

Lean Manufacturing



COLLEGE OF ENGINEERING
INTEGRATIVE SYSTEMS + DESIGN
UNIVERSITY OF MICHIGAN

PROFESSIONAL CERTIFICATE PROGRAM

You Can Dramatically Reduce Time from Customer Order to Product Delivery

Lean manufacturing is based on observations of the Toyota Production System (TPS), a philosophy and set of methods for dramatically reducing time from customer order to delivery of a higher-quality product, with less cost, space, and inventory. This program will teach you how to provide your customers with what they want, when they want it.

Learn more and register for upcoming courses at:

isd.engin.umich.edu/LeanManufacturing



See Measurable Results in Just 10 Days



One of the Longest Running University-Based Lean Training Programs in the World

We have trained more than 3,300 individuals in nearly 15 years. Past clients include Harley Davidson, UTC (Pratt), Moog, Greatbatch Medical, Schlumberger, Tenneco, Steelcase, and others.

Outstanding Faculty

Experienced in academia and industry, instructors Dr. Yavuz Bozer, Professor of Industrial and Operations Engineering and Dr. Izak Duenyas, Professor of Manufacturing Management, Professor of Technology and Operations, and Professor of Industrial and Operations Engineering are leading experts in Lean Manufacturing.

Hands-On Practice and Real World Examples

You will learn by doing practical, hands-on simulations and in-class exercises. Case studies from real companies are used to demonstrate tools and concepts.

Instructors



Yavuz Bozer

Professor of Industrial Operations Engineering, College of Engineering.



Izak Duenyas

Ford Motor Company Co-Director of the Joel Tauber Institute for Global Operations, Professor of Technology and Operations, Stephen M. Ross School of Business and Professor of Industrial and Operations Engineering, College of Engineering.

For a full listing of program instructors, please visit our website: isd.engin.umich.edu/LeanManufacturing.

Program Components

Each two-week program contains core program categories all beginning with a one-day required Overview of Lean Manufacturing session. The remainder of the program is comprised of three core categories: Lean System Design, Supporting Lean Tools and Methods, and Leadership and Team Management Tools and Methods. Each category contains multiple modules. The modules taught vary for each program.

Introduction

Overview of Lean Manufacturing

Lean System Design Value Stream Mapping

- Design of Pull
- Factory Layout for Lean Manufacturing
- The Physics of Lean (using science to evaluate and improve manufacturing systems)—two days
- Build to Order

Supporting Lean Tools and Methods

- Cell Analysis and Design
- Implementing Kaizen Bursts
- Material Handling for Lean
- Designing Standardized Work and Job Instruction Training
- Lean Rapid Plant Assessment

Leadership and Team Management Tools and Methods

- Integrating Six Sigma in Lean Systems
- Leading the Change to Lean
- Accounting and Measurement for Lean Manufacturing
- Developing and Leading Work Groups

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Program Details

Certificate

A non-credit certificate of professional achievement in Lean Manufacturing from the University of Michigan College of Engineering will be awarded upon successfully completing the ten-day program and passing three online exams.

How to Register*

Visit our Lean Manufacturing program web page at isd.engin.umich.edu/LeanManufacturing, send an email to isd-answers@umich.edu or call (734) 647-7200.

Upcoming Program Dates

- June 13–17, 2016
- July 11–15, 2016

- August 22–26, 2016
- September 19–23, 2016

- November 7–11, 2016
- December 5–9, 2016

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 isd-answers@umich.edu.

Exclusive Learning Tools

The **Robby Robot Lego Factory** simulation is used to demonstrate hands-on Lean concepts. The simulation moves from traditional push manufacturing to pull systems while key concepts such as 5S and one-piece flow are implemented. Additional tools and design challenges are used in the program for in-class, hands-on training.



What People are Saying

“So impressed by the enthusiasm, motivation, and excitement by the instructors...”

“Instructors are all great.”

“Awesome course. Very inspirational.”

Program Benefits

Upon successfully completing this program, you will:

- Understand the history, philosophy and core methodologies of Lean Manufacturing
- Learn to value stream map the current state of a product flow
- Become able to develop a future state map of Lean systems
- Learn to create continuous flow through manufacturing cells
- Develop the leadership techniques necessary to actively drive change and Lean initiatives
- Earn a non-credit certificate of professional achievement in Lean Manufacturing from the University of Michigan

Who Should Attend

This program will benefit any manufacturing, production, purchasing and supply chain professional. Over 9,000 participants have received a Lean Manufacturing Certificate. Program alumni represent a variety of industry sectors:

- Aerospace
- Automotive
- Computer
- Defense
- Furniture
- Glass
- Government
- Logistics
- Plastics
- Semiconductors
- Shipbuilding
- Steel
- Telecom
- Tire
- Tool and Die



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.

For more information about ISD, visit isd.engin.umich.edu

Questions? Email isd-answers@umich.edu

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