

MICHIGAN
MANUFACTURING
TECHNOLOGY
CENTER



M A N U F A C T U R E S M A R T E R .

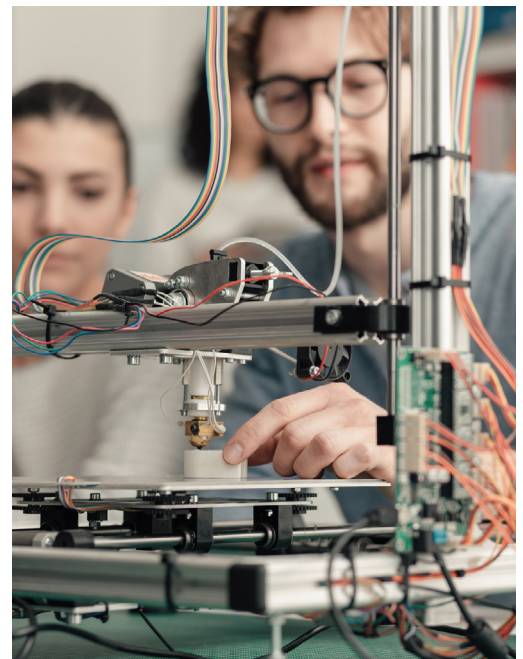
CERTIFICATE COURSE CATALOG

CYBERSECURITY • FOOD • GD&T
BLUEPRINT READING • LEADERSHIP • MARKET RESEARCH
PROJECT MANAGEMENT • LEAN • QUALITY MANAGEMENT
SALES DEVELOPMENT • SIX SIGMA
WORKFORCE ENGAGEMENT

2019•2020

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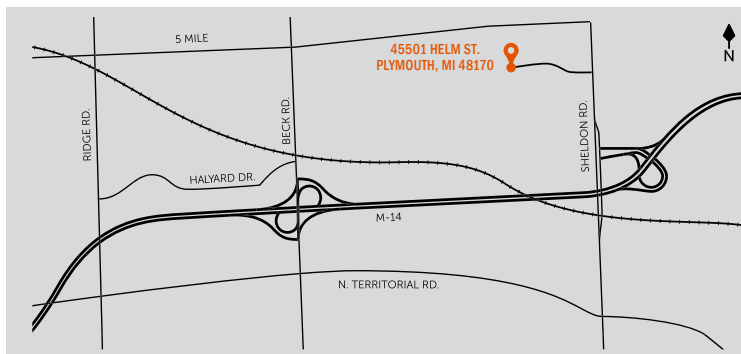
This booklet reflects certificate courses offered by the Michigan Manufacturing Technology Center. For a complete schedule of courses with dates for 2020, visit The-Center.org after September 1, 2019. All courses listed in this catalog include a certificate upon completion.

WHO WE ARE

Since 1991, the Michigan Manufacturing Technology Center has been consulting with Michigan's small and medium-sized manufacturers on how to compete and grow. We've assembled a team of experts over the years who are passionate about what they do and don't stop until the job is done. We've worked with thousands of manufacturers to diversify, get lean, and stay relevant. By continuing to work on projects with the same amount of passion, we will do our part to ensure the future of Michigan manufacturing for decades to come.

Today, the Michigan Manufacturing Technology Center is driving innovation and best practices to keep up with changes in the global economy through consulting services such as sustainability and workforce training, expertise in technology implementation, website development, and more. No other organization in the state of Michigan has the people, the experience, or the breadth of resources that we provide. We're strongly committed to our mission of working with manufacturers to thrive and prosper.

TRAINING WILL BE HELD AT: 45501 HELM ST. IN PLYMOUTH, MI UNLESS OTHERWISE NOTED.



ON-SITE TRAINING

In the pursuit of empowering employees and businesses with invaluable training opportunities, The Center offers customizable, on-site training courses covering Operational Excellence, Business Growth, Workforce Skill Development, and Supply Chain Optimization. For more information about services available at your organization, call 888.414.6682.

NEARBY LODGING

For students needing overnight accommodations, The Center has partnered with various hotels in the area. We hope you'll take advantage of one of the many choices near our Plymouth, Mich. location. To search nearby hotels, visit The-Center.org.

CANCELLATION/RESCHEDULING POLICY

ALL CANCELLATION AND RESCHEDULING CHANGES ARE SUBJECT TO THE FOLLOWING CONDITIONS:

- All cancellations and course rescheduling must be done in writing via email at events@the-center.org. All online registrations must be **paid via credit card/PayPal only**.
- Any course registration canceled 15 calendar days or more prior to original course date will receive a full refund **less** a \$100.00 administrative fee.
- Any course registration canceled less than 15 calendar days prior to original course date, as well as NO SHOWS, will forfeit all fees.
- Any rescheduling requests must be received at least 15 calendar days or more prior to original course date. A \$100.00 administrative fee will be applicable to all date changes.
- Any rescheduling requests occurring in less than 15 calendar days prior to original course date will be subject to an administrative fee of 50% of the course fee.



EMPLOYEE TRAINING: HOW IT AFFECTS YOUR COMPANY'S REPUTATION & YOUR BOTTOM LINE

The ongoing skilled trades employee shortage is causing many manufacturers to hire from outside of the industry, bringing in people without manufacturing skills or backgrounds. To ease workers' transitions into a manufacturing environment, a strong training program is essential. This is especially critical now as millennials make up a large part of the available workforce, and 87% of millennials view professional development and career growth as very important. To show your company is interested in investing in its employees, training is the answer.

In addition, providing ongoing training to workers contributes to both employee engagement and productivity as their skills are enhanced and efficiencies are improved. This can greatly impact your bottom line, as companies that invest in employee training achieve a 24% higher profit margin than those who don't.

With so much at stake, most companies cannot afford to neglect training for workers. Consider, for example, the following benefits that come from training:

- **Training reduces stress and builds confidence.** Whether someone is completely new to a manufacturing environment, or simply trying to learn a new process within the facility, the effectiveness of their training will determine how well they perform. In fact, 74% of workers stated that lack of training was the biggest hurdle in achieving their full potential at work. By gaining additional guidance and understanding through training, workers will be set up for success as they can more confidently approach their jobs.
- **Improved confidence leads to better job satisfaction and production quality.** When workers are confident in their abilities, they become more engaged. This

heightened engagement not only improves worker happiness, but also can have massive impacts on quality and productivity.

- **Job satisfaction leads to improved employee retention.** To ensure talent stays within your company, training can help. As you continue to invest in the skills of workers, their job satisfaction increases, thus eliminating their desire to look elsewhere for work. With 40% of workers leaving their jobs within the first year due to poor training, this aspect cannot be ignored.
- **Employee retention leads to more favorable company reviews.** By demonstrating that you care about your workers and investing in their professional development, workers will be much more likely to view your company in a favorable way. This will be reflected in employee surveys and workplace culture.
- **Favorable reviews attract more workers to your company.** When workers are happy with their company, they will likely spread the word to others – in person or on review sites such as Glassdoor and Indeed. By establishing a strong reputation as a company that invests in workers and wants them to grow and succeed, hiring efforts will be supported as candidates will view your company in a more favorable and desirable way.

A properly trained employee feels better about the job they are doing and produces quality work. When they produce quality work, they are more engaged in their job and motivated to improve the business as a whole. And just as one bad apple can spoil the basket, the opposite also is true: *happiness and engagement are contagious.*



CYBERSECURITY

IMPROVING INFORMATION SECURITY THROUGH RISK MANAGEMENT

In the current age of cyber crime, the information that is important to our business is continually at risk, and a cybersecurity/information security incident can be devastating. It is vitally important that each business understand and manage the risks to their information, systems and network that support their business.

This class provides participants with the means to identify and mitigate information security risks using the NIST Cybersecurity Framework. By utilizing the five primary framework categories (Identify, Protect, Detect, Respond, Recover) participants will learn how to identify information that needs to be protected, improve processes to reduce risk, identify if the information has been compromised and learn how to recover from these compromises.

1 day of class | \$495/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Dec. 11, 2019
- April 13, 2020
- Dec. 10, 2020
- Feb. 28, 2020 (Kalamazoo)
- Aug. 31, 2020



FOOD

FOOD PROCESSING SKILLS DEVELOPMENT

Food Processing Skills Development training is designed for students who are either new to the food processing environment or those who want to strengthen their understanding of food processing. This hands-on class provides a foundation for core food safety skills, understanding of current food safety regulations, process improvement skills and problem-solving techniques.

1 day of class | \$395/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- May 8, 2020

FOREIGN SUPPLIER VERIFICATION PROGRAM (FSVP)

Gain the knowledge to implement the requirements of the "Foreign Supplier Verification Programs for Importers of Food for Humans and Animals" regulation of the U.S. Food and Drug Administration. This regulation implements the provisions of the 2011 Food Safety Modernization Act.

1 ½ days of classes | \$595/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM/8:00 AM-12:00 PM)

- Feb. 27-28, 2020
- July 30-31, 2020

PREVENTIVE CONTROLS QUALIFIED INDIVIDUAL (PCQI)

To comply with new Food Safety Modernization Act (FSMA) guidelines, all food processing facilities are required to have someone within the organization PCQI certified. A PCQI is required to prepare and oversee the implementation of the facility's Food Safety Plan in compliance with FSMA requirements. Course topics include Food Safety Plan Development, Hazard Analysis & Preventive Controls, Verification & Validation Procedures, Corrective Action and Food Allergen Preventive Controls.

2 days of classes | \$895/person

SESSIONS AVAILABLE (8:00 AM - 6:00 PM)

- Jan. 22-23, 2020
- May 19-20, 2020
- Sept. 1-2, 2020



ON-SITE TRAINING ONLY

WANT TO SCHEDULE A COURSE AT YOUR LOCATION? CALL 888.414.6682.

GD&T/BLEUPRINT READING

BLUEPRINT READING (CEU Credits: .7)

How to interpret a technical drawing is an essential skill to anyone involved in the manufacturing industry, especially prior to learning GD&T. This Blueprint Reading course is designed for those who need an introduction to drawing interpretation.

1 day of class | \$395/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Feb. 5, 2020 (Kalamazoo)
- Feb. 7, 2020
- April 17, 2020
- July 20, 2020
- Oct. 19, 2020
- Dec. 7, 2020

GD&T COMPREHENSIVE

Participants will learn to:

- Evaluate tolerances for size, form, orientation, & location
- Interpret feature control frames for each GD&T symbol
- Determine correct datum usage
- Calculate “bonus” tolerance for MMC and LMC
- Apply geometric tolerances to drawings
- Determine the virtual condition to ensure assembly
- Explain “composite” tolerancing for position and profile

2 days of classes | \$795/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Feb. 25-26, 2020
- May 14-15, 2020
- Aug. 6-7, 2020
- Nov. 17-18, 2020

GD&T FUNDAMENTALS

Learn the importance of the GD&T system, proper identification and call out of datum features, and the effect of modifiers, especially MMC. Attendees will also learn how GD&T saves money over traditional tolerances and how to interpret the 14 symbols.

1 day of class | \$395/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 20, 2020
- March 23, 2020
- June 15, 2020
- Sept. 14, 2020



TOLERANCE STACKS ANALYSIS

After learning GD&T concepts, many participants find they need a methodical way of adding tolerances into an overall stack-up analysis. The Tolerance Stacks program is designed for engineers and those who work with stacks. While there is no standard way to do stacks, a spreadsheet method is introduced which allows for both traditional plus/minus tolerances and geometric tolerances. MMC “bonus” and “shift” tolerances are covered.

2 days of ON-SITE TRAINING | \$4,000

(min. of 6, max. of 12 participants – additional \$50/participant for material)

LEADERSHIP & PROJECT MANAGEMENT

PRACTICAL APPROACH TO PROJECT MANAGEMENT (CEU Credits: 2.1)

This course focuses on the discipline of initiating, planning, executing, controlling and closing the work of a team to achieve specific goals and meet specific success criteria. After attending this course, learners will be able to understand the project manager’s role in supporting strategic objectives that contribute to the bottom line. Gain leadership skills and business intelligence tools and techniques required to meet project requirements. The target audience includes project managers, general managers, plant managers, engineers and quality, supply chain and information technology staff in all industries.

3 days of classes | \$1,800/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Dec. 6/13/20, 2019
- Feb. 14/21/28, 2020
- Feb. 25-27, 2020 (Kalamazoo)
- April 17/24 & May 1, 2020
- May 11-13, 2020 (Troy)
- June 5/12/19, 2020
- Aug. 14/21/28, 2020
- Sept. 22-24, 2020 (Kalamazoo)
- Oct. 9/16/23, 2020
- Dec. 4/11/18, 2020

SUPERVISOR SKILLS (CEU Credits: 2.8)

Do you have an employee with leadership potential or a newly promoted supervisor or foreman and want to give them practical management training? This is the class you need. Get equipped with the knowledge and skills to thrive in today’s management environment. Learn how to identify:

- Various leadership styles
- Different behavioral characteristics and determine the best method of relating to each type
- Communication barriers and how to overcome them
- How to manage and maximize available time and decrease non-productive activities

4 days of classes | \$975/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 7/9/14/16, 2020
- Feb. 11/13/18/20, 2020
- Feb. 24/26 & March 2/3, 2020 (Troy)
- March 10-11 & 17-18, 2020 (Kalamazoo)
- March 31 & April 2/7/9, 2020
- April 27/29 & May 4/6, 2020 (Troy)
- May 5/7/12/14, 2020
- June 2/4/9/11, 2020
- Aug. 11/13/18/20, 2020
- Sept. 10/11/17/18, 2020 (Kalamazoo)
- Oct. 20/22/27/29, 2020



ON-SITE TRAINING ONLY

WANT TO SCHEDULE A COURSE AT YOUR LOCATION? CALL 888.414.6682.

LEADERSHIP & PROJECT MANAGEMENT

SUPERVISOR SKILLS 2.0 – SUSTAINED LEADERSHIP PROGRAM (CEU Credits: 1.8)

Good leadership is not just characterized by the ability to motivate a group toward a common goal—it's the ability to cross over from being someone employees must follow to someone they want to follow. The Center's 18-hour Supervisor Skills 2.0 course will further equip participants with the knowledge and skills needed to become effective leaders. The participants in this interactive course will be acquainted with additional leadership skills necessary to relate to subordinates, peers and their managers in a productive and efficient manner. Topics covered include:

- Power of Influence
- Crucial Accountability
- Knowing Your Social Style
- Exploring Learning Styles

Prerequisite: The Center's Supervisor Skills (CEU Credits: 2.8) course

3 days of classes | \$975/person

SESSIONS AVAILABLE (9:00 AM - 4:00 PM)

- April 21-23, 2020
- June 23-25, 2020 (Kalamazoo)
- Nov. 10-12, 2020

“*I didn't realize all the aspects that went into being a good leader. The Center's Supervisor Skills course changed my perspective on how I'm doing my job and how to deal with people.*”

DEREK F., BLANKING LEAD

LEAN PRINCIPLES & TECHNIQUES



5S APPLICATION TRAINING

The 5S program for the shop floor is a good starting point for a Lean manufacturing improvement activity. Participants will brainstorm methods for removing additional constraints from the manufacturing process in a specific model area within your organization. Learn the basic principles of 5S and successful implementation, the importance of an effective work environment, how to sustain change, and how to overcome issues associated with 5S.

1 ½ days of ON-SITE TRAINING | \$3,000
(min. of 5, max. of 7 participants)

5S/VISUAL MANAGEMENT & PULL SYSTEMS

Over time, most workplaces become cluttered with outdated and unnecessary information. This course provides the tools needed to clear the clutter and create a visual workplace where there is a place for everything. Learn how to transform a factory into a well-organized operation where messages concerning product quality, productivity, schedule and safety are accurately delivered.

1 day of class | \$495/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- | | |
|------------------|-----------------|
| • Jan. 16, 2020 | • Feb. 25, 2020 |
| • March 19, 2020 | • April 3, 2020 |
| • May 7, 2020 | • July 22, 2020 |
| • Aug. 13, 2020 | • Oct. 15, 2020 |

A3 PROBLEM SOLVING

Use problem solving tools to assist in the continual improvement process with emphasis on creating and implementing a Lean Business Strategy. Gain the knowledge to confidently measure and improve your processes through data driven decision making. An exercise in understanding and creating an A3 report is included.

½ day of class | \$295/person

SESSIONS AVAILABLE (8:00 AM - 12:00 PM)

- | | |
|----------------------------------|------------------------------|
| • Jan. 28, 2020 | • Feb. 26, 2020 |
| • March 18, 2020 (Troy) | • March 31, 2020 |
| • April 22, 2020 | • April 24, 2020 (Kalamazoo) |
| • May 19, 2020 | • July 23, 2020 |
| • Aug. 25, 2020 | |
| • Sept. 18, 2020 (Benton Harbor) | |
| • Oct. 27, 2020 | |



ON-SITE TRAINING ONLY

WANT TO SCHEDULE A COURSE AT YOUR LOCATION? CALL 888.414.6682.

LEAN PRINCIPLES & TECHNIQUES

ADVANCED PROBLEM SOLVING: LEAN SIX SIGMA YELLOW BELT (CEU Credits: 2.1)

Lean Six Sigma Yellow Belt (LSSYB) training develops the skills of the professional who participates as a supporting team member in a variety of Six Sigma projects led by Six Sigma Green or Black Belts.

Upon class completion (no project required), a LSSYB will understand the broad aspects and foundational elements of Lean Six Sigma methodology. Gain the knowledge to implement, perform, interpret and apply Lean Six Sigma principles in a skilled, yet limited and/or supportive context.

3 days of classes | \$1,500/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Dec. 3-5, 2019
- March 2-4, 2020
- June 9-11, 2020 (Kalamazoo)
- July 14-16, 2020
- Sept. 15-17, 2020
- Dec. 1-3, 2020

ERROR PROOFING/POKA-YOKE

Understand the benefits of building in quality at the source. Implement methods or devices into the manufacturing process instead of inspection only at the end of the process. Best practice examples of how companies prevent errors or defects are introduced. A hands-on factory simulation is included.

½ day of class | \$295/person

SESSIONS AVAILABLE (1:00 PM - 5:00 PM)

- Jan. 28, 2020
- Feb. 26, 2020
- March 18, 2020 (Troy)
- March 31, 2020
- April 22, 2020
- April 24, 2020 (Kalamazoo)
- May 19, 2020
- July 23, 2020
- Aug. 25, 2020
- Sept. 18, 2020 (Benton Harbor)
- Oct. 27, 2020



KAIZEN PRACTITIONER

A typical Kaizen event for each model area/product group consists of five days of focused team activity. Participants learn the benefits, characteristics, building blocks, and key performance measures as they facilitate a successful Kaizen event in their own organization. Kaizens available include 5S, Single Minute Exchange of Dies, Total Productive Maintenance and Kanban. Objectives include:

- Understand Kaizen and basic steps for success
- Document plant layout (before and after Kaizen improvement) with Value Stream Mapping
- Document strengths and opportunities in model area
- Apply Lean tools and techniques where applicable
- Balance the workload and restructure the work area to eliminate waste

5 days of ON-SITE TRAINING | \$10,000
(min. of 5, max. of 7 participants)

LEAN MANUFACTURING CHAMPION: CONTINUOUS IMPROVEMENT WITH TECHNOLOGY (CEU Credits: 5.6)

This training helps organizations successfully implement proven techniques for eliminating waste. Using competency-based and hands-on approaches, this course provides team leaders the knowledge and skills to apply Lean business solutions within their own operations, resulting in reductions in the time and cost to execute business processes. Participants will transform a traditional batch-process into a Lean cellular manufacturing process in our The Center's simulated factory.

** It is recommended that an executive management team member who will be sponsoring the company-wide Lean initiative attends the culture piece on day one to acknowledge commitment of resources and to ensure management objectives and Lean improvement ideas.*

8 days of classes | \$2,800/person -OR-

5 days of ON-SITE TRAINING | \$14,000 | Includes 6-8 participants; No CEUs Offered; (\$1,400 additional per person up to 12)

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 13-16 & 27-30, 2020
- March 16-19, 30-31 & April 1-2, 2020
- May 4-7 & 18-21, 2020
- Aug. 10-13 & 24-27, 2020
- Oct. 12-15 & 26-29, 2020

LEAN OFFICE CHAMPION (CEU Credits: 2.1)

Apply Lean principles, beyond the manufacturing floor, right to your front door. Typically 70% of labor costs are attributed to above-the-shop-floor activities including support operations such as quoting, accounting, sales and engineering. This training offers a comprehensive hands-on approach to teach team leaders how to identify opportunities for improvement through reduction in TIME conducting transactional activities.

3 days of classes | \$1,500/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- March 3-5, 2020
- May 5-7, 2020 (Kalamazoo)
- June 16-18, 2020
- Oct. 6-8, 2020



ON-SITE TRAINING ONLY

WANT TO SCHEDULE A COURSE AT YOUR LOCATION? CALL 888.414.6682.

LEAN PRINCIPLES & TECHNIQUES



LEAN SIMULATION

Simulation training will help participants understand how Lean philosophy and techniques can be applied to maximize customer value, minimize waste, and reduce costs through workplace organization and visual controls, cellular manufacturing and one-piece flow, quality at the source, and pull scheduling. The simulation will let participants go through three rounds of setting up a Lean factory. More time is spent learning how a company can transform a traditional manufacturing firm into a Lean producer by focusing on material and information flow resulting in lead-time reductions, improved on-time shipments and quality, increased labor productivity and waste elimination. This class can be designed for low volume/high mix (Timewise) OR high volume/low mix (Buzz) manufacturing environments.

8 hours of ON-SITE TRAINING | \$3,200
(min. of 10, max. of 15 participants)

LEAN SIX SIGMA GREEN BELT (CEU Credits: 5.6)

Lean Six Sigma Green Belt (LSSGB) training covers the application of established Lean and six sigma techniques to remove wastes, improve operational speed, lower costs and increase customer satisfaction. This certification focuses on improved quality and accuracy, minimized cost and variation, on-time delivery and optimized operational speed; all which enable organizations to become more efficient and profitable producers. Participants receive a LSSGB certification upon submission of a Lean Six Sigma project report that is reviewed and approved by our Six Sigma Master Black Belt.

** A project sponsor is strongly recommended and is expected to attend the first session.*

8 days of classes | \$3,450/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Nov. 2-5 & 16-19, 2020
- April 13-16 & 27-30, 2020

RISK MANAGEMENT & TOTAL COST OF OWNERSHIP FOR SUPPLY CHAIN

Risk is everywhere and it impacts companies large and small. This training session helps you to identify the triggers of risk events, the importance of developing a plan to mitigate them when they do occur, and how to establish monitoring metrics and activities so you may be prepared for the inevitable. Participants will also learn how Total Cost of Ownership allows companies to account financially for each activity along the supply chain including costs associated with the acquisition of materials, transportation, storage, and the selling of purchased good or services.

1 day of class | \$495/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Feb. 10, 2020
- July 6, 2020
- Dec. 14, 2020



SET-UP TIME REDUCTION (SMED/QCO)

This course focuses on reducing set-up times in order to increase flexibility. Single Minute Exchange of Dies (SMED) refers to the theory and techniques for performing set-up operations in less than 10 minutes. Participants will learn how inexpensive techniques can be implemented to achieve quick changeovers (QCO), which can improve production and reduce waste.

1 ½ days of ON-SITE TRAINING | \$3,000
(min. of 5, max. of 7 participants)

STANDARD WORK

A key ingredient in the creation of a Lean enterprise, Standard Work is a set of procedures for each operational process that documents the most effective, balanced combination of people, machines, materials, and space to meet customer demand. Without Standard Work, processes will change for operational convenience, which are often not in the best interest of the organization or customer.

1 day of class | \$495/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 14, 2020
- Feb. 13, 2020 (Kalamazoo)
- Feb. 27, 2020
- March 17, 2020
- March 27, 2020
- April 1, 2020 (Kalamazoo)
- April 20, 2020
- May 5, 2020
- July 21, 2020
- Aug. 11, 2020
- Oct. 13, 2020



TOTAL PRODUCTIVE MAINTENANCE (TPM) APPLICATION TRAINING

Teach operations the philosophy and skills necessary to transform productive maintenance activities from a “cost burden” to a “cost savings.” At the end of instruction, clients should understand:

- The principles and benefits of TPM and autonomous maintenance
- Calculate Overall Equipment Effectiveness
- The role maintenance provides in continuous improvement
- Improvements made at the shop level can dramatically improve overall company performance

1 ½ days of ON-SITE TRAINING | \$3,000
(min. of 5, max. of 7 participants)



ON-SITE TRAINING ONLY

WANT TO SCHEDULE A COURSE AT YOUR LOCATION? CALL 888.414.6682.

LEAN PRINCIPLES & TECHNIQUES

TOTAL PRODUCTIVE MAINTENANCE/ QUICK CHANGEOVER (TPM/QCO)

Learn how to calculate and use Overall Equipment Effectiveness, the key metric for measuring equipment performance. Emphasis is placed on the importance of teamwork and integration between production and maintenance departments. Two hours of this session focus on reducing set-up times for manufacturers, increasing flexibility. Frequent set-ups are necessary to produce a variety of goods in small lots (low volume-high mix). Inexpensive but highly effective techniques are shown to achieve quick changeovers.

1 day of class | \$495/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 27, 2020
- March 30, 2020
- May 18, 2020
- Aug. 24, 2020
- Oct. 26, 2020

UNDERSTANDING LEAN PRINCIPLES & TECHNIQUES 4.0

Understanding Lean Principles & Techniques 4.0 demonstrates how Lean can be applied to an organization to maximize customer value, minimize waste, and reduce costs through workplace organization and visual controls, cellular manufacturing, quality at the source and pull scheduling. This three-round, Lean factory simulation gives participants an understanding of how Lean principles, when effectively applied, can positively impact their company. Learn how to transform a traditional manufacturer into a Lean producer by focusing on material and information flow resulting in lead-time reductions.

1 day of class | \$395/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Feb. 12 2020 (Kalamazoo)
- Feb. 17, 2020
- June 22, 2020



VALUE STREAM MAPPING & DEPLOYMENT PLAN

Value-Stream Mapping helps clients see manufacturing processes as a Lean production system. Learn how to redesign manufacturing and information flow processes to maximize customer value while minimizing costs and waste. Participants will develop value stream maps on a product/product family, including developing a current state value stream map, identifying waste areas, and creating a future state value stream map. Students will then learn how to create a deployment plan to ensure that the future state becomes a reality.

2 days of ON-SITE TRAINING | \$3,600
(min. of 6, max. of 10 participants)

QUALITY MANAGEMENT

8D PROBLEM SOLVING (CEU Credits: .7)

Root cause analysis and problem-solving tools are presented and demonstrated in this session. Both internal (yield issues) and external (warranty, field failure, customer complaint) problems are introduced. Understanding is gained through practical, hands-on exercises using common measurement gauges. Problems are introduced to demonstrate the typical formats for reporting the findings, applying solutions and corrections.

1 day of class | \$395/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Dec. 13, 2019
- Jan. 6, 2020
- Feb. 3, 2020
- Feb. 18, 2020 (Troy)
- March 2, 2020
- April 6, 2020
- April 21, 2020 (Kalamazoo)
- July 13, 2020
- Sept. 15, 2020 (Benton Harbor)
- Sept. 16, 2020
- Nov. 9, 2020

AIAG-VDA PROCESS FMEA FOR PRACTITIONERS

This course equips participants with the knowledge and skills needed to complete the new FMEA methodology, which includes the activities surrounding the 7-Step Approach and use of Action Priority ratings. The 7 Steps are covered with exercises designed to ensure maximum understanding. At course completion, participants will have the tools needed to objectively evaluate the effectiveness of their current FMEA process while planning and using the new AIAG-VDA-FMEA process.

2 days of classes | \$795/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 23-24, 2020
- Feb. 25-26, 2020
- June 1-2, 2020
- Sept. 10-11, 2020

AS 9100D INTERNAL AUDITOR

(CEU Credits: 2.1)

Better understand the specifics of the AS 9100D aerospace system and how to audit to it. Learn how various requirements may, or may not, apply to your organization and be better prepared to implement, understand, and audit your system. Auditor tips are studied as well as scheduling, planning, and performing audits. Participants will conduct several mock audits through the process and will gain a practical understanding of both the ISO 9001 and AS 9100 system audit programs.

3 days of classes | \$995/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- March 17-19, 2020
- Sept. 1-3, 2020



QUALITY MANAGEMENT

CORE TOOLS: APQP, PPAP AND FMEA

(CEU Credits: 1.4)

This course blends APQP, PPAP and FMEA and guides participants through the steps of the launch process. Utilized correctly, the deployment of these core tools leads to continuous improvement, defect prevention and reduction in variation and waste.

2 days of classes | \$795/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Dec. 9-10, 2019
- Feb. 19-20, 2020 (Kalamazoo)
- Feb. 27-28, 2020
- March 4-5, 2020 (Troy) • March 26-27, 2020
- April 29-30, 2020
- June 17-18, 2020 (Kalamazoo)
- June 24-25, 2020 • Aug. 27-28, 2020
- Oct. 1-2, 2020 • Dec. 3-4, 2020

CORE TOOLS: MEASUREMENT SYSTEMS ANALYSIS

(CEU Credits: .7)

Measurement Systems Analysis (MSA) examines sources of variation in the measurement process, as well as information about measurement characteristics based on accuracy, precision and stability.

1 day of class | \$395/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 13, 2020 • March 16, 2020 (Troy)
- March 19, 2020 (Kalamazoo) • April 8, 2020
- July 29, 2020 • July 30, 2020 (Kalamazoo)
- Sept. 24, 2020

CORE TOOLS: STATISTICAL PROCESS CONTROL

(CEU Credits: .7)

Attendees run a group of sequentially produced parts and measure them to determine average, range and sigma. Control limits are calculated and additional samples are measured and plotted to determine where the process is going and why. Interpretations of results and capability study exercises are addressed.

1 day of class | \$395/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Dec. 11, 2019 • Jan. 15, 2020
- April 9, 2020 • May 28, 2020 (Kalamazoo)
- July 28, 2020 • Sept. 3, 2020
- Sept. 30, 2020 (Kalamazoo)

IATF 16949:2016 INTERNAL AUDITOR

(CEU Credits: 2.8)

Emphasis is placed on effective auditing processes, skills and techniques. Participants will learn how to develop an audit plan and report required for management review. Corrective and preventive actions will be reviewed. Clear definitions of the five clauses of the IATF 16949 requirements are covered. Participants will also be introduced to techniques for interfacing with third party registrars, as well as non-intrusive auditing practices.

4 days of classes | \$1,195/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 7-10, 2020 • March 9-12, 2020
- March 24-27, 2020 (Kalamazoo)
- May 11-14, 2020 • June 23-26, 2020 (Troy)
- Oct. 5-8, 2020 • Nov. 16-19, 2020

ISO 9001:2015 INTERNAL AUDITOR

(CEU Credits: 2.1)

Learn the information necessary for conducting internal quality audits. Emphasis is placed on effective auditing processes, skills and techniques. Participants will be instructed in developing an audit plan and the audit report required for management review. Corrective and preventive action will be reviewed, as well as the 2015 standards and requirements.

3 days of classes | \$995/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Feb. 11-13, 2020 • April 14-16, 2020
- May 19-21, 2020 (Kalamazoo) • June 8-10, 2020
- July 22-24, 2020 (Troy) • Aug. 3-5, 2020
- Oct. 20-22, 2020 • Dec. 15-17, 2020

ISO 13485:2016 INTERNAL AUDITOR

(CEU Credits: 2.8)

Understand the specifics of the ISO 13485 Medical Device system, and how to audit to it. Learn how the various requirements may, or may not, apply to your type of organization and be better prepared to implement, understand, and audit your system. Auditor tips and techniques are studied as well as scheduling, planning, and performing audits. You will conduct several mock audits and end with a practical understanding of both the ISO 9001 and added ISO 13485 system audit programs.

4 days of classes | \$1,195/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Feb. 11-14, 2020 • June 8-11, 2020



ON-SITE TRAINING ONLY

WANT TO SCHEDULE A COURSE AT YOUR LOCATION? CALL 888.414.6682.

QUALITY MANAGEMENT

ISO 14001:2015 INTERNAL AUDITOR

(CEU Credits: 1.4)

The ISO 14001:2015 Internal Auditor course will quickly acquaint you with the ISO 14001:2015 standards and requirements. This class will cover ISO 14001:2015 elements and standards, how to diagnose conformances and non-conformances, details of the audit process, measures for implementing corrective action, structured steps for conducting an audit, and structures sequence of a typical audit via an interactive simulation session.

2 days of classes | \$795/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 16-17, 2020
- June 29-30, 2020
- Nov. 2-3, 2020



LAYERED PROCESS AUDIT

Layered Process Audits (LPAs) offer companies tremendous potential benefits. They involve all plant personnel, including multiple levels of management, and cover all key areas in the manufacturing process. Creating an LPA system that is truly effective and obtaining the best, most accurate results requires a solid plan, detailed preparation and knowledgeable personnel.

Learn how to plan, prepare and conduct an LPA on your company's manufacturing processes. Through a combination of coursework and practical application, our instructor will guide you to establish the necessary planning, checklists and reports through hands-on mentoring in a familiar environment.

6 hours of ON-SITE TRAINING | \$2,000
(min. of 5, max. of 8 participants)

RISK MANAGEMENT USING FMEA

(CEU Credits: 1.4)

Learn the steps of Risk Management using the tool of Failure Mode Effects Analysis (FMEA) to define, manage, and reduce risks. Processes also used in this training include brainstorming, creating SIPOCs and Process Flowcharts to help in the understanding and analysis of the process. Get to know each step of an FMEA, with exercises designed to ensure maximum understanding of both Design FMEA and Process FMEA.

2 days of classes | \$795/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Dec. 5-6, 2019
- Jan. 28-29, 2020
- March 5-6, 2020
- March 26-27, 2020 (Troy)
- June 3-4, 2020 (Kalamazoo)
- July 9-10, 2020
- Sept. 29-30, 2020

SALES DEVELOPMENT & MARKET RESEARCH

MARKET RESEARCH TOOLS

Market research is an imperative step in the strategic decision making process. Now is the time to start developing in-house market research initiatives. Learn about free and low-cost resources for investigating the competitive landscape, industry trends, and other key market data, as well as how to collect information on customer perceptions, level of satisfaction, and other key metrics using online surveys. Topics include competitive intelligence, prospect list generation, market analysis, and more.

1 ½ days of classes | \$795/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM/8:00 AM-12:00 PM)

- April 23-24, 2020
- July 16-17, 2020
- Oct. 1-2, 2020

SALES ACCELERATION

This course includes the development of a customer specific process in a group setting. The tools used will allow the customer to gain knowledge and transfer that knowledge to their organization. The session ends with a "sales meeting" held by the Sales Manager (Instructor), setting the tone for the transfer back to the company.

2 days of classes | \$799/per company up to 2 people

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- April 2-3, 2020
- Nov. 5-6, 2020





SIX SIGMA

SIX SIGMA BLACK BELT (CEU Credits: 7.0)

Training employees as Six Sigma Black Belts will provide the valuable skills needed to tackle the toughest problems confronting your organization by coupling the proven Define, Measure, Analyze, Improve, and Control (DMAIC) problem-solving methodology with robust statistical tools. Six Sigma offers a carefully defined road map for achieving business process improvements. Black belt trainees obtain a solid understanding of the tools and methods associated with the Six Sigma approach.

The pace of instruction allows trainees to absorb and quickly deploy Six Sigma. With each session, trainees can immediately apply newly acquired skills to their certification project. This improves the retention of key Six Sigma principles, reinforces contextual learning and builds trainee confidence. On-site mentoring by the instructor allows for any fine-tuning with the trainee and his/her sponsor in their own work environment.

Certification Timeline: The Black Belt candidate is expected to certify within 12 months of the first day of class. If the time line is not met there will be a late fee for certification. The penalty for late certification increases with time.

** Participation of a project sponsor (usually the candidate's manager or other company leader) is a requirement for Black Belt certification. A sponsor is expected to attend the first training session with the Black Belt candidate, and to be involved in the project review sessions occurring throughout the certification process.*

10 days of classes | \$7,350/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- March 10-11/23-25 & April 7-8/20-22, 2020
- Sept. 29-30, Oct. 13-15/27-28 & Nov. 9-11, 2020

SIX SIGMA GREEN BELT (CEU Credits: 3.5)

From executive leaders to front-line employees, Six Sigma Green Belt training enhances the way employees approach their day-to-day work. Providing employees with Six Sigma Green Belt training equips them with a logical and objective way to identify, measure and eliminate problems within an organization. Suddenly, employees don't have to just cope with process problems – they begin to recognize and implement solutions to them.

A blend of DMAIC project management methods and practical data analysis techniques provide employees with new ways to contribute to the bottom line.

Certification Timeline: At the end of the course, each participant will receive a certificate of completion for attending. Certification has three elements: participant has attended all session days, has passed the final exam and provided evidence of involvement in a Six Sigma project to the instructor in the form of a project report.

** A project sponsor is strongly recommended and ensures that project efforts are consistent with the organization's overall strategy. A sponsor is expected to attend the first training session, and to be involved in the project review sessions throughout the certification process.*

5 days of classes | \$2,800/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Feb. 4-6/19-20, 2020
- Aug. 4-6/19-20, 2020

ADVANCED PROBLEM SOLVING: LEAN SIX SIGMA YELLOW BELT

[\(see pg. 7\)](#)

LEAN SIX SIGMA GREEN BELT

[\(see pg. 8\)](#)



WORKFORCE ENGAGEMENT

MANUFACTURING SKILLS DEVELOPMENT (CEU Credits: 1.4)

This training is designed for students who are either new to the manufacturing environment or those who need a more thorough understanding of manufacturing. Manufacturing Skills Development will provide a foundation for the processes, approach and culture needed to run an effective and efficient operation. The following topics are covered:

- **Quality Management Systems (4 hrs.)** – Students are introduced to the systems and processes necessary to deliver a conforming product on time and satisfy the customer by controlling variation in the process.
- **Problem Solving Skills (4 hrs.)** – Learn the various techniques for problem solving in the manufacturing environment, focusing on the ability to identify the problem, isolate the root cause, and document the process.
- **Lean Manufacturing (4 hrs.)** – Gain an understanding of Lean principles and techniques and how they can be applied to maximize customer value, minimize waste and reduce cost. Students also will learn about the eight types of waste in every organization and what constitutes a value-added process.
- **Culture & Motivation (4 hrs.)** – Learn the methods and means for corporate/operational communication along with motivational techniques. Conflict Management also will be covered.

2 days of classes | \$995/person

SESSIONS AVAILABLE (8:00 AM - 5:00 PM)

- Jan. 21-22, 2020
- March 24-25, 2020
- April 2-3, 2020 (Troy)
- April 22-23, 2020 (Kalamazoo)
- May 12-13, 2020
- Sept. 16-17, 2020 (Benton Harbor)
- Sept. 22-23, 2020
- Dec. 8-9, 2020

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