credit courses to students on campus and at locations around the world. Recognized as a global leader in online education in addition to offering on campus programs, ISD provides lifelong learning to technical professionals, and has served more than 100,000 with intensive short courses, conferences, professional certifications, and online advanced degree and certification programs.

ISD responds to the needs of industry, healthcare, government, the military, and non-profit organizations with specialized education programs.

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Questions? Email meonline@umich.edu

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