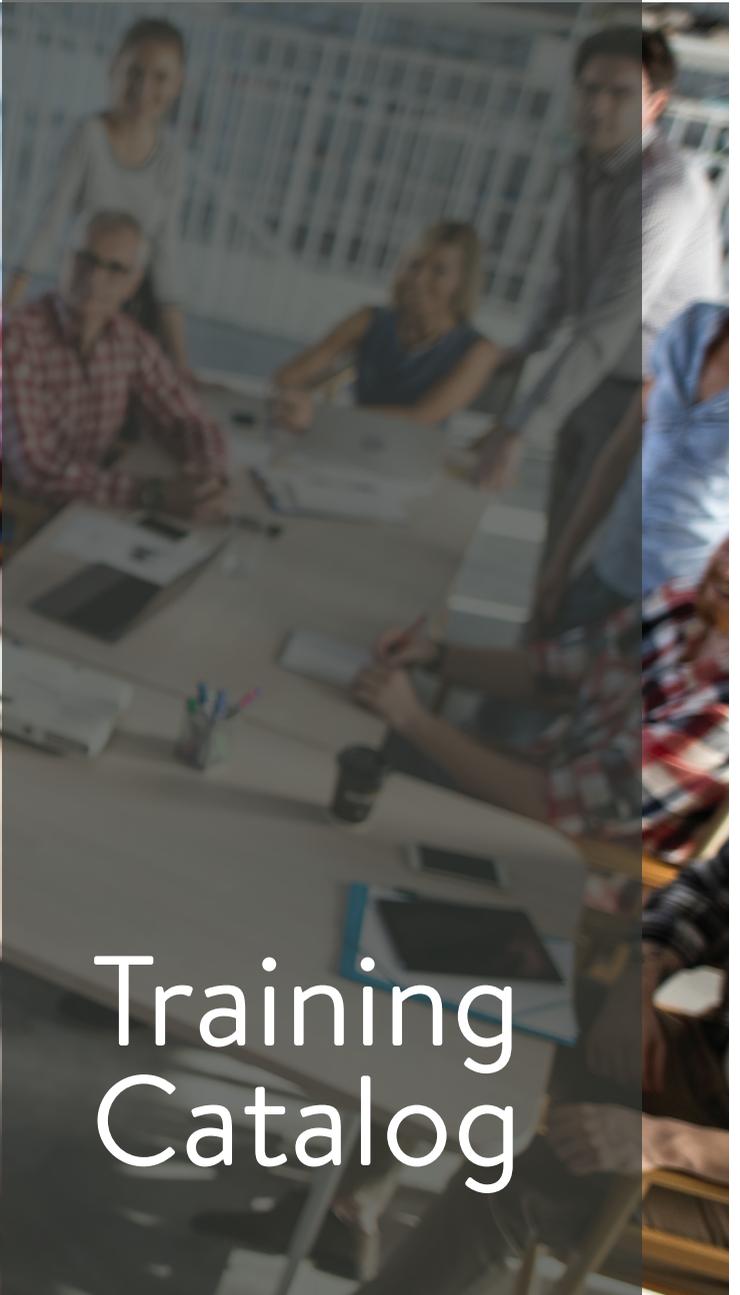


2021-2022



Training Catalog



MICHIGAN
MANUFACTURING
TECHNOLOGY
CENTER

CYBERSECURITY • FOOD
GD&T/BLUEPRINT READING
LEADERSHIP • LEAN SOLUTIONS
MANUFACTURING DESIGN
QUALITY MANAGEMENT • SIX SIGMA
WORKFORCE ENGAGEMENT

YOUR JOURNEY TO

MANUFACTURE SMARTER

BEGINS RIGHT HERE

WITH US.

THE MICHIGAN MANUFACTURING TECHNOLOGY CENTER

has assisted Michigan's small and medium-sized businesses since 1991. Through personalized services to meet the needs of clients, we develop more effective business leaders, drive product and process innovation, promote company-wide operational excellence and foster creative strategies for business growth and greater profitability.



MICHIGAN
MANUFACTURING
TECHNOLOGY
CENTER

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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 training and consulting services such as leadership transformation, operational excellence improvements, quality systems compliance 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.



TRUSTED. EXPERIENCED. LOCAL.

In the pursuit of empowering employees and businesses, The Center-West provides invaluable consulting and training opportunities by offering:

- Customized, On-Site Learning
- Peer-To-Peer Group Learning
- Individual Skills Training Workshops

OUR PARTNERS

The Center-West partners with local workforce training organizations to provide customized training, consulting and technical skills training both on-site and off-site for our region. This enables us to work together to seamlessly integrate the training manufacturers require to optimize production capacity and overall profitability.

OUR PARTNERS INCLUDE:



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. It is 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.

Training is held at The Center's Plymouth, Mich. office located at 45501 Helm St.

FOOD INDUSTRY

BRC FOOD SAFETY (ISSUE 8) SYSTEM DEVELOPMENT/UPGRADE

The BRC Standard requires the adoption of fundamental food safety concepts, a document quality management system and control of factory environmental standards, processes, and personnel. Our team will assist with upgrading your quality system to comply with the recently revised standard.

GOOD MANUFACTURING PRACTICES (GMP) DOCUMENTATION DEVELOPMENT

This training teaches each process owner the department-specific requirements of how to develop a food safety system to comply with GMP requirements for food packaging suppliers.

HAZARD ANALYSIS & CRITICAL CONTROL POINTS (HACCP)

Consistent food safety fundamentals are often difficult to provide for an organization. Completing a HACCP Plan Development Course enables you to be better equipped to identify and avoid food safety risks. This course is a mixture of lecture and hands-on learning. This course is accredited by the International HACCP Alliance. Certificates are awarded upon successful completion.

PREVENTIVE CONTROLS QUALIFIED INDIVIDUAL (PCQI)

To comply with the guidelines of the Food Safety Modernization Act (FSMA), 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
- Food Allergen Preventive Controls

Training is held at The Center's Plymouth, Mich. office located at 45501 Helm St.

GD&T/BLEUPRINT READING

A BASIC COURSE IN GEOMETRIC DIMENSIONING & TOLERANCING (GD&T)

Industry uses GD&T to specify contractual requirements. Unfortunately, many people within the industry have a flawed or incomplete understanding of the subject. Our basic two-day course builds competence to correctly apply and interpret the rules, definitions, principles and symbols per the American National Standard, ASME Y14.5 – 2009. This course provides a common language to improve communication, so set-up requirements and tolerance zones are clearly understood by all.

BLEUPRINT READING

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

DATUM SCHEMES FOR GEOMETRIC DIMENSIONING & TOLERANCING (GD&T)

Many problems we face in the manufacturing industry, especially dimensional concerns, have faulty datum schemes as their root cause. Datum schemes must be explicit, functional, and repeatable. If any of these requirements are not met, financial loss occurs.

This mid-level course begins with a fast-paced review of the basics, so you can bring your GD&T skills in line with the 2009 standard. Our primary focus is on datum strategies for assemblies and the detail components that comprise them. We teach you to spot datum problems and resolve these issues during product development.

TOLERANCING STRATEGIES WITH GEOMETRIC DIMENSIONING & TOLERANCING (GD&T)

Tolerancing strategies are rarely taught in engineering programs. Designers and engineers are left to fend for themselves, frequently pulling past design practices forward, whether there is a rational basis to do so or not.

This course combines tolerancing concepts with statistical methods. We examine part, fixture, gage and assembly tolerances, as well as the interactions between them. Tolerance stacks are evaluated via worst-case analysis. Strategies for robust design capitalize on operational definitions of GD&T to minimize loss to society.

LEADERSHIP

MASTER SUPERVISOR TRAINING

The Master Supervisor training program is the most comprehensive and valuable training available for supervisors and organizations. This training program pays back through direct application of improvement, problem solving, leadership methods and tools. This program provides the participant with a practical understanding of how to be a more effective supervisor and lead people to improved organizational performance. Key methods and tools are put to immediate use to provide documented improvement in individual and team performance measures.

The fundamentals of supervision and leadership are put into practical terms, applications and tools to provide the participant a well-rounded understanding of how and when to use the key tools and techniques. Special consideration is given to performance metrics, goal setting and performance management, or "how to help others succeed". Performance metrics are established to document improvements.

- *Personality Preference – Understanding Yourself & Others*
- *Valuing Diversity & Team Building*
- *Communications – Written, Verbal & Presentations*
- *Performance Management, Goal Setting & Delegation*
- *Rewards, Discipline & Terminations*
- *Conflict Management*
- *Problem Solving & Decision Making*
- *Continuous Improvement & Managing Change*
- *Interviewing & Meeting Leading*
- *Project & Time Management*
- *Stress & Anger Management*
- *Motivation*
- *Leadership, Coaching & Trust Building*

TECHNOLOGY

IS RESHAPING THE LANDSCAPE

OF MANUFACTURING

HERE'S HOW YOU CAN BENEFIT

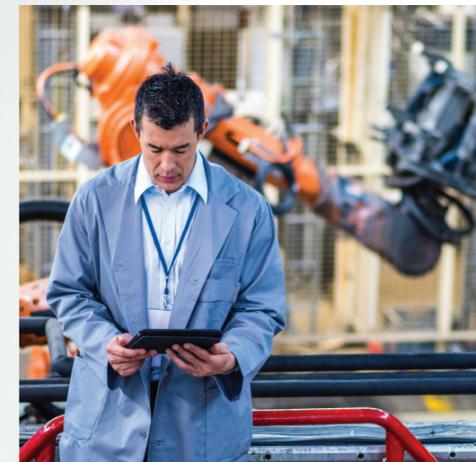
Manufacturing is built on change. With continuous improvement engrained as an industry best practice, revolutionary tools, processes and challenges are introduced with each new decade. This holds true in the current manufacturing landscape as Industry 4.0, or the Fourth Industrial Revolution, is transforming the industry once again.

While most manufacturers are now aware of Industry 4.0, only a small fraction of small to medium-sized companies have started taking steps toward adopting these innovations. This might be due to fear, lack of awareness of the applications and benefits or disbelief that technology is right for you. Regardless of the reason, the reality is the industry will only continue to grow more reliant on technology in the future, so manufacturers must learn to embrace it or risk falling behind permanently.

Rather than adopting technology simply for the sake of doing it, manufacturers will find success if they align innovations with the needs of their business. This provides a number of distinct strategic benefits, as the return on investment (ROI) will be maximized and your competitive edge will be heightened.

Drawing from knowledge and experience with the many disciplines of Industry 4.0, experts at the Michigan Manufacturing Technology Center-West (The Center-West) help manufacturers understand how technology could aid in their business growth. By introducing manufacturers to advanced manufacturing in a more personalized way, The Center-West provides clients with the tools needed to identify relevant technology solutions to improve their biggest problem areas, including productivity, quality, efficiency and workforce training.

INDUSTRY 4.0



MANUFACTURE SMARTER.

To ensure clients find success with their technology adoption, The Center-West has developed service offerings to support manufacturers with finding affordable and practical solutions to fit their needs, as well as to assist in the implementation process.

ENGAGE IN AN OPPORTUNITY ASSESSMENT

The Center's two-hour Opportunity Assessment involves answering 40 quantitative and qualitative questions related to the Voice of Business/Voice of Customer, Systems such as documented processes or standard work procedures, and Technology including any existing applications of automation in your facility. Using data and information provided by your company, The Center-West assigns rankings to each response according to how strong your current practices are for each category, effectively highlighting the main opportunities for improvement.

Based on the findings from the questionnaire and observations made during the assessment, we generate a summary report outlining opportunities for business improvement and increased efficiency. The Center-West is then able to create a unique and personalized plan for technology implementation within your facility. Recommendations are based on identified opportunities for improvement and areas that could most benefit from

technology adoption, complete with projected returns on investment.

Where additional support is needed, The Center's team offers comprehensive assistance. With expertise in project management, we can help establish an adoption strategy, scope the project, find vetted suppliers and manage the implementation to ensure the results meet the needs of both the business and customer.

EXPERIENCE INDUSTRY 4.0

For those manufacturers who are interested in experiencing Industry 4.0 in person before making any investments, The Center has implemented various technologies to create our Technology Lab. Featuring the nine technologies of Industry 4.0, including innovations such as 3D printing, cobots and augmented reality, this lab offers manufacturers a hands-on opportunity to learn how to modernize and optimize equipment, as well as effectively train and prepare their workforce for advanced manufacturing. These implementations demonstrate the uses and benefits these technological applications can provide, and ultimately help clients decide which tools might be right for them.

To schedule a complimentary Opportunity Assessment, or to view Industry 4.0 in action, call 616.301.6247.

LEAN SOLUTIONS/CONTINUOUS IMPROVEMENT

5S VISUAL CONTROL/VISUAL MANAGEMENT

5S Visual Control/Visual Management involves creating a visual standard and infusing the workplace with information critical to the efficient execution of day-to-day operations. Participants will learn how to create, maintain and improve the standard so exceptions/variation are visible and action can be swift to identify root cause and correct the problem. Participants will practice the five-step process by applying the tool on a selected area during the workshop.

ACCOUNTABILITY BOARDS

This critical tool drives an organization's culture to collectively look at what is happening at the operator level and pull resources together to discuss, and visually document what each support group will accomplish in the coming days to improve a process. Critical support people gather daily to update what each group is doing to hit assigned due dates and timelines to accomplish continuous improvement goals.

DAILY MANAGEMENT & CONTINUOUS IMPROVEMENT (CI) BOARDS

Daily Management Boards visually display the expected goals of a work center. They are directly linked to the company's strategic goals. CI Boards should visually answer the critical questions related to a specific area's performance throughout the day. The CI Board links the area's team activities to improved performance.

Daily Management and CI Boards create a visual standard that helps manage the work center based on current activities. This is in sharp contrast to the practice of "seeing how well we did at the end of the day." CI boards work in conjunction with each other identifying areas where improvement can occur, and identifying what the team is doing to make this day better than the previous day.

GEMBA WALK

A Gemba Walk is a structured process for learning and teaching about sustaining and improving lean systems. It is the process that instills leaders with their true north focus and improves the communication between the front line and higher levels of management. A leader strives to stretch the thinking and perceptions of others with questions that stimulate people to consider entirely new possibilities.

KAIZEN EVENT TRAINING

A Kaizen Event is a structured and rapid improvement process, and is one of the many tools in a Lean Enterprise tool kit. It focuses on achieving high levels of involvement with people impacted by the event. The learning obtained by Kaizen Event participants instills knowledge about the reason change is important and how to use various Lean Enterprise tools to collect data and solve problems. The energy achieved through a Kaizen Event will increase continuous improvement and sustain the gain that may not be achieved through other continuous improvement activities. This learning can either be taught through a hands-on workshop or through conducting a mini Kaizen Event.

KANBAN/PULL SYSTEMS

Pull system is a tool to convert a current push into a pull scheduling system, leveling inventory and production, and creating a simple direct communication system between the internal customer and supplier.

Pull Systems are a visual means of managing customer order flow between processes based on actual demand and consumption. Depending on what is identified in the Value Stream Mapping, this workshop will either tie the finished goods to production planning in assembly or the assembly to the batch process of stamping.

LEADER'S STANDARD WORK

Leader's Standard Work is a documented standard practice written to sustain and improve an organization's lean systems. It cascades up from the operator's standard work to supervisor to mid-management to senior management. Standard Work is a platform for ongoing evaluation between leaders and supervisors, and regularly helps align priorities. It is also a critical tool to change behavior while focusing on important vs. urgent issues.

LEAN SOLUTIONS/CONTINUOUS IMPROVEMENT

LEAN BOOT CAMP

This training provides an overview of the basic principles and tools of lean manufacturing. A simulation is used to introduce the core principles related to lean manufacturing and continuous improvement, as well as to support team problem solving.

In the Lean Simulation, participants become employees of a company called "Traditional Manufacturing Company" for the duration of the workshop. The simulation alternates between production weeks, lean training and improvement planning rounds. Following each production week, an income statement (the "scoreboard") is created to see the impact of recommended changes made to the bottom line.

The simulation begins with traditional manufacturing and moves to lean as participants suggest changes that can be immediately tested in the simulation in "production" rounds.

Through the simulation, participants learn what to look for when making improvements, identify the lean tools that will help improve operations, how to consider the system as a whole (not just their area), the importance of documenting their plans and predicting the outcomes, and comparing the actual results achieved with their predicted results.

LEAN CHAMPION

Phase 1: Preparing the Lean Champion

Participants are introduced to the methods to manage cultural change, and the importance of making changes to achieve the desired culture. Participants will be exposed to the power of teamwork and will learn how to select and form successful teams. In addition, participants will learn how to lead teams to success through the typical stages of team growth and development.

Phase 2: Elements of Lean Manufacturing

Learn the tools and techniques that are applied in the production process to eliminate waste.

Phase 3: Application of Lean Principles

Participants will use problem solving tools to assist in the continual improvement process. Participants are introduced to the five steps required to create a cellular design. Participants will also receive detailed training that will guide them to balance the workload to takt time.

LEAN OFFICE

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.

LEAN SIX SIGMA TRANSFORMATION

Our Lean Six Sigma Transformation program provides Lean Six Sigma Methods & Tools training and consultation leading to a consistent and sustainable Lean Six Sigma Transformation effort.

A sustainable Lean Six Sigma Transformation is defined by an understanding, and systematic and sustainable application of Lean Six Sigma philosophies, principles, concepts, methods, and tools, leading to measurable improvement results in key performance indicators. This includes establishing a self-sustainable path or "roadmap" for a Lean Six Sigma Transformation.

This program has four core areas of focus that can be delivered individually, but are recommended together to achieve the greatest positive impact. The four core focus areas begin an organization on a lean transformation pathway. Core areas of focus include:

- 1. Executive Leadership Team Alignment & Coaching**
 - Strategic planning & deployment methods/tools
 - One-page plan development, which is key for lean transformation
- 2. First Level Leadership Alignment & Applications Training**
 - One-page plan deployment and basic supervisor skills training and development
 - This is the "people side" and execution of the management system focus for a successful lean transformation
- 3. Grassroots Level Lean Applications Training**
 - 5S and visual controls
 - Shop floor and office improvements and applications
- 4. Value Stream Mapping to High Impact Lean Sigma Improvement Projects**
 - This is the bottom line impact work driven through cross functional teams

LEAN SOLUTIONS/CONTINUOUS IMPROVEMENT

PROBLEM SOLVING

This simple and quick training will develop the skills needed to see and think systematically. Topics and activities covered:

1. *Basic Problem Solving System/Shop floor utilized system*
2. *Storyboard utilization with supporting check sheet and tools*
3. *Clear understanding of how and when it is used*
4. *A system and process for escalating issues*
5. *Positive recognition for utilizing the system and achieving success*
6. *How to lead a team through the process*
7. *Standard process and questions leadership will use when reviewing the problem solving storyboards*

ROOT CAUSE ANALYSIS

This training will focus on problem solving used for identifying the root causes of faults or problems. Training will be focused on four general principles:

1. *Define and describe properly the event or problem (“five whys” technique)*
2. *Establish a timeline from normal situation until the final crisis or failure*
3. *Distinguish between root causes and causal factor*
4. *Once implemented and with constant execution, RCA is transformed into a method of problem prediction*

SMED/CHANGEOVER REDUCTION

Single Minute Exchange of Dies (SMED) is a four-step process to reduce the time a machine is down during changeover from the last good part of the last run to the first good part of the next run. The process analyzes the current changeover process, identifies waste, identifies the internal and external activities, separates the two activities and standardizes the process. Most companies can reduce down time due to changeover by 50% for machines that have not been analyzed without expending capital. Participants will learn about the process and apply the learning by actually analyzing a changeover of a machine at their organization.

TEAM SCIENTIFIC METHOD (TSM)

Team Scientific Method (TSM) is about applying the Toyota Thinking Process and creating conversations around team learning. TSM should be viewed primarily as a celebratory activity, utilizing the recognition of effort to drive the process. The team uses the daily management measures to identify problems/variation within their process and create rapid experiments based on data.

Team Scientific Method creates higher level opportunities to apply Scientific Thinking on larger issues, thus cascading the Scientific Thinking up the organization while the measures are cascading down through the organization.

TOTAL PRODUCTION MAINTENANCE (TPM)

Total Production Maintenance (TPM) is a company-wide team-based effort to improve equipment performance, which then leads to higher productivity and better quality. The basic tools of TPM and a plan for implementing them are covered.

Participants also learn how to calculate and use Overall Equipment Effectiveness, the key metric for measuring equipment performance. This course emphasizes the importance of teamwork and integration between production personnel and the maintenance department.

TOYOTA KATA

Toyota Kata is a lean method that creates a sustainable culture of daily continuous improvement through the use of simple routines. It is not the solution to a problem that makes and keeps an organization successful, it is the ability to continually develop solutions for continually developing process issues that allows an organization to thrive. Nurturing and maintaining this ability to practice continuous improvement is a core responsibility of a company's leadership team. This tool looks at two particular behaviors that focus on solutions: *Improvement Kata* and *Coaching Kata*.

Classroom: Introduction to the Toyota Kata theory and its use and success at Toyota; Hands-on demonstrations and exercises using a simulation; Why Toyota Kata is successful compared to other management systems; Five-Question Coaching Dialog and Rapid PDCA Cycles; Explanation and Application of Coaching Dialog and PDCA Cycles

Shopfloor: Review of Toyota Kata concepts and principles; Hands-on practice applying the concepts to an actual value stream; Discussion of sustaining the Kata process and roll out

LEAN SOLUTIONS/CONTINUOUS IMPROVEMENT

TRAINING WITHIN THE INDUSTRY (TWI)

Training Within the Industry (TWI) is a systematic method of delivering consistent training. It will provide a standard basis for the teacher to teach, thus improving the consistency and speed in which trainees learn. TWI focuses on documenting the training process and providing key activities, important points and reasons for each activity.

TWI teaches instructors how to instruct using the “J” process:

- *Job Instruction*
- *Job Methods*
- *Job Relations*

This standard approach is documented to allow the instructor to apply the process to any task being taught and prepares the employee, breaking down the job and establishing a human relationship. TWI also incorporates the five needs model for supervisor/leader development and focuses on:

Types of Skills:

- *Instructioning*
- *Improving Methods*
- *Leadership*

Types of Knowledge:

- *Work*
- *Responsibilities*

The structure and support process provides the tools and assistance to support the TWI process, including:

- *Job Breakdown Sheets (JBS)*
- *Skill matrix that reflects the strategic goals of the company*
- *Progressive learning plan for each participant*
- *Training schedule*

Leadership: TWI connects with a company's leadership team to establish a strategic connection between learning and company goals. The team will learn about coaching and mentoring processes that influence the learner, TWI trainers and supervisors, and how to audit the process to ensure it's being followed and improvement opportunities are being identified.

Human Resources: TWI training connects with a company's HR department and identified support persons in a series of hands-on learning connected with creating the system to support the TWI process. This team will learn about and create the skill matrix, training schedule and progressive learning plan. The HR team works ahead of the TWI process to ensure the right material and follow-up is in place.

VALUE STREAM MAPPING (VSM)

Value Stream Mapping (VSM) identifies wastes and constraints in your current value stream. It develops a methodology for accurately assessing the current state and future state processes and uses activity-based process modeling techniques to capture cost, time, and other operational data along any given Value Stream.

In this training, participants develop a current state map, future state map(s), and implementation plan. Participants will learn the principles of VSM and create the maps and implementation plan over several sessions. Each session will advance the learning and include homework for the team to practice and collect additional data for the next session.



MANUFACTURING DESIGN

DESIGN FOR MANUFACTURING & ASSEMBLY (DFMA)

Design for Manufacturing & Assembly (DFMA) is used by companies to develop product designs that use optimal manufacturing and assembly processes.

Our DFMA program uses a cross departmental approach that uses a systematic process to collect and analyze data and customer requirements. This DFMA process analysis leads to significant reductions in production cost, without compromising time to market goals, functionality and quality.

PRODUCTION PREPARATION PROCESS (3P)

Production Preparation Process (3P) is often referred to as “design for manufacturability.” Starting with a clean development slate, 3P rapidly creates and validates potential production and process designs that require the least time, material and capital resources. 3P typically results in products that are easier to manufacture, have built-in quality, and have less complexity.

The Center-West's overview introduces organization to the basic principles of 3P. Participants learn the importance of function and value analysis, using human intelligence to stop a line automatically when a defective part is detected. They also learn the importance of seven unique alternatives, process mock-up, refinement, and early equipment management.

Participants also learn how to calculate and use overall equipment effectiveness, the key metric for measuring equipment performance. This course emphasizes the importance of teamwork and integration between production personnel and the maintenance department.

QUALITY MANAGEMENT

The Center-West offers implementation and training for the most current quality systems development, such as management overview, system modification, internal auditor training, internal audits, system review and corrective action, for the following:

- ISO 9001 (most manufactured items)
- IATF 16949 (automotive-related products)
- ISO 13485 (medical device products)
- ISO 9100/AS9100 (aerospace industry)
- ISO 22000 (food)
- ISO 14001 (environmental management)
- ISO 50001 (energy management)
- ISO/IEC 17025 (testing/calibration labs)

CORE TOOLS: APQP, PPAP & FMEA

This training 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.

CORE TOOLS: MEASUREMENT SYSTEMS ANALYSIS

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

CORE TOOLS: STATISTICAL PROCESS CONTROL

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.

LAYERED PROCESS AUDIT

Learn the philosophy, process and management of Layered Process Audits (LPA) based on AIAG publication: *Layered Process Audits Guideline CQI-8*. Topics covered: Planning, development and maintenance of LPAs; Types; Next steps; Scope; Check sheets; Non-conformance; and Compliance.

SIX SIGMA

Nearly every process within an organization has at least some problems. As a leader, trying to address every problem is impossible. Providing employees with Six Sigma training equips them with a logical and objective way to identify, measure and eliminate those problems. Suddenly, employees don't have to just cope with the 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. From executive leaders to front-line employees, Six Sigma training enhances the way employees approach their day-to-day work.

LEAN SIX SIGMA GREEN BELT

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.

LEAN SIX SIGMA YELLOW BELT

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, supportive context.

SIX SIGMA BLACK BELT

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

WHAT OUR CLIENTS ARE SAYING:

SIX SIGMA GREEN BELT

“Great balance of theory & real-world applications. Instructors are gifted at conveying what is essential to know in Lean Six Sigma.”

- Michael A., Controller

SIX SIGMA BLACK BELT

“This was a great Six Sigma course that I would recommend to anyone looking to improve their understanding of the DMAIC process and statistical analysis.”

- Jake F., Product Development Engineer

FOR MORE INFORMATION REGARDING THE CENTER'S TRAINING AND CONSULTING SERVICES, CONTACT YOUR MICHIGAN MANUFACTURING TECHNOLOGY CENTER-WEST BUSINESS DEVELOPMENT SPECIALIST

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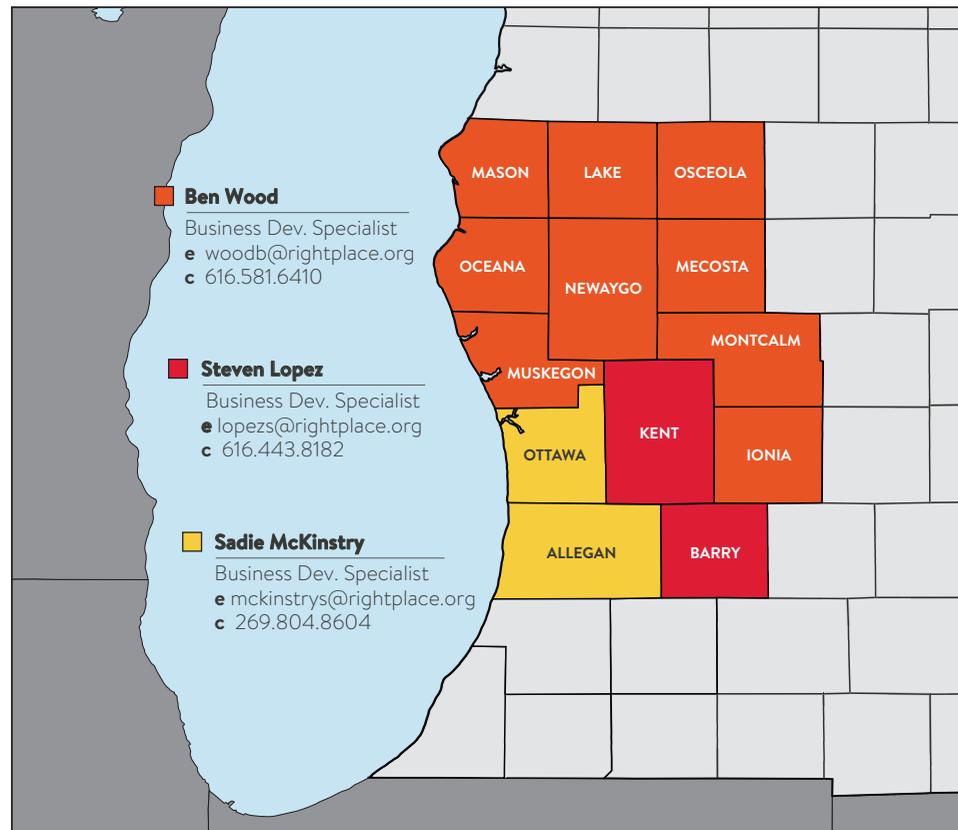
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Today, being a successful manufacturer requires more than simply taking and fulfilling orders. To be a leader, your company must work to continually improve all aspects of your business from customer service and bidding processes to optimizing production capacity and overall profitability. The Center can get you there. Our programs and services will help you:

- Increase Revenue and Profitability
- Accelerate Speed to Market
- Increase Production Capacity
- Improve Competitiveness
- Improve Customer Responsiveness
- Increase Cost Measurement Accuracy

In addition to the services listed in this catalog, The Center-West can assist you with consulting and training in areas of:

- Growth & Innovation
- Industry 4.0
- Talent and Culture Development
- Strategic Planning

For more information, contact your Business Development Specialist or visit our website at: thecenterwest.org.

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